

Appendix 12.5

Protected Vertebrate Survey

Executive Summary

The CH2M/Fairhurst Joint Venture (CFJV) is responsible for designing and delivering the central section of the A9 Dualling project, Glen Garry to Kincaig. CFJV commissioned Land Use Consultants (LUC), in June 2015, to undertake a survey of the protected vertebrate species found in the terrestrial habitats of the central section. The purpose of the survey is to establish a baseline of the protected fauna species and inform the Environmental Statement of the proposed dualling of the A9 trunk road.

The habitats along the Project 7 section are typical for areas along the A9 corridor in central highland, upland moorland subject to human impact and alteration. Project 7 includes the Drumochter Pass, the highest point on the A9, at 460 m. The key characteristics of the wider landscape are heavily managed game estates on both sides of the A9, with east side of the road being much steeper and rockier. A' Bhuidheanach Bheag dominates the skyline on the east and the slopes and corries from the top of this munro are characterised by wind-clipped heath and boulder scree. The Beauly to Denny Overhead Line is also very close to the A9 along this section and construction on the steep slopes resulted in a large footprint of disturbance over the previous years. Though the west side of the A9 was generally hilly, the River Truim and Allt Dubhaig, in the south, created a narrow but level valley of wet riparian corridor, especially between the railway line and trunk road. In this project area, the railway line ventures quite close to the road, creating a pinch point between the new OHL and railway line.

As a result of the disturbance and relatively exposed location, little evidence of protected terrestrial vertebrate species was found within the survey area, with the exception of water vole.

Of those species targeted in the survey, the following conclusions can be made:

- Otter activity was low, though this could be seasonal. Only three temporary resting sites were located on the Allt a' Chaorainn, more than 50 m upstream of the A9
- Water vole activity was very high along the River Truim valley
- No signs of badger were recorded
- No definitive signs of red squirrel were recorded
- No signs of wildcat were recorded
- No signs of pine marten were recorded
- There is some bat roosting potential within the area, though non-dwellinghouse roosting potential is limited to culvert/bridges, which are generally very exposed. Those structures with bat roosting potential were surveyed and no roosts were identified..
- Several other species are noted to be active through the site including mountain hare, brown hare, common lizard, and slow worm

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1 Introduction

1.1 Remit

1.1.1 Land Use Consultant (LUC) was commissioned by CH2M/Fairhurst Joint Venture (CFJV) to undertake a protected species survey, limited to terrestrial vertebrates, along the length of Project 7. The species targeted and study areas surveyed were agreed in consultation with Scottish Natural Heritage (SNH) and the Cairngorms National Park Authority (CNPA), and include:

- Otter
- Water Vole
- Badger
- Red Squirrel
- Wildcat
- Pine Marten
- Bats

1.1.2 The survey is required to help establish an ecological baseline of the road corridor which will inform the design options and subsequent Environmental Statement for the central section, Glen Garry to Kincaig.

1.1.3 This report sets out the methods adopted, the baseline findings and an interpretation of the site's ecological features as they relate to terrestrial vertebrates; the remit of this particular report is limited to the Project 7 area.

1.2 Proposed Development

1.2.1 This report informs the proposed dualling of the A9 between Glen Garry to Dalwhinnie, an approximately 10km stretch of road comprised of 9.5km of mainline and 1.3km of tie in at the Northern and Southern extents. The route is currently comprised of a single carriageway trunk road. The proposal will also include a new junction in the Dalnaspidal area.

1.3 Site Description

1.3.1 The central section is characterised by varying habitats, with the Project 7 section (Glen Garry to Dalwhinnie) being influenced by the local land management, primarily for game, and the very close railway line. The existing A9 trunk road and its embankments form the main study corridor. A relatively narrow survey buffer was applied to either side of the existing road corridor to allow consideration of various scheme design options.

1.3.2 The habitats on either side of the road within Project 7 are dominated by open moorland. The main landowners of the Project 7 corridor manage the land as sporting estates and, as such, have cultivated the upland moorland habitat for grouse and deer.

1.3.3 The eastern side of the road is dominated by the A' Bhuidheanach Bheag and its steep corries, resulting in a very open landscape with little vegetation cover (mostly wind-clipped heather)

found beyond the immediate road verges. Boulder scree is also present in pockets on the steep slopes, especially at the southern end of the site. The steep slopes are likely to have contributed to the very close proximity of the Beauly to Denny OHL within Project 7 and may have resulted in greater impact on the local wildlife due to disturbance during the two to three year construction and reinstatement period.

- 1.3.4 The west side of the road is less developed with the only dwellings found at Balsporran and Dalnaspidal. Grazing is also less intensive, being largely found just north of Dalnaspidal, up to the Boar of Badenoch, and within the narrow corridor formed by the railway line and road.
- 1.3.5 The railway line and River Truim are the key features west of the road, both creating wildlife corridors and causing fragmentations of habitat. The increased number of small burns flowing down from the corries in the east into the flat riparian corridor of the Truim has created a modified wet heath within the narrow strip between the road and the railway line. There was similar habitat west of the railway line, though there were also large patches of bare peat (hagging) along the rail corridor. The distance between the railway line and the road is particularly narrow within Project 7 creating a pinch point and possible challenge to design options.
- 1.3.6 Dense scrub is found in isolated patches within the survey area and, where it is present, is found only within the railway network boundary, on the immediate roadside, or around established dwellings such as Drumochter Lodge. Relatively young, coniferous plantation tree-belts (< 30 years old) are also found in narrow strips along the road, acting as screening and snow break.
- 1.3.7 Target notes are provided in **Appendix 1** to this report and further detail of survey results in the form of mapped data can be found in **Drawings 12.29 – Drawings 12.35** (see **Volume 3** of the **ES**). Photographs of key findings or of best examples of field signs can be found in **Appendix 2**.

1.4 Policy and Legislation

- 1.4.1 The report has been prepared in cognisance of relevant legislation and policy, including European and domestic environmental legislation, UK nature conservation policy and local biodiversity guidance.
- 1.4.2 European and national legislation along with planning policy and guidance relevant to the site is listed below:
- The Conservation (Natural Habitats, &c.) Regulations 1994, as amended in Scotland;
 - The Wildlife and Countryside Act 1981, as amended in Scotland; and the
 - The Protection of Badgers Act 1992, as amended in Scotland.

2 Methods

2.1 Desk Study

- 2.1.1 All data previously gathered for this project has been examined in a desk based study to help inform future surveys and site investigations. The desk study included results of consultation with all key stakeholders, and included a review of all protected species data recorded within the Phase 1 Habitat Survey (**Appendix 12.2**). The findings of the desk-based search are provided in **Appendix 3** to this report.

