

Appendix 12.8

Reptiles

Transport Scotland

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1. Introduction

- 1.1.1. This technical appendix presents the methodologies employed to assess habitat suitability for reptiles to inform the Design Manual for Roads and Bridges (DMRB) Stage 3 Assessment for the Proposed Scheme. The appendix also details the nature conservation valuation and impact assessment in relation to reptiles.
- 1.1.2. The identification of suitable habitat for reptiles included land within the boundary of the Proposed Scheme and up to 200m beyond the Proposed Scheme or up to 100m from access tracks/SUDS (hereafter the 'Study Area'). Whilst direct impacts such as habitat loss and harm to reptiles will likely be restricted to areas within the footprint of the Proposed Scheme, the wider area was included within the assessment to take account of connectivity of surrounding suitable reptile habitats with the Proposed Scheme.

2. Methodology

2.1. Data Collection and Habitat Suitability Assessment

- 2.1.1. The habitat suitability assessment for reptiles was completed through three desk based exercises: data collection from various organisations, an interpretation of habitat information from botanical surveys using available guidance on suitable common reptile habitat and incidental records of reptiles and features with potential to support reptiles collected during other ecological surveys undertaken for the Stage 3 Assessment. The Highland Biodiversity Action Plan (2015)ⁱ and Cairngorms Nature Action Plan (2013)ⁱⁱ were also consulted to identify any particular reptile species of local concern.
- 2.1.2. The following organisations were contacted for reptile records within 1km of the existing A9. Only records within the last 10 years, i.e. those since 2007 have been considered within the assessment:
- Highland Biological Recording Group (HBRG);
 - North East Scotland Biological Records Centre (NESBReC); and,
 - Scotland Transerv.
- 2.1.3. The presence and distribution of habitat within the Study Area suitable to support reptiles was determined through a review of relevant guidance on suitable common reptile habitat, including:
- Joint Nature Conservation Council's (JNCC) Herpetofauna Workers Manual (2003)ⁱⁱⁱ;
 - Design Manual for Roads and Bridges (DMRB) nature conservation advice in relation to reptiles and road (2005)^{iv};
 - Scottish Natural Heritage (SNH) advice pertinent to reptiles in Scotland^v; and,
 - Froglife's (1999)^{vi} Advice Sheet 10: Reptile Survey.
- 2.1.4. Detailed habitat data collected as part of the National Vegetation Classification (NVC) surveys completed in 2017, which covered the Proposed Scheme and a buffer of 250m, were used to identify the equivalent Phase 1 habitat types (following JNCC (2010)^{vii} methodology) within the Study Area (200m beyond the Proposed Scheme or 100m from access tracks/SUDS). The Phase 1 habitats were then reviewed against DMRB guidance^{iv} which classifies habitats according to their importance for reptiles. Specifically, the DMRB^{iv} provides information on the suitability of Phase 1 habitat types

for reptiles, classifying 'important' habitat, habitat of 'moderate importance' and 'unimportant' habitat for reptiles.

- 2.1.5. Table 2.1 below provides a breakdown of the relative importance of Phase 1 habitats for common lizard, slow worm and adder, taken directly from DMRB guidance^{iv} for which corresponding Phase 1 habitats were recorded within the Study Area. 'Important' habitats for reptiles are shown in dark grey, whilst habitats of 'moderate importance' for reptiles are shown in light grey.
- 2.1.6. DMRB^{iv} provides guidance on the importance of Phase 1 habitats for reptiles using a limited list of JNCC (2010)^{vii} Phase 1 habitat types, thus not all Phase 1 habitat types identified in the Study Area have corresponding importance values identified in the DMRB^{iv}. Furthermore, only the broad Phase 1 habitat categories are tabulated below, however, there can be variation in suitability within a broad Phase 1 habitat type (e.g. continuous bracken is likely to be less suitable than scattered bracken). Additionally, the broad Phase 1 boundaries category (J2) can be separated into dry stone walls considered of particular importance, but fence lines are likely to offer lower suitability. DMRB guidance^{iv} was therefore interpreted with professional judgement and tailored to the habitats identified within the Study Area during the assessment. This is reflected within the written justification of suitability of assessed areas (see Table 3.1).
- 2.1.7. Only reptile species likely to be encountered within the Study Area were included within the assessment: common lizard, slow worm and adder. This is based on the known distribution of UK reptile species.