2.2 Field Study

- 2.2.1 A survey for the statutorily protected terrestrial vertebrate species expected to be present, as outlined below, commenced in July 2015. Project 7 was surveyed by a two-person team traversing the site on foot. A project footprint was determined by CFJV to encompass the existing road and all mainline and junction options being considered; in some locations it is significantly larger than the final scheme is likely to be. A survey buffer was applied to both sides of the road in order to ensure complete collection of data in advance of design plans. The survey buffer extended to 50 m on either side of the project footprint for terrestrial habitats and was extended to 100 m on either side where watercourses or waterbodies were encountered¹.
- 2.2.2 For clarity, the ‘survey area’ includes both the project footprint and the agreed buffers for each habitat type, where accessible.
- 2.2.3 All observations were recorded on hand-held android tablets using the Arc Collector app from Esri. By using mobile GIS mapping devices, surveyors were able to quickly record all data and digitise locations in the field for improved accuracy and efficiency. By using tablets, all information provided, such as the project footprint and access constraints, were accessible and viewable in the field. Photographs are automatically geo-referenced allowing for improved analysis. The rolling digitisation of site records also allowed for immediate upload and use of the data by the CFJV ecologists and engineers. The tablets allowed surveyors to draw polygons where areas of habitat suitability or use by sheltering animals were noted. When a resting site could be considered to cover a larger area, such as water vole habitat along a watercourse, polygons were used rather than a large number of individual points for each sign. Point-data for specific records, such as sprainting sites or holts, were also recorded.
- 2.2.4 The following species were searched for within the survey area, as informed by the results of the desk study, and by our understanding of protected species in Central Highland¹.

¹ See Footnote Reference 1 (CFJV/JUK/AM 2015)

Otter

- 2.2.5 All accessible riparian habitats within the survey area were surveyed to allow an assessment of the suitability of the site for use by otters (*Lutra lutra*). Specifically, structures and vegetation growth which could offer otters a lying-up site were checked or noted for sheltering potential. The likelihood of sheltering at a particular structure was determined by the quality of the feature and the ability to provide key requirements for otters, i.e. commuting and foraging opportunities and cover and seclusion to allow rest. If the site offered reasonable sheltering potential it was noted on the tablet on the 'habitat suitability' layer.
- 2.2.6 Where specific signs of otter presence were found, these were noted as point-data. Signs of otter activity, including spraints (recording whether recent or old), tracks, runs, slides, feeding remains, and resting sites, along all accessible watercourses and -bodies were recorded in line with the methods detailed in SNH's Guidance for Otter Survey². The resting sites are defined as:
- **Holt:** A cavity or hole, in the ground, under tree roots, within rocks or caves where the back cannot be readily seen. If a holt is confirmed as active it usually contains field evidence such as spraints.
 - **Hover:** The term hover is used to describe a bolt hole or ledge that provides temporary cover or a place to eat captured prey. It is not fully enclosed and the back of the hover can usually be seen. There may be spraints, footprints, and feeding evidence present.
 - **Couch:** This is a place above ground where an otter can lie up or groom. These may take the form of a depression in tall vegetation where the otter has been lying, or may be covered in a vegetated grass or reed 'roof' and contain bedding.
 - **Breeding site:** A term used to identify an area of land in which otters breed. The site may be large and it is usually more important to protect this site than an individual natal holt.
 - **Natal holt:** A discreet holt site that is used by a bitch to birth cubs, where they will usually remain here for up to 3 months, before being moved to a secondary holt. These sites are seldom located in the field and are rarely recorded without aid of camera traps. It is generally accepted that most natal holts will contain bedding material and sprainting activity is minimal whilst occupied.
- 2.2.7 Spraints are described as the follows:
- **Fresh:** The spraint is still very moist and pungent, and was likely to have been deposited within the last few days or hours.
 - **Recent:** The spraint has become decayed but retains consistency and some odour, it is dry and colour is more faded; it is likely to have been deposited within the last week or two.

² <http://www.snh.org.uk/publications/on-line/wildlife/otters/default.asp>

- Old: The spraint is desiccated and powdery having lost its shape and most odour. Usually remains are still evident and identifiable. It is likely to have been deposited approximately a month ago (sometimes longer).

Water Vole

- 2.2.8 As with otters, all accessible riparian habitats within the survey area were surveyed for water voles (*Arvicola amphibius*), in line with the Water Vole Conservation Handbook³. The objectives of the survey were to identify the presence of suitable habitat for water voles within the survey area and detect field evidence of their presence. Signs of water vole included latrines/droppings, feeding evidence (e.g. caches and lawns), and burrows along all accessible watercourses and -bodies present.
- 2.2.9 Where watercourses and their adjacent vegetation had potential to support sheltering water vole, the area was digitised in the field as a polygon and recorded as such. Where definitive signs of water vole were encountered they were recorded as either point-data for individual signs (e.g. isolated latrine), or within a polygon (e.g. a complex of burrows and latrines). If a watercourse supported water voles along its length, the polygon started at the feature nearest the A9 road and extended to enclose all signs for that reach.

Badger

- 2.2.10 The search for badgers (*Meles meles*) followed the method described in Harris *et al.*⁴ in the publication 'Surveying for Badgers'. Badger territories in the Highlands tend to be large and wideranging. However badgers, being habitual creatures, can be found in typical habitats characterised as sheltered areas with free-draining soils, especially in larger territories with greater choice for habitat. While attention was focussed on forested or scrubby areas, drier grassland parts of the site were also searched, where present. Signs of badgers encountered on site would be recorded on the tablets as point data.
- 2.2.11 Direct evidence of badgers searched for included:
- Badger setts
 - Tracks, prints and paths
 - Hair
 - Latrines and dung pits (fresh, recent or old)
 - Feeding remains

³ Strachan and Moorhouse (2006) Water Vole Conservation Handbook (2nd Edition)

⁴ Harris, S., Cresswell, P. & Jefferies, D. (1989) Surveying for Badgers, Occasional Publication of the Mammal Society No. 9. Mammal Society, Bristol

2.2.12 The setts are defined as:

- **Main:** These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. They usually have well used paths to and from the sett and between sett entrances
- **Annexe:** These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. They usually have well used paths to and from the sett and between sett entrances
- **Subsidiary:** These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. They usually have well used paths to and from the sett and between sett entrances
- **Outlier:** These usually only have one or two holes, often have little spoil outside the hole, have no obvious path connecting them with another sett, and are only used sporadically

Red Squirrel

2.2.13 Where suitable habitat was present, primarily continuous, mature coniferous or mixed woodland, an assessment for red squirrel (*Sciurus vulgaris*) suitability was made. Assessments were based on the age, size and type of woodland present and its connectivity to other good quality habitat in the wider area. Where an area was deemed particularly suitable for red squirrel, a polygon was recorded in the field on the 'habitat suitability' layer.

2.2.14 Within suitable habitat, signs of red squirrel were also searched for, in line with the Forestry Commission Practice Note 11⁵. Signs of activity include sightings, feeding remains, and dreys. As grey squirrels (*Sciurus carolinensus*) are now known to be present in the Cairngorms National Park, identification of shared signs, such as dreys, can be unreliable, unless the animal is sighted at the time of survey. Therefore the „precautionary principle“ was applied and all signs of squirrel activity were assumed to be from red squirrels, unless otherwise demonstrated. Any signs of red squirrel noted in the field would be recorded as point data.

Wildcat

2.2.15 As wildcat (*Felis sylvestris*) are known to be in the Cairngorms National Park area, it is possible wildcat signs could be encountered. During the course of surveys, habitats which could support wildcat, especially for sheltering, were noted and mapped. Examples of the types of habitats in which wildcat are found include mixed-age woodlands, rough upland pasture and open moorland but a mixture of some cover must be nearby for sheltering and hunting, such as rocky outcrops and dense woody scrub⁶.

⁵ Gurnell, et al (2009) Practical techniques for surveying and monitoring squirrels.

⁶ Ed. by Cresswell, et al (2012) UK BAP Mammals Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. Southampton

- 2.2.16 Any habitat deemed suitable for wildcat denning was checked, where accessible, in line with the UK BAP Mammals Interim Guidance⁶. Additionally any possible signs of wildcat, such as feeding remains and scats, would be recorded and sampled for analysis.

Pine Marten

- 2.2.17 Pine marten (*Martes martes*) were also searched for using the UK BAP Mammals Interim Guidance⁶ as a survey guide. Suitable habitat, generally large and mature conifer woodlands, were noted and mapped as polygons on the tablets.
- 2.2.18 Within these areas, signs of pine marten would be recorded as point-data. Signs of pine marten searched for included sightings, feeding remains, scats, and dens. Any potential dens were checked for signs of use by pine marten. As with wildcat, any scats or feeding remains suspected to be from pine marten would be sampled for analysis.

Bats

- 2.2.19 A preliminary Bat Roost Potential (BRP) assessment was undertaken of trees and buildings within the survey area, where possible. The BRP is designed to identify and assess structures which may provide suitable roosting opportunities for bats and may therefore require targeted survey effort.
- 2.2.20 The BRP assessment takes into account the range of roosting conditions required by bats throughout the year and followed assessment criteria set out by standard guidance prepared by the Bat Conservation Trust⁷. The criteria used to categorise bat roost potential (BRP) are summarised in **Table 2-1**, below. The table also summarises what actions, if any, are required following classification.

Table 2-1: Bat Roost Potential Categories

Category	Description
Known or confirmed bat roost	Bats or evidence of bats recorded, both of recent and/or historic activity. Works affecting a roost are licensable. Further survey (e.g. dusk emergence/dawn re-entry survey in accordance with best practice) is required to determine the bat species present, nature of roost and level of use before mitigation can be determined. Seasonal constraints may apply.
1* High BRP Structures with multiple features capable of supporting a bat roost.	Features include holes, cracks or crevices that extend or appear to extend back to cavities suitable for bats. In trees, examples include rot holes, woodpecker holes, splits and flaking or raised bark which could provide roosting opportunities. In buildings, examples include eaves, barge boards, gable ends and corners of adjoining beams, ridge and hanging tiles, behind roofing felt or within cavity walls. Ivy cover is sufficiently well-established and matted so as to create potential crevices beneath Further survey is required to determine whether or not bats are present and if so, the bat species present, nature of roost and level of use. Appropriate mitigation and potentially licensing requirements may then be determined. Seasonal constraints may apply.

⁷ Hundt, L. (2012) Bat Surveys: Good Practice Guidance, 2nd edition, Bat Conservation Trust

Category	Description
1 High BRP	As per Category 1* but tree or building supporting fewer features or with potential only for use by single bats. Further survey is required to determine whether or not bats are present and if so, the bat species present, nature of roost and level of use. Appropriate mitigation and potentially licensing requirements may then be determined. Seasonal constraints may apply.
2 Moderate BRP	From the ground, building/ tree appears to have features (e.g. holes, cavities or cracks) that may extend back into a cavity. However, owing to the characteristics of the feature, they may be sub-optimal for roosting bats; however presence of bats cannot be ruled out. Alternatively, if no features are visible but owing to the size and age and structure, hidden features, suboptimal for roosting bats, may occur that only an elevated inspection may reveal. In respect of ivy, the cover is not dense (i.e. providing BRP in itself) but may mask presence of BRP features. Further surveys required in order to rule out, beyond all doubt, that bats are not using the feature as a roost. Appropriate mitigation and potentially licensing requirements may then be determined. Seasonal constraints may apply.
3 Negligible	An inspected building/ tree that is considered as not having potential for roosting bats. No further survey or mitigation required.

2.2.21 Bat activity surveys, specifically roost surveys at dawn and dusk, were undertaken in the summers of 2015 and 2016 (see **Appendix 12.6**).

Other Species

2.2.22 Other species of conservation interest encountered, though not targeted specifically, were recorded for completeness. These species were recorded as point-data for their sightings only. These animals are not subject to the comprehensive or strict protection of the animals above but are still regarded as of having ecological value and have some protection under the Wildlife and Countryside Act, (e.g. mountain hares). Where appropriate, habitat suitable for hibernation use, only, was also recorded as polygons; habitat suitability for summer sheltering was not recorded due to the ubiquity of these types of sites.

2.2.23 During this survey, where knowledgeable land managers and owners (e.g. local gamekeepers) were encountered, they were asked about species presence. This allows for a wider, temporal view of certain species than what is achieved during single season and can contribute to our understanding of the site. However, it was not used as a substitute for any survey outlined in this report and all suitable areas for any target species were checked for field signs.

Constraints to Methods

2.2.24 Evidence of protected species is not always discovered during a survey. This does not mean that a species is not present; hence, the surveys also record and assess the ability of habitats to support protected species. The time frame in which the survey is implemented provides a 'snapshot' of activity within the survey area and cannot necessarily detect all evidence of use by a species.

2.2.25 Though July is considered to be an optimal month for most fauna species surveys due to activity levels, dense vegetation growth in summer can obscure signs of species presence. Considering the land management within Project 7, it is not considered that dense vegetation posed a severe constraint to survey. Any areas with significant access constraint or dense vegetation were recorded and mapped.

- 2.2.26 There is widespread understanding that wild cat can be particularly difficult to survey, even in areas they are known to be occupying, notwithstanding the challenges in surveying any highly mobile and crepuscular species. This difficulty was acknowledged by the field surveyors on this site and is why assessment was made throughout the survey period for habitat suitability for this animal.
- 2.2.27 The size and scale of the survey and timing of the project meant that survey visits were conducted in all weather conditions. The generally below average temperatures and weather conditions in summer 2015 may have had an impact on species populations, particularly in exposed and elevated regions, such as central Highland. It is not possible to quantify the potential impact the weather may have had on local populations at this time.
- 2.2.28 Private dwelling houses within the survey area were not assessed for bat roosting potential unless specific access was granted for those buildings.

3 Baseline

3.1 Desk Study

- 3.1.1 Desk-based study of the available data indicates that otter have been historically active in the Project 7 area. Activity was particularly high in the vicinity of Dalnaspidal Lodge and at the A9 road culvert of the Allt a' Chaorainn, which includes a holt downstream of the trunk road.
- 3.1.2 No records of sightings were recorded for bats, water vole, pine marten, red squirrel, or wild cat; though some habitat suitability was identified at a course level based on Phase 1 habitat survey data. Please see **Appendix 3** for details of these records and specific locations.