Table 2.1: Phase 1 Habitats Recorded in the Study Area and Relative Importance for Reptiles

Broad Phase 1 Habitat Type	Common Lizard	Slow Worm	Adder
J2 Boundaries			
B1 Acid grassland			
B2 Neutral grassland			
B3 Calcareous grassland			
B4 Improved grassland			
D1 Dry dwarf shrub heath			
D2 Wet dwarf shrub heath			
D5 Dry heath/acid grassland mosaic			
D6 Wet heath/acid grassland mosaic			
C1 Bracken			
E1 Bog			
E3 Fen			
B5 Marshy grassland			
F1 Swamp			
G2 Running water			
G1 Standing water			
A1.1 Broadleaved woodland			
A1.3 Mixed woodland			
A1.2 Coniferous woodland			

Broad Phase 1 Habitat Type	Common Lizard	Slow Worm	Adder
A2 Scrub			
J1 Arable land			
I Rock exposure and waste			
J1.2 Amenity grassland			
J3 Built up areas			
J1.4 Introduced shrub			
Key:			
'Important' habitat for reptiles			
Habitat of 'moderate importance' for reptiles			
'Unimportant' habitat for reptiles			

2.1.8. Within the Study Area, habitats have been grouped where they are geographically close and are of a similar suitability for reptiles. This process identified 20 distinct areas of reptile suitability within the Study Area (Figure 12.17). The above information was then reviewed against topography and site-specific data relevant to reptile suitability, for example, data collected during the pine marten surveys that included presence of rocky outcrops and mosaic habitats. In addition to this, desk study data and incidental reptile records obtained during ecological surveys undertaken from 2015 to 2017 were taken into consideration.

2.1.9. A habitat suitability value for reptiles (high, moderate, low, or unsuitable) was then determined for the 20 areas using criteria presented in Table 2.2. This set of criteria was developed using professional judgement, based on the collective results from the above described methodologies of data collection and DMRB guidance^{iv}. The habitat suitability values assigned are displayed on Figure 12.17, with habitats of high suitability shown in red, moderate suitability shown in orange and low suitability displayed in green. Areas considered unsuitable for reptiles have not been mapped.

Table 2.2: Criteria for Assessing Habitat Suitability Value

Habitat Suitability Value	Criteria
High	Areas comprised predominantly of 'important' habitat for reptiles following DMRB guidance ^{iv} and that contain suitable topography (e.g. unshaded areas, slopes with southern aspects likely to receive sunlight suitable for basking) and/or features (such as hibernacula, basking/shelter mosaics, etc.) as shown in the site-specific data. These are generally large areas of habitat with good connectivity, and which support a mosaic of micro-habitats and features suitable for basking, foraging, sheltering, and hibernation by reptiles.
Moderate	Areas comprised predominantly of 'important' habitat following DMRB guidance ^{iv} , but which are generally less suitable when considering topography and site-specific data, when compared to high suitability areas. Areas of 'moderate importance' following DMRB guidance ^{iv} are also included in this category if the topography and site-specific data show suitable features are present, including good connectivity. The habitats within these areas either exhibit greater homogeneity within the habitat type (less of a mosaic structure), or smaller areas of suitable habitat, and therefore offer less opportunity for basking, foraging, and shelter.
Low	Areas comprised predominantly of habitats of 'moderate importance' for reptiles following DMRB guidance ^{iv} and exhibit less suitable site-specific

Habitat Suitability Value	Criteria
	features when compared to areas of moderate suitability, including topography. This category also includes 'important habitat' following DMRB ^{iv} but has been assessed as offering limited or no basking, foraging, and sheltering potential (generally due to its homogeneity/lack of mosaic features), for example extensive areas of woodland habitat.
Unsuitable	Areas considered 'unimportant' for reptiles following DMRB guidance ^{iv} .

2.2. Limitations

- 2.2.1. No specific presence/likely absence reptile surveys were undertaken at Stage 3. This approach is considered sufficient for the DMRB Stage 3 Assessment and has been agreed with SNH, detailed in Annex A.
- 2.2.2. The Proposed Scheme has undergone several (increasingly minor) design iterations alongside the development of the assessment. The latest design iteration resulted in an extension of the original Study Area for some features, typically in the order of a few metres. Whilst this does not limit the reptile suitability habitat assessment directly (a desk-based assessment), it is noted because the Phase 1 habitat survey mapping on which the reptile suitability assessment is based upon was subject to such minor extrapolations. Additionally, small areas not able to be classified as Phase 1 habitat types nor extrapolated using aerial imagery are not included in the reptile suitability assessment and are mapped as 'unclassified'. As a high-level suitability assessment, this does not limit the overall findings or impact assessment.