3.2 Field Study

Otter

- 3.2.1 Otters are known to be very active within the Cairngorm area, with the nearby River Spey (which includes several tributaries) bearing a European designation for otter. They are well-established in the Cairngorms National Park and are found in every 10 km². Part of the reason for this density of animals is the generally high water quality of the park's rivers and abundant source of food.
- 3.2.2 The River Truim is the main watercourse within the survey area, running parallel to the A9 along much of the existing A9 corridor. However, the designated channel (as a River Spey tributary) is confined to the northern two-thirds of the survey area, but does include an approximately 350 m reach of the Allt Coire Fhar (tributary of the Truim) at Balsporran. In the southern quarter of the survey area, the main river, occupying a similar (though not designated for terrestrial vertebrates) position is the Allt Dubhaig. Within the survey area, both rivers have characteristics of a lowland, sinuous river with low-gradient and slow flow, though outwith the boundary geomorphological characteristics can differ greatly. There are varying sizes and shapes to the tributaries feeding the rivers, including man-made ditches and small burns, with many flowing down from the corries in the east. The presence of the current A9 road and the railway line has affected the connectivity of many of these channels as well as the water quality. Land use practices have also greatly reduced the areas of riparian vegetation found along these burns as well.
- 3.2.3 Though the River Truim and Allt Dubhaig run parallel to the A9 trunk road through nearly all of Project 7, there is little habitat of value to otters found along them and their tributaries suitable for otter sheltering, especially on the west side of the road. Land use along the Truim is predominantly grazing between the river and the road in the southern part of the site and is excessively wet and marshy in the northern and central areas of the survey area. Intensive grazing, coupled with the vegetation types present, has meant that the dense cover usually used by otters for sheltering is not present in any significant amounts.
- 3.2.4 On the east side of the road the larger tributaries, the Allt Coire Chuirn (Target Note HS18) flowing in to the Truim and the Allt a' Chaorainn (HS9) leading into the Allt Dubhaig, do offer some otter sheltering potential in the form of deeply undercut but heathery banks and boulder deposits. Few other (HS3, HS8, HS13, HS19) smaller, incidental opportunities for otter sheltering were noted across the survey area, e.g. dry drains, boulder deposits, footbridge.

- 3.2.5 Beyond the river, to the west, the land becomes more upland in character and is managed as sporting estates. Land management practices along Project 7 include regular muirburn, which keeps vegetation down.
- 3.2.6 Additionally, the water levels of the watercourses, at the time of survey, were quite low. Despite a predominantly wet summer in 2015, the water level for the River Truim was much reduced from its standard carrying capacity. Personal communication with the head gamekeeper within the Project 8 survey area indicated that much of the water from the local watercourses is diverted to serve hydro-schemes both locally and further south, in Pitlochry.
- 3.2.7 Despite the healthy population within the park as a whole, evidence of otter activity within the Project 7 survey area is very low overall considering the number and size of watercourses present. Sprainting was only recorded in six locations within this project. Three of the spraint locations were within culverts under the A9 and cycle track on the Allt a' Chaorainn (O1, O2, O3); the most recent and highest number (15) of spraints were found here. The other main sprainting site (O9) was below an estate track bridge behind Drumochter Lodge; these five deposits were old. The final two spraint locations (O7, O8) were old deposits on boulders along the Truim, south of Balsporran. Prints were also recorded within a large culvert under the A9 on Allt Coire Bhotie, near the north end of the project area (O10).
- 3.2.8 The only otter resting sites recorded during the survey were located on the Allt a' Chaorainn, between 78 m and 154 m upstream of the A9 and the above sprainting sites. The two couches (O4, O5) were located under overhanging peat with spraints found at each site. The hover (O6) was formed by a heather tussock roof and boulder walls; three old spraints were found within. No holts were found during the survey.

Water vole

- 3.2.9 Water vole activity is significant within the Project 7 survey area, with the highest concentration being through the middle of the survey area west of the A9 road. The wet modified bog formed within the narrow corridor between the trunk road and railway line has created optimum conditions for water vole sheltering and foraging, especially at the Pass of Drumochter, though a few areas of similar habitat north of Balsporran were also recorded. This riparian corridor is generally flat, with slow moving water through peaty substrates. There is little or no overshadowing by trees and the riparian vegetation is extensive and varied. Disturbance in this area is low, from both human and livestock. The constant wet conditions, even through summer, make this area less suitable for intensive livestock grazing (especially by cattle which would cause more poaching), though past grazing during drier periods has allowed suitable foraging grasses to persist in the those areas of higher water vole density. Within reaches where the activity levels dip, the vegetation is dominated by bog myrtle and heather, with less diversity of foraging plant species.
- 3.2.10 Polygons were drawn for reaches of watercourses to allow the recording of water vole signs in compartments rather than along whole burns. This allows for easier assessment of population density and to note where activity levels altered along a single burn. Where notable observations were made, e.g. sighting or where burrows are very close to the A9, these were recorded as point-data.
- 3.2.11 Activity levels were variable and showed a relationship with the vegetation species present. It was also clear that the local population moves around within the corridor as the water levels and vegetation structure alters. At the time of survey there were three polygons (WVH23, WVH26, and WVH27) recorded with only burrows recorded (no latrines), and at least 18 sites (WVH1, WVH6, WVH7, WVH8, WVH9, WVH10, WVH12, WVH13, WVH14, WVH15, WVH16, WVH17,

WVH18, WVH19, WVH20, WVH21, WVH22, WVH24, WVH29, and WVH30) with both burrows and latrines recorded. This variation of activity and usage along even one burn, demonstrates the mobility of this species in the area. Runs, caches and lawns were also noted through the site. Considering the low level of disturbance of the area and the extensive habitat present, it is highly likely that above ground nests are present, especially under the heather tussocks, as exemplified by a single water vole sighted entering, then exiting, the burn from beneath heather.

- 3.2.12 At least seven areas (WVH2, WVH3, WVH4, WVH5, WVH11, WVH25, WVH28) and were identified as being suitable for water vole, in terms of geomorphology, but no definitive or recent signs were recorded. These may be considered for future mitigation sites, should they be required.

Badger

- 3.2.13 Woodland belts are present in sections along the A9 trunk road, and are mostly limited to the east side of the road in broken strips. These trees are generally no older than around 30 years and were likely planted at the time of the last A9 construction/upgrade to provide screening from estate shooting and as snow breaks from the steep hills immediately to the east. The woodland belts are fragmented and thin, and the ground within these belts is generally wet. The habitat surrounding the woodland belts is open moorland, dominated by heather subjected to regular muirburn. The historic land use, habitats present, and fragmentation from suitable habitats make it unlikely that badgers are present within the survey area.
- 3.2.14 The small woodland immediately around Drumochter Lodge is more diverse and mature. However, these trees are used to provide cover for estate buildings, kennels, equipment store and maintenance, resulting in high levels of daily disturbance from vehicles and dogs.
- 3.2.15 Mature conifers are also found around Dalnaspidal, though most are west of the railway line around the Lodge. A derelict house, overgrown and blocked by fallen trees and scrub, is also located immediately adjacent to the railway line here.
- 3.2.16 No evidence of badger was recorded during the survey. Suitable habitat for badger is limited within the Project 7 survey area.

Red Squirrel

- 3.2.17 The habitat within the survey area was considered to be sub-optimal for red squirrel. The few woodland belts, mentioned above, were thin and fragmented, with no apparent connection to good quality squirrel woodland. Though some species of tree were producing cones, the woodlands were young overall. The fragmented nature of these belts and their proximity to the A9 make them unattractive and unsuitable for red squirrel.
- 3.2.18 Feeding remains consistent with squirrel were recorded within the woodland around Drumochter Lodge (target note RS1), though no other signs were recorded (e.g. dreys). Personal communication with the gamekeeper residing in one of the apartments within the Lodge indicated that no squirrels have ever been observed around the house or its woods.
- 3.2.19 No other possible or definitive signs of red squirrel were recorded within the Project 7 survey area. No grey squirrels were observed at any time while surveyors were in the area, either within or outwith the survey area.

Wildcat

- 3.2.20 Though the larger patches of boulder scree at the south of the survey area (east of the A9 and Dalnaspidal Lodge) may offer some limited sheltering potential, the lack of overall cover, e.g.

scrub and woodland, for hunting and good quality shelter in poor weather, make this site unattractive for this elusive species. There are various causes of current declines in wildcat numbers but the sub-optimal habitat within Project 7 and levels of active land management make this area unlikely to support any regular wildcat visitor. Personal communication from local gamekeepers indicated that though wildcat were once seen in the vicinity of the A9 in past years, they are currently only known to be present in the higher corries, several kilometres away from the A9.

- 3.2.21 No signs of wildcat were recorded anywhere within the Project 7 survey area.

Pine Marten

- 3.2.22 As with the wildcat, the lack of suitable sheltering habitat and cover make the survey area unattractive to pine marten. Though less shy than some other animals and more likely to use buildings for breeding, each pine marten does require a large area of continuous woodland. The lack of large woodland within the survey area makes it unlikely that pine marten are occupying this site. Personal communication with local gamekeepers indicate that the nearest pine marten territory is likely to be well north of the survey area, within the woodland, known locally as 'Dalwhinnie Wood', along the north shore of Loch Ericht.

- 3.2.23 No signs of pine marten were recorded during the survey.

Bat Roost Potential

- 3.2.24 Bat roosting potential (BRP) in the Project 7 survey area was low overall. There were few suitably mature woodlands and structures offering roosting opportunities. The open habitat and fragmented woodlands make the site a challenging place for bats, especially when combined with the more severe weather, higher altitude, and colder temperatures.

- 3.2.25 The structure with greatest BRP is Drumochter Lodge (BT6), approximately 4 km south of Dalwhinnie. This former hunting lodge is a traditional stone or brick-built house with a smooth render covering. Though two storeys, the upper windows are partially dormered into a slate, multi-pitched roof. Deteriorating soffit and fascia boards, gaps under lead trim, and loose roof slates provide good roosting opportunities for bats. The style and age of the building is considered to be highly suitable and the building is classified as BRP 1. The house, though close to the A9 road (c. 50 m) is set within an open garden which is surrounded by mature conifer woodland, with a watercourse nearby. However, personal communication with current residents (gamekeeper and GWCT field study centre) have indicated that no bats have been seen roosting in or around the house. Beyond the garden and woodland, the property is surrounded by open moorland. No other occupied dwellinghouse within the survey area was assessed for BRP at this time.

- 3.2.26 The derelict house at Dalnaspidal (BT1) was also assessed, though only externally, as the fallen tree and dense scrub/ruderals made safe access impossible during the height of the growing season. The wooden structure has a pitched roof covered in a bitumen roof membrane and several windows were missing. Though open to the elements on the north side (via missing glass panes), the cover provided by the dense scrub and tall ruderals in summer and the largely intact roof would still offer good roosting potential. The river running adjacent to the house and dense vegetation provide foraging habitat and bat droppings were found within the nearby tunnel/culvert running under the A9. The building is classified as BRP 1.

- 3.2.27 Two large culvert tunnels within the survey area were also considered to offer bat roosting potential. The culvert for the Allt a' Chaorainn (BT5), which feeds into the Allt Dubhaig, is an

open-span and arched tunnel. It is approximately 3.5 m high at the apex and 7 m wide at the ground-level. The culvert is at least 35 m long at the ceiling apex and longer along the base. Expansion joints are located every couple of metres along the length of the culvert, like ribs extending from a central spine of one long expansion joint. These joints, though created by smoothed concrete do create gaps of varying widths, many of which are suitable for bats. Though the culvert is surrounded by open moorland, the good roosting opportunities have resulted in a classification of BRP 1.

- 3.2.28 The Dalnaspidal culvert/underpass (BT2) is of similar construction and size to the Allt a' Chaorainn culvert, with the main difference being that a track for vehicles is built into the tunnel structure; the length at the apex is approximately 40 m, c. 20 m longer at the base. The apex is approximately 4 m from the track surface, which sits approximately half a metre from the channel bed. The track is approximately 2.5 m wide and the man-made channel is closer to 3 m wide. The expansion joints form a similar spine and rib pattern to that found in the Allt a' Chaorainn culvert. As mentioned above, a few bat droppings were found scattered on the ledge within this culvert. The surrounding habitat provides more shelter and better opportunities for foraging bats with small woodlands and several buildings and gardens nearby. This structure is also classified as BRP 1.
- 3.2.29 Other culvert structures and trees (BA1, BA2, and BT4), with some limited BRP were identified during the survey and details on these can be found in **Appendix 1** and **Appendix 2** to this report. If located in more suitable locations, they could be classified as BRP 1 or 2 but they have been downgraded to BRP 3. One small culvert (BT3) under the cycle path was classified at BRP2 despite its exposed location due to the structure type and low position in the landscape. All of these culvert structures are of limited BRP due to their exposed locations, size, and the nature of their features.

Other Species

- 3.2.30 Several other species sightings were recorded during the survey. However, a search for shelters was not made for these species. The additional species recorded within Project 7 are mountain hare, brown hare, common lizard, and a single slow worm.
- 3.2.31 The open moorland habitats interspersed with agricultural pasture are suited to the brown hare; the smaller areas of pasture may be the cause for the fewer observations of brown hare. The land management targeting grouse may also create suitable environments for mountain hare.
- 3.2.32 On the drier, warmer days, common lizards were seen across the site. Again, the open habitat of mixed age heather provided an ideal mosaic of cover and basking opportunities. On one occasion a slow worm was observed at the southern end of the survey area.

4 Discussions and Recommendations

4.1 Field Study

- 4.1.1 The habitats within the Project 7 survey area ostensibly appear to be suitable for several protected vertebrates, such as badgers, and otters. However, the land use practices across the site, over many decades has influenced the presence, or lack of, many protected species targeted in this survey. The Pass of Drumochter, the highest point on the road network, runs along the centre section of this site. The munro, A' Bhuidheanach Bheag, and associated steep hillfaces and corries are also a dominating influence on the southern part of the Project 7 survey area. The exposed location, higher altitude, and heavy snowfall in winter will make survival here a challenge for many small animals. The combination of high human disturbance and challenging conditions has made Project 7 less attractive for many of the protected terrestrial vertebrates targeted in this survey. The balance to this is the presence of a flat, and relatively undisturbed riparian corridor parallel to the Pass, creating excellent water vole habitat, reflected in the high activity levels. The high hills to the east also create faster flowing rivers feeding into the River Truim and Allt Dubhaig, creating more sheltering opportunities for otters.
- 4.1.2 Grazing pressure was light within the Project 7 area, especially of larger livestock, i.e. cattle, resulting in less poaching of watercourses. This reduced pressure along the larger river gorges, alongside less intensive muirburn, has allowed some denser vegetation to thrive, creating opportunities for sheltering otters. Holts, especially natal holts, are still less likely to be found as the cover is not extensive, but opportunities for couches and hovers exist within the isolated stands of willow scrub, heather and boulder deposits on the larger rivers.
- 4.1.3 Though the Project 7 survey area afforded slightly more sheltering opportunities for otter than the open habitats further north, the overall suitability of the area is still lower than might be expected in Scotland. The River Truim, which forms the main wildlife corridor on the west side of the road, is a relatively large river channel, but flow has been significantly reduced with water being diverted to hydro-schemes, despite larger tributaries in this project area. Most of the water from the catchment surrounding this section of the A9 is channelled to a pipeline which feeds the Pitlochry Dam, approximately 50 km southeast. The low flow resulting from this diversion, coupled with general lower rainfall in summer may also contribute to reduced otter activity in the survey area. It may be possible that otters are more active in the survey area during other seasons when low-flow prey are available, such as amphibians in early spring, or when flows are higher and can carry prey fish. Though opportunities for otter sheltering is relatively low, preconstruction checks for otter will be required, especially if works commence within a different season to the baseline survey period.
- 4.1.4 The reduced grazing pressure in the survey area also benefits water vole, along with the lack of general disturbance created by the wet conditions within the River Truim corridor. This is evident in the extensive water vole habitat found along the centre of the survey area. Hydrological changes caused by the construction of the road and railway corridor may contribute to the wet habitats present between these two linear features. Increased water flow from more numerous and larger tributaries have also contribute to the locally high water level found in this peaty strip. Past grazing may have also helped to create a more complex vegetation structure suited to upland water voles. Activity level is variable within this central area, which may result from the large area of good quality habitat allowing the voles to choose the very best areas to