3. Impact Assessment Methodology

3.1. Introduction

- 3.1.1. Ecological features have been subject to nature conservation evaluation. Impact significance has then been assessed taking into account the nature and magnitude of potential impacts (including duration, extent and reversibility) and their consequent effects on important ecological features. The approach to nature conservation evaluation and impact assessment was agreed across the wider A9 Dualling Programme.

3.2. Nature Conservation Evaluation

- 3.2.1. The general approach to defining the importance of ecological features follows that of CIEEM^{viii}. The approach is also in line with advice given in DMRB Interim Advice Note 130/10 'Ecology and Nature Conservation: Criteria for Impact Assessment'^{iv}.
- 3.2.2. Ecosystems, habitats and species within the Ecological Zone of Influence (EZO¹) are assigned levels of importance for nature conservation based on the criteria set out in Table 3.1.
- 3.2.3. 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.

¹ EZol is an area defined by the assessment in which there may be ecological features subject to impacts and subsequent effects as a result of the Scheme.

Table 3.1: 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.
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)^{ix}.
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 (LNR)) 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 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). <p>Species Species whose presence contributes to:</p>

Importance	Criteria
	<ul style="list-style-type: none"> the maintenance and restoration of biodiversity and ecosystems at a local level.
Less than Local	<p>Ecosystems and Habitats</p> <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. <p>Species</p> <ul style="list-style-type: none"> Features that are considered to be absent or do not meet any of the above criteria.

3.3. Impact Assessment

3.3.1. For the purposes of this assessment, the impact descriptors in Table 3.2 below are taken to summarise the overall characterisation of positive or negative impacts in accordance with CIEEM (2016)^{viii}, including:

- impact extent/scale (e.g. entire habitat loss, partial habitat loss or indication over specific area affected);
- direct or indirect impact (e.g. direct mortality of individuals from vehicle collisions, or indirect mortality of individuals from reduced prey resources due to pollution of watercourses);
- reversibility of impact (reversible or irreversible);
- frequency of impact (single event, recurring or constant);
- duration of impact (short-term, medium-term, long-term or permanent); and
- likelihood of occurrence (certain/near certain, probable, unlikely or extremely unlikely).

3.3.2. The character of impacts was defined using the criteria set out in Table 3.2 below as High, Medium, Low or Negligible, following the above impact characterisation approach.

Table 3.2: Impact Magnitude and Character for Ecological Features

Impact Descriptor	Impact Characterisation
High	An impact resulting in a permanent effect on the distribution and/or abundance of a habitat, species assemblage/community or population, in such a way as to alter the integrity of the feature and its conservation status. If negative, this type of effect would reduce the integrity of the feature and its conservation status. If positive, it would result in an improvement to the conservation status of the feature.
Medium	An impact resulting in a long-term but reversible effect on the distribution and/or abundance of a habitat, species assemblage/community or population. If negative, this type of effect would have neutral long-term implications for the integrity of the feature or its conservation status. If positive, it would not alter the long-term conservation status of the feature.
Low	An impact resulting in a short-term reversible effect on the distribution and/or abundance of a habitat, species assemblage/community or population.
Negligible	No discernible impact on the distribution and/or abundance of a habitat, species assemblage/community or population.

Impact Significance

- 3.3.3. Each feature's importance and the potential impacts upon it have been determined through surveys and consultation, to provide a robust basis for making a professional decision on the appropriate focus of the impact assessment. The assessment is then focused on those impacts that result in potentially significant effects on important ecological features. For example, an area of amenity grassland would not meet the criteria for local ecological importance and would not progress through the assessment process, as the assessment only includes features of local importance or above. However, any impact on a Site of Special Scientific Interest (SSSI) would progress through the assessment process as these sites are designated as nationally important. Habitats, species and species groups that are considered to have a nature conservation value of less than local are not considered important ecological features² in the context of this assessment. Any impact on such a feature as a result of the Proposed Scheme is considered unlikely to have a significant effect on the conservation status of such habitats or species on a local, regional, national or international scale. Therefore, features assessed to be of less than local nature conservation value have been scoped out of the ecological impact assessment (EclA).
- 3.3.4. CIEEM (2016)^{viii} notes that impacts that are likely to be relevant in an assessment are those that are predicted to lead to significant effects (negative or positive) on important ecological features. Significant effects are those that undermine the conservation status³ of important ecological features. Knowledge and assessment of construction methods and operational activities, together with the ecological knowledge of ecologists with experience of similar large-scale infrastructure projects, has been used to identify the potential impacts of the project on ecological features.
- 3.3.5. Following the above approach, the assessment aims to characterise ecological impacts rather than placing a reliance only on magnitude. The character of an impact is used to inform the determination of whether or not the impact on the feature in question is a significant one.
- 3.3.6. Where impacts on internationally, nationally or regionally important ecological features are characterised as 'Medium' or 'High', they are considered to be potentially significant under the terms of the Environmental Impact Assessment (EIA) Regulations^x.
- 3.3.7. Impacts characterised as 'Low' on internationally important features, can be determined as potentially significant as can impacts characterised as 'High' on features of Authority Area importance. There may in addition be a number of impacts on a feature that, whilst not of a character to be significant in themselves, may cumulatively result in a significant effect on that feature.
- 3.3.8. Where significant impacts are identified, mitigation will be developed to reduce impacts where feasible and are taken into account in the assessment of residual effects.

3.4. Mitigation

- 3.4.1. The principles of the mitigation hierarchy^{xi} have been applied when considering potential impacts and subsequent effects on ecological receptors within the EZoI. The principles

² An ecological feature is considered important based on many factors including its rarity, diversity, naturalness, context in the wider landscape, size and distribution as set out in A Nature Conservation Review (Ratcliffe, 1977).

³ Conservation status for habitats is determined by the sum of the influences acting on the habitat and its typical species that may affect its long-term distribution, structure and function as well as the long-term distribution and abundance of its population within a given geographical area. Conservation status for species is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its population within a given geographical area.

of the mitigation hierarchy are that impacts on biodiversity should be subject to the following sequential mitigation actions:

- avoidance;
- mitigation;
- compensation; and
- enhancement.

- 3.4.2. For the purpose of this assessment, mitigation refers to measures that are considered essential to avoid and reduce negative impacts of the Proposed Scheme. Compensation refers to measures taken to make up for the loss of, or permanent damage to, biological resources through the provision of replacement areas. Unless otherwise stated, all compensatory measures are considered to be part of the essential mitigation package.
- 3.4.3. The mitigation measures described within this EclA have been incorporated into the design and construction programme and taken into account in the assessment of residual effects. The mitigation aims to avoid or negate impacts on ecological features in accordance with best practice guidance and UK, Scottish and local government environmental impact, planning and sustainability policies. These mitigation measures include those required to achieve the minimum standard of established good practice together with additional measures to further reduce any negative impacts of the Scheme. The mitigation measures include those required to reduce or avoid the risk of committing legal offences.
- 3.4.4. Mitigation is also designed to produce a net gain for biodiversity where practicable, in line with policy and guidelines^{viii}.
- 3.4.5. Mitigation measures set out in this Environmental Statement (ES) will be specified as environmental commitments in the contract documents to ensure implementation by the appointed Contractor.
- 3.4.6. Impacts that are not significant (including those where compliance with regulation is required) would be expected to be avoided or reduced through the application of a Construction Environmental Management Plan (CEMP) and best working practice (e.g. mitigation of potential pollution impacts through adherence to standard best practice and guidelines). Significant ecological impacts are expected to be mitigated through a combination of best practice and typical, proven mitigation methods along with mitigation targeted to specific locations as described in the assessment.

4. Results

4.1. Data Collection Exercise

- 4.1.1. The data collection exercise with HBRG, NESBReC and Scotland TranServ returned 12 records of reptiles dating from 2007 to present.
- 4.1.2. A further 19 records of reptiles were obtained incidentally during wider ecological surveys undertaken between 2015 and 2017 within the Study Area. Additionally, common lizard and slow worm were recorded during the Preliminary Ecological Appraisal (CH2M, 2015)^{xii}.
- 4.1.3. All records of reptiles collated during the desk study are provided in Table 4.1 below, and presented on Figure 12.17.