occupy and to move around the site as conditions change through the year. This is evidenced by large areas supporting burrows but no other signs of recent water vole activity.

- 4.1.5 The recent construction of the Beauly to Denny Overhead Line (OHL), which runs parallel to A9 trunk road through the entire Project 7 corridor, and removal of the previous OHL, may have a greater impact on the Project 7 survey area, especially in creating ongoing disturbance to any species which may normally occupy the site. The steeper slopes along the east side of the road has resulted in more challenging construction conditions and larger footprint of disturbance over the past two or three years. The distance between the new OHL, A9 trunk road and railway line is also much smaller, creating a significant pinch point, especially in the southern half of the survey area. The disturbance of these works was quantified in the Environmental Statement for that project (available on the Scottish Government website⁸). The works, though largely complete, were still ongoing at the time of the survey, with the temporary access tracks being mechanically reinstated and the pylons of the old line being dismantled and collected.
- 4.1.6 Both sides of the A9 trunk road, within the Project 7 survey area, are managed primarily as game estates. Regular, though widely spaced, muirburn was evident, which is a management technique used for rearing grouse. Game estates also tend to employ trapping of small predators, such as stoats and weasels, and this was evident across the survey area. The land management practices employed on game estates can result in reduced habitat for larger species, such as badgers and otters, though can be ideally suited to hare. Active management of small predators can also discourage the presence of the slightly larger hunters, such as pine marten and wildcat, even when they are not targeted.
- 4.1.7 Though bat roosting potential was low overall in the Project 7 survey area, it does exist. As such, follow-up bat surveys were undertaken in August 2015 and July 2016. The aim of the surveys was to determine if there are any bat roosts within the survey area and to gain an idea of the level of bat activity in the Project 7 area. No structure surveyed was determined to be a bat roost and activity level was very low overall. Although hibernation potential is very low, consideration will be given as to whether any winter surveys are required. The detailed bat survey results can be found in **Appendix 12.6**.
- 4.1.8 No other follow-up surveys are recommended at this time for terrestrial vertebrates.

⁸<http://www.gov.scot/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Beauly-Denny-Index/Environmental-Statement>

Appendix 1 – Survey Results Table

Table A1-1: Project 7 Survey Results Target Note Table

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
<i>Otter Records</i>				
O1	Three recent spraints on boulders within a large culvert. Photo ID: 7_O1_9	263199	775472	3000 (56 m)
O2	Two old spraints along a burn. Photo ID: 7_O2_11	263250	775513	3000 (19 m)
O3	Eleven spraints of mixed ages, including recent, within a culvert for the Allt a'Chaorainn.	263262	775523	3000 (30 m)
O4	Otter resting site under overhanging peat with spraint recorded on the Allt a'Chaorainn.	263320	775530	3000 (78 m)
O5	Otter resting site under overhanging peat with spraint recorded on the Allt a'Chaorainn.	263340	775550	3050 (102 m)
O6	A dry space under heather with boulder walls and three old spraints. A typical mountain burn, with bouldery channel and a waterfall upstream. Photo ID: 7_O6_4	263386	775587	3050 (154 m)
O7	Two old spraints on a grassy boulder at the edge of the watercourse.	262740	776897	4500 (82 m)

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
O8	An old single spraint on a boulder within the river channel. It was very old and almost calcified to the boulder; fish bones remains were present.	262526	777485	5100 (63 m)
O9	Five old spraints on boulders at the toe of a bridge abutment, very close to the gamekeeper cottages at Drumochter Lodge. The burn is fast-flowing at the bends with a cobble substrate.	263220	779500	7250 (236 m)
O10	Two otter prints within mud under a very large, round, corrugate culvert below the A9 road	263757	781437	9300 (8 m)
HS3	A dry drain channel running under the cycle track, which is suitable for use as an otter holt, but no signs of otter were found at the time.	264074	773718	1050 (70 m)
HS8	Large area of boulders placed for erosion protection which offers reptile hibernation potential and otter lying up potential, though no signs were noted.	263544	774614	2100 (49 m)
HS9	Hollow formed by erosion under a heather tussock alongside the river. No definitive signs of otter, but there were markings of mammal use within.	263308	775521	3000 (61 m)
HS13	Willow scrub along the banks of the River Truim was suitable for otter lying up, but no signs were noted.	262569	778650	6250 (82 m)
HS18	A fast flowing watercourse with several undercut banks overhanging the channel; not all were searchable. Potential for otter sheltering, though no signs found at the time.	263490	780515	8350 (117 m)
HS19	Defunct wooden bridge with space for sheltering below, potential for otter. It was on the opposite bank (no access) so no close inspection carried out.	263332	781074	8750 (211 m)

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
<i>Water Vole Records</i>				
WV1	This is the burrow nearest to the A9 within this very active reach.	263030	776272	3800 (26 m)
WV2	The closest burrow to the A9 within this very active reach, along with a cache and runs.	262992	776406	3950 (17 m)
WV3	A single old latrine was recorded near the railway line culvert. Runs were noted nearby but otherwise activity was generally confined to the main watercourse nearby.	262723	776885	4500 (102 m)
WV4	Good habitat with low, grazed banks and no real tussocks. 5 burrows and droppings were present. Photo IDs: 7_WV4_1 and 7_WV4_2	262324	778238	5850 (218 m)
WV5	These burrows are the closest ones to the road recorded on this burn. The count is also included in the polygon summary. Photo ID: 7_WV5_6	262951	779662	7350 (68 m)
WV6	Single WV seen entering water then exiting few minutes later.	262904	779669	7350 (114 m)
WVH1	Small burn flowing through a grassland with above ground nests and runs noted in the vegetation. 21 burrows and 13 latrines were recorded.	263443	774499	1950 (190 m)
WVH2	A small burn flowing through grazed, grassy pasture. Suitable for WV but no signs were recorded. Possible mitigation site.	263358	774828	2600 (96 m)
WVH3	Small burn within a deep ditch with some suitability for WV, but no signs	263050	775528	3050