Table 4.1: Records of Reptiles Returned within the Study Area

X Ref.	Y Ref.	Date	Distance from Proposed Scheme + 5m buffer (m)	Species	Detail/Location	Source
289000	812000	2005	83	Adder	Glenmore	NESBReC
291000	817000	17/04/2008	220	Slow worm	Loch Vaa	NESBReC
289200	814700	20/07/2008	402	Slow worm	One adult at West Miltonwood	NESBReC
288100	810700	26/06/2009	70	Slow worm	Two adults at Lynwilg Quarry Dump	NESBReC
288600	812800	29/03/2010	455	Common lizard	Craigellachie Nature Reserve	NESBReC
288200	824400	14/05/2010	245	Common lizard	East Foregin	NESBReC
288200	824400	14/05/2010	245	Common lizard	Dead on road at East Foregin	Scotland TranServ
288800	812500	02/05/2012	233	Common lizard	Craigellachie NNR	HBRG
288100	812400	02/05/2012	906	Common lizard	Dead on road at Craigellachie NNR	Scotland TranServ
288500	810700	19/04/2014	0	Common lizard	Dead on road at Lynwilg	Scotland TranServ
289100	812000	03/05/2014	3	Common lizard	Observed crossing B9153 at Loch Puladdern	HBRG
285800	809500	16/06/2014	27	Common lizard	Allt Chriochaidh	HBRG
285125	824009	08/09/2015	0	Common lizard	Slochd	Incidental survey record
284706	823926	09/09/2015	28	Common lizard	Slochd	Incidental survey record
283633	825494	09/09/2015	0	Common lizard	Slochd, by existing A9	Incidental survey record
288975	811123	23/09/2015	0	Slow worm	Adjacent to boundary fence at the top of rock cut west of the A9	Incidental survey record
290082	815665	15/03/2017	0	Slow worm	On verge, around 1.5m from carriageway	Incidental survey record
284058	825115	11/04/2017	0	Common lizard	In grassland adjacent to watercourse	Incidental survey record

X Ref.	Y Ref.	Date	Distance from Proposed Scheme + 5m buffer (m)	Species	Detail/Location	Source
290879	817183	18/04/2017	21	Slow worm	On road verge	Incidental survey record
290400	815798	27/04/2017	132	Common lizard	By A95, south of Avielochan	Incidental survey record
288988	813416	04/05/2017	178	Common lizard	In woodland clearing	Incidental survey record
288976	813414	04/05/2017	188	Common lizard	In woodland clearing	Incidental survey record
290690	820853	10/05/2017	0	Common lizard	At side of ditch next to A9	Incidental survey record
290490	816990	15/05/2017	0	Slow worm	Dead on track	Incidental survey record
287790	809940	15/05/2017	0	Slow worm	Dead on roadside	Incidental survey record
288537	810731	24/05/2017	0	Common lizard	Basking at edge of path within woodland block	Incidental survey record
288346	810511	24/05/2017	32	Common lizard	On track, west of woodland	Incidental survey record
288356	810499	24/05/2017	47	Common lizard	On track west of woodland block	Incidental survey record
290939	817840	23/06/2017	0	Slow worm	On mown grass on verge	Incidental survey record
282698	826269	05/07/2017	36	Common lizard	On mown grass A9 verge	Incidental survey record
282558	826377	05/07/2017	196	Common lizard	By existing A9, northwest of Slochd	Incidental survey record

- 4.1.4. Records obtained from various data sources confirmed that the species likely to be encountered within the Study Area comprise common lizard, slow worm and adder, which reflects the known UK distribution of reptiles. Common lizards were most frequently encountered (n = 21), slow worms were recorded occasionally (n = 9) and a single adder was sighted (n = 1).
- 4.1.5. Common lizard, slow worm and adder were identified on the list of priority species in the Highland Biodiversity Action Plan. The Cairngorms Nature Action Plan (2013-2018) describes all three species as regularly using suitable features within this area, but these species are not included on their lists of priority species or species of medium or low importance.