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
	found. Possible mitigation site which comes to an end at a degraded sleeper cover.			(178 m)
WVH4	Marshy pond with some suitability for WV, but no signs of current use.	263015	775708	3250 (173 m)
WVH5	Small, still burn or flush with some suitability for WV mitigation, if grazing pressure were reduced. Exposed peat noted, possibly resulting from poaching.	262985	775789	3350 (179 m)
WVH6	Short section of burn with a very small channel (10-30 cm wide). Runs were observed in the vegetation, and 14 latrines and 16 burrows were counted. Photo ID: 7_WVH6_33	263087	775892	3450 (46 m)
WVH7	This marshy burn had high level of WV activity. The width ranged from 50 to 200 cm and WV signs were found as far out as 2 m. This upper reach was a more defined and wider channel. There were 4 latrines and 14 burrows and at least 1 cache.	263014	776299	3800 (22 m)
WVH8	The lower reach of this burn was heavily vegetated with water spreading from channel. One cache, 11 burrows, and 17 latrines were recorded	262911	776316	3900 (107 m)
WVH9	The lower middle reach of this burn had 4 latrines, 10 burrows and 2 caches. Numerous nests and runs were also noted in the riparian vegetation.	262946	776323	3900 (60 m)
WVH10	This middle upper reach of the burn has 3 latrines, 27 burrows and numerous runs. Photo ID: 7_WVH10_6	262983	776330	3900 (38 m)
WVH11	This narrow channel was very choked with willow scrub and litter. Runs were seen in the north end but no other signs were recorded.	263017	776336	3850 (6 m)

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
WVH12	The lower reach of this burn east of the railway becomes narrower (50 cm) highly active with 25 latrines and 22 burrows. Many runs were also noted in the sedge banks.	262884	776352	4000 (87 m)
WVH13	This reach of the burn/ditch (<50 cm wide) was very active with 12 latrines and at least 16 burrows, 2 caches. Above-ground nests are likely in the heather. A very large fresh latrine (40+ drops) was under a heather tussock in the middle of this reach.	262986	776431	4000 (8 m)
WVH14	This burn along the cycle track acts as a ditch and the still water is suitable for WV. 12 latrines, 4 burrows, and 1 cache were recorded with above-ground nests likely in the grass and heather. Photo IDs: 7_WVH14_36 and 7_WVH14_9	262963	776498	4050 (9 m)
WVH15	The burn reach widens to 1 m and enters a sedge wetland. 18 latrines and many runs were noted. Burrows were few (4) generally at the south end, with one in the middle of the reach. Photo IDs: 7_WVH15_19 and 7_WVH15_21	262873	776540	4100 (73 m)
WVH16	This bend in the burn was dominated by tussocky <i>Molinia</i> , making it difficult to survey. 7 latrines and 3 burrows were recorded, with above ground nests likely.	262827	776639	4200 (87 m)
WVH17	This reach of the burn was very grassy, suitable for nests, runs and burrowing. 30 latrines and 12 burrows were recorded. Photo ID: 7_WVH17_16	262800	776681	4250 (92 m)
WVH18	This reach of the burn is ideal for WV with several runs, 16 latrines and 18 burrows found (some with lawns). Above ground nests are likely.	262771	776758	4400 (97 m)
WVH19	This reach of the larger burn was more suitable for WV with 10 latrines and many runs noted. 3 burrows were recorded at the southern end and above	262743	776877	4500

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
	ground nesting is likely. Photo ID: 7_WVH19_14			(75 m)
WVH20	This reach of the larger burn has more suitability for WV than adjacent but there is little bank structure and the vegetation is scrubby and heathery. 11 latrines, 5 burrows, and 1 cache were recorded. Photo ID: 7_WVH20_13	262741	776936	4600 (40 m)
WVH21	A narrow burn leading into the larger burn, with undercut banks and the channel hidden in places. Numerous runs, 6 latrines, 5 burrows, and some possible above ground nests were recorded. Photo ID: 7_WVH21_10	262766	777000	4550 (2 m)
WVH22	This reach of the large burn was generally poor for WV with dense heather and rocky banks noted. Few isolated latrines were recorded, and only 3 isolated burrows were recorded. No other signs of activity.	262694	777121	4700 (19 m)
WVH23	Moderate-sized burn with 5 burrows and many runs noted in the vegetation. No latrines were found. Photo ID: 7_WVH23_12	262635	777235	4850 (18 m)
WVH24	A very small burn with a channel only 10 cm wide flowing through dense vegetation. 9 latrines, 2 burrows and several runs into the heather were noted. Photo ID: 7_WVH24_32	262602	777235	4900 (52 m)
WVH25	Medium-sized burn near the A9 which is suitable for WV in slower flow areas, but no evidence found. Possible WV mitigation site.	262508	777681	5250 (30 m)
WVH26	This small burn (through grazed pasture) is suitable for WV but few definitive signs were found (WV4) along most of it. There were several small	262316	778237	5950

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
	mammal burrows, but no WV droppings. Grazing in upper reach reduces runs in the vegetation.			(130 m)
WVH27	Slower sections of River Truim, generally at the wide bends, were more suitable for WV and noted to have with numerous holes (some larger), but no WV droppings were found.	262597	778724	6250 (20 m)
WVH28	The south-eastern end of this burn became a narrow channel flowing through bog myrtle and so was suboptimal habitat due to fewer suitable foraging plants. A large hole was noted and very old droppings were nearby, but recent activity is unlikely. Photo ID: 7_WVH28_34	262892	779477	7150 (15 m)
WVH29	The north-western end of this small burn is used by WV with 8 latrines, 8 burrows and several runs noted.	262858	779545	7150 (92 m)
WVH30	WV activity along a small burn within a grazed wet pasture (brown bent, soft rush), 15 latrines and 20 burrows (in discrete patches) were found, along with numerous runs.	262894	779685	7350 (62 m)
<i>Red Squirrel Records</i>				
RS1	Pine cones which appeared to be stripped and eaten by squirrel, with eaten and discarded seed scales next to them. No report of red squirrels by resident gamekeepers at Drumochter Lodge. No dreys found. Photo ID: 7_RS1_2	263036	779495	7200 (61 m)
<i>Bat Roost Potential Records</i>				
BA1	Mature coniferous plantation woodland with most trees being hale. Though most trees are intact now, the age and size mean that subsequent storm damage could result in roosting potential. BRP 3	264653	773050	100 (104 m)