4.2. Habitat Suitability Assessment

- 4.2.1. The habitat suitability of each Habitat Suitability Area (HSA) is detailed within Table 4.2 and displayed on Figure 12.17. Habitat suitability areas have been assigned a number, e.g. HSA1, which are displayed on the figure.
- 4.2.2. The habitat suitability assessment identified eight areas of high suitability to support reptiles. Three of these areas were present around Slochd in the far north of the Study Area, where a large extent of heath and bog habitats is present with connected foraging and basking opportunities as well as shelter within dwarf shrubs (HSA 17, 18 and 20). Additionally, six incidental records for common lizards were recorded here. Other areas of high suitability include two locations near Dalmally in the south of the Study Area (HSA 1 and 3), comprising mosaics of grassland and heath habitats with bracken, scrub and woodland, with a single sighting of common lizard. Three locations slightly north of Dalmally offer a similar mosaic of habitats (HSA 5, 6 and 7), with multiple incidental records of common lizards, slow worms and adder.
- 4.2.3. Five areas of moderate suitability were recorded within the Study Area, localised to the central part (HSA 9, 11, 12, 13 and 14). These areas included large extents of woodland interspersed with heath and grassland habitats of 'moderate importance'.
- 4.2.4. The assessment identified seven areas with low suitability to support reptiles, these are scattered throughout the Study Area (HSA 2, 4, 8, 10, 15, 16 and 19). These areas were restricted to large, homogenous extents of coniferous plantation and built-up areas. No desk study records were received for areas of moderate and low suitability; however, a small number of reptiles were incidentally recorded here during the Stage 3 ecology surveys. Reptiles incidentally recorded within HSAs of moderate and low suitability were identified within pockets of 'important' habitat or at edge habitat bordered by more suitable areas. A single common lizard was noted within a patch of heath in HSA 12 (moderate), a common lizard was sighted in the far south of HSA 10 (low) within a pocket of heath adjacent to moderate HSAs, and a slow worm was recorded within HSA 4 (low) at the edge of broadleaved woodland bordering HSA 8 (high).

Table 4.2: Habitat Suitability Assessment Results

Habitat Suitability Area (HSA)	Habitat Suitability Value	Justification
1	High	Predominantly comprises 'important' habitats for reptiles (acid grassland and bracken), with small pockets of woodland. Area offers diverse functionality for reptiles, including foraging, sheltering and potentially basking opportunities.

Habitat Suitability Area (HSA)	Habitat Suitability Value	Justification
2	Low	Large extent of 'moderately important' plantation woodland; whilst edges may offer shelter and hibernation opportunities for reptiles, the majority is likely to be shaded and homogenous. Open, improved grassland areas with no sheltering or foraging habitat also included here.
3	High	Area comprises 'important' habitats for reptiles (dry heath, bracken, scrub, grassland) and habitats of 'moderate importance' (woodland), with varied structure and mosaic composition offering suitable foraging, sheltering and basking opportunities for reptiles. Habitats show good connectivity over a large extent. Incidental record of common lizard recorded here.
4	Low	Large extent of improved habitats and stands of woodland, with limited 'important' habitats for reptiles. Some connectivity between stands of woodland and potentially along field margins, however structure of habitats generally homogenous.
5	High	Area comprises varying habitat structure, with 'important' habitats for reptiles (grassland, dry heath) and habitats of 'moderate importance' (woodland, marshy grassland, flush). Incidental records of common lizard and slow worm recorded here. Good connectivity observed between habitats of most suitability to support reptiles, with opportunities for foraging, shelter, hibernation and basking available.
6	High	Diverse, mosaic habitat structure highly suitable for reptiles, with 'important' habitats for reptiles (grassland, bracken, dry heath, scrub) and habitats of 'moderate importance' (marshy grassland, woodland). Incidental records of common lizard recorded here. Good connectivity observed between habitats of most suitability to support reptiles, with opportunities for foraging, shelter, hibernation and basking available.
7	High	Large extent of broadleaved woodland 'important' for slow worm and of 'moderate importance' for common lizard and adder, interspersed with 'important' habitats for reptiles including bracken and dry heath. The woodland here is relatively open, dominated by birch, with the canopy allowing dappled light through and the fringe habitat and pockets of bracken and heath offering good reptile habitat. Incidental records of common lizard, slow worm and adder noted within fringe of woodland and areas of bracken. A further two records of common lizards noted outwith the Study Area, but within 0.2km west. The area contains abundant areas suitable for hibernation, with craggy rocky areas, particularly west of Loch Puladdern on the northbound side and boulders scattered throughout Craigellachie National Nature Reserve.
8	Low	Predominantly built-up area, with limited 'important' habitats for reptiles. Some pockets of habitats of 'moderate importance', however connectivity between such habitats restricted due to fragmented structure within built-up/residential area.
9	Moderate	Area predominantly comprises habitats of 'moderate importance' (woodland, rock exposure) with 'important' habitats including grassland. Opportunities for foraging and shelter, as well as basking potential. Incidental record of slow worm outwith but adjacent to this location, c. 0.1km west of the Study Area along the Allt na Criche watercourse. Other incidental