Target Note ID	Description	Easting	Northing	Chainage (distance in metres)
BA2	Mature trees around the lodge and gamekeepers house are generally tended and felled when severely damaged, though storm damage could create individual cracks at broken branches. Reassess if felling. BRP 3	263058	779532	7450 (22 m)
BT1	A very old house in an extremely derelict state, with overgrown ruderals and fallen tree blocking it in. It is situated above the bank of the Allt Coire Mhic-sith, between the access road and railway line. BRP 1 Photo ID: 7_BT1_16	264527	773248	400 (65 m)
BT2	Very large arch culvert with track built in at Dalnaspidal over the Allt Coire Mhic-sith. The construction is similar to other larger culvert with spine & rib expansion joints. A ledge which runs along the access track had several bat droppings along it. BRP 1/2 Photo IDs: 7_BT2_17 and 7_BT2_18	264594	773314	400 (7 m)
BT3	A box/arch culvert with each end varying in age and construction. There are several crevices within the culvert and on headwall face. As a structure could be BRP 1/2, but location and open habitat could reduce BRP. Photo IDs: 7_BT3_1 and 7_BT3_2	263754	774093	1500 (98 m)
BT4	Several dry pipes exiting from culvert headwall under the cycle path, c. 6-7 cm diameter and too deep to see the end. Very exposed location. BRP 3 Photo ID: 7_BT4_3	263566	774590	2050 (52 m)
BT5	Very large arch culvert over the Allt a' Chaorainn. A spine & rib formation for expansion gaps allowing up to 15 cm deep gaps. The spine gaps appear to be deeper especially where the ribs meet the spine. Some potential for hibernation if not so exposed. BRP 1/2 Photo IDs: 7_BT5_5 and 7_BT5_7	263247	775509	3000 (9 m)
BT6	Drumochter Lodge is a large house with a multi-pitched roof. It is currently divided into apartments and used by the estate's gamekeepers and GWCT as a field training centre. Several gaps were noted around the roof tiles and lead flashing. BRP 1 Photo IDs: 7_BT6_10 and 7_BT6_13	263085	779617	7350 (56 m)

Appendix 2 – Photographs



Photograph A2-1: Otter - 7_O1_9



Photograph A2-2: Otter - 7_O2_11



Photograph A2-3: Otter - 7_O6_4



Photograph A2-4: Water vole - 7_WV4_1



Photograph A2-5: Water vole - 7_WV4_2



Photograph A2-6: Water vole - 7_WV5_6



Photograph A2-7: Water vole - 7_WVH10_6



Photograph A2-8: Water vole - 7_WVH14_36



Photograph A2-9: Water vole - 7_WVH14_9



Photograph A2-10: Water vole - 7_WVH15_19



Photograph A2-11: Water vole - 7_WVH15_21



Photograph A2-12: Water vole - 7_WVH17_16



Photograph A2-13: Water vole - 7_WVH19_14



Photograph A2-14: Water vole - 7_WVH20_13



Photograph A2-15: Water vole - 7_WVH21_10



Photograph A2-16: Water vole - 7_WVH23_12



Photograph A2-17: Water vole - 7_WVH24_32



Photograph A2-18: Water vole - 7_WVH28_34



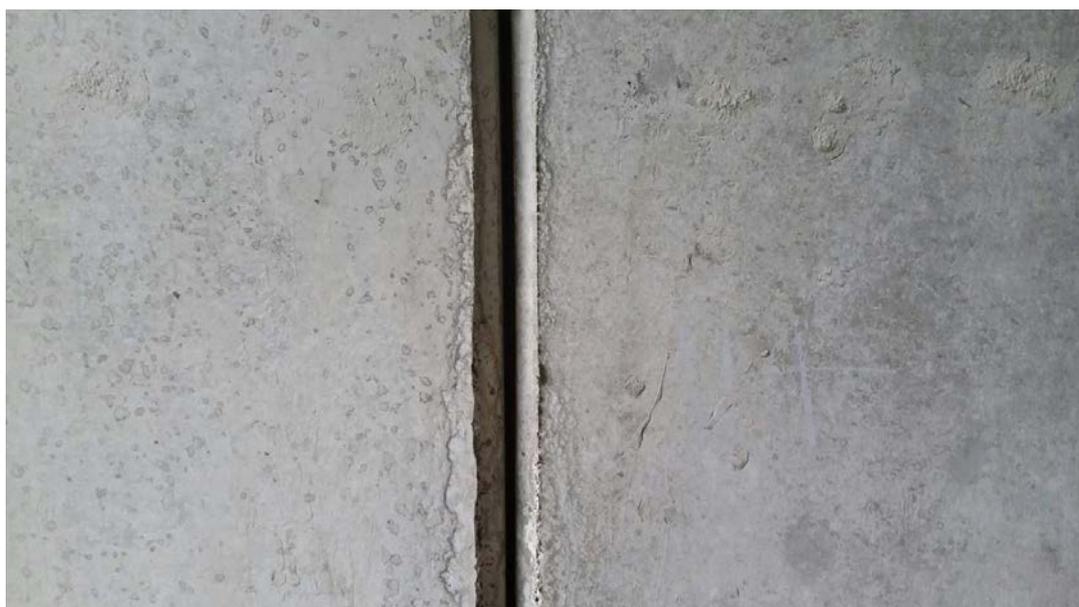
Photograph A2-19: Water vole - 7_WVH6_33



Photograph A2-20: Red Squirrel - 7_RS1_2



Photograph A2-21: Bats - 7_BT1_16



Photograph A2-22: Bats - 7_BT2_17



Photograph A2-23: Bats - 7_BT2_18



Photograph A2-24: Bats - 7_BT3_1



Photograph A2-25: Bats - 7_BT3_2



Photograph A2-26: Bats - 7_BT4_3



Photograph A2-27: Bats - 7_BT5_5



Photograph A2-28: Bats - 7_BT5_7



Photograph A2-29: Bats - 7_BT6_10



Photograph A2-30: Bats - 7_BT6_13

Appendix 3 – Desk Study Results

Table A3-1: Project 7 Desk Study Summary Table

Map Code	Species	Comment	Section	Closest Chainage (Distance in m)	National Grid Reference	Date
BT1	Bat	Bridge/ culvert with bat roost potential	2	3000 (33)	263218 775490	2014
BT2	Bat	Drumochter Lodge assessed as having bat roost potential	4	7350 (66)	263082 779642	2014
O1	Otter	Spraint	1	200 (6)	264733 773170	2014
O2	Otter	Spraint	1	200 (11)	264742 773185	2014
O3	Otter	Couch located on right hand bank 10 m downstream of culvert with dried spraint	1	400 (27)	264572 773273	May 2009
O4	Otter		1	400 (27)	264572 773273	
O5	Otter	Spraint	2	3000 (51)	263200 775500	2014
O6	Otter	Spraint	2	3000 (13)	263251 775507	2014
O7	Otter	Holt with fresh spraint found on left hand bank, 20 m downstream of the culvert	2	3000 (52)	263212 775460	May 2009
O8	Otter	Fresh spraint under culvert	2	3000 (26)	263267 775514	May 2009

Map Code	Species	Comment	Section	Closest Chainage (Distance in m)	National Grid Reference	Date
O9	Otter	Couch and dried spraint on right hand bank 10 m up stream of culvert in area of failed bank protection	2	3000 (51)	263289 775528	May 2009
O10	Otter	Potential couch on the left hand bank 13 m upstream of culvert in an area of failed bank protection. No spraint found	2	3000 (49)	263288 775526	May 2009
O11	Otter		2	3000 (52)	263212 775460	
O12	Otter		2	3000 (26)	263267 775514	
O13	Otter		2	3000 (51)	263289 775528	
O14	Otter		2	3000 (49)	263288 775526	
O15	Otter	Spraint	4	7200 (19)	262975 779520	2014
O16	Otter	Spraint	4	3000 (51)	263000 779500	2014
O17	Otter	Spraint	4	8400 (8)	263334 780651	2014
O18	Otter	Spraint	4	8400 (44)	263302 780680	2014
O19	Otter	Spraint	Tie-in	9300 (1)	263763 781432	2014