Habitat Suitability Area (HSA)	Habitat Suitability Value	Justification
		sightings of reptiles identified on the northern edge of this location; individual common lizard and slow worm recorded at the edge of broadleaved woodland.
10	Low	Large extent of coniferous plantation of 'moderate importance' but likely to offer limited suitability to reptiles due to shading. Small pockets of bracken and dry heath, however fragmented with limited connectivity. Woodland edges may provide hibernation opportunities.
11	Moderate	Area predominantly comprises habitats of 'moderate importance' including large extent of broadleaved woodland, with smaller areas of 'important' habitat including grassland. Moderately varied structure of habitats, with grassland offering connectivity to different resources.
12	Moderate	Large extent of coniferous plantation of 'moderate importance' but central section likely to offer limited suitability to reptiles due to shading. Small pockets of heath, however fragmented with limited connectivity. Woodland edges may provide shelter, with incidental record of common lizard recorded at edge of plantation within grassland.
13	Moderate	Area comprises bog and heath, providing 'important' habitat for reptiles. However, surrounded entirely by plantation woodland thus limited connectivity.
14	Moderate	Area of varied habitats, including 'important' dry heath and grassland habitats, with habitats of 'moderate importance' including broadleaved woodland and built-up areas. Opportunities for foraging and basking reptiles, as well as shelter.
15	Low	Large extent of coniferous plantation of 'moderate importance' but likely to offer limited suitability to reptiles due to shading.
16	Low	Large extent of coniferous plantation of 'moderate importance' but central section likely to offer limited suitability to reptiles due to shading. Small pockets of heath present within plantation rides, however fragmented with limited connectivity.
17	High	Mosaic of suitable habitats for reptiles, including 'important' grassland habitat, bog and heath interspersed with habitats of 'moderate importance' including woodland. Good connectivity between habitats of most importance, and area generally offers opportunities for foraging, sheltering and basking. Incidental record of common lizard outwith but adjacent to this location, c. 0.1km east.
18	High	Area predominantly comprises 'important' habitats, including large extents of bog, dry heath and wet heath. Area offers suitable foraging and basking habitat for reptiles, as well as shelter amongst dwarf shrubs.
19	Low	Large extent of coniferous plantation of 'moderate importance' but central section likely to offer limited suitability to reptiles due to shading. Small pockets of heath present within plantation rides, however fragmented with limited connectivity.
20	High	Large area predominantly comprises 'important' habitats for reptiles, including dry heath, bog, scrub and grassland. Dry heath tends to dominate areas, however forms a mosaic with other suitable habitats to offer varied structure. Habitats of

Habitat Suitability Area (HSA)	Habitat Suitability Value	Justification
		'moderate importance' including woodland also present. Four incidental records of common lizard recorded here, and an additional common lizard was sighted c. 0.2km north of the Study Area. Area offers large extent of suitable habitats with connectivity and opportunities for foraging, sheltering and basking reptiles.

5. Nature Conservation Evaluation

5.1.1. The Study Area was valued with respect to reptiles based on the suitability of habitats present, data collated from record centres and other ecological surveys undertaken as part of the assessment. The local priority of this species group also informed the valuation. The value and rationale is set out in Table 5.1.

Table 5.1: Valuation of Reptile Habitat within the Study Area

Habitat Suitability Area	Valuation	Rationale for valuation
Areas of 'Low' suitability for reptiles within the Study Areas (HSA 2, 4, 8, 10, 15, 16 and 19)	Less than Local	These areas comprise large, homogenous extents of coniferous plantation and built-up areas and offer low suitability for reptiles. Central sections of woodland are unlikely to receive sufficient sunlight required by reptiles for basking. Built up areas are likely to be disturbed and show poor connectivity to foraging resources. The fringes of such areas offer some suitability for shelter and foraging, and as such may support local populations of reptiles, however overall these areas offer limited value to reptiles.
Areas of 'Moderate' suitability for reptiles within the Study Areas (HSA 9, 11, 12, 13 and 14)	Local	These areas comprise a diverse range of habitats of 'moderate importance', however limited incidental records of reptiles have been made in these areas and no desk study records were returned from these areas. These areas include woodland interspersed with heath and grassland habitats, creating suitable mosaic habitat for foraging, sheltering and basking reptiles. Suitable habitats also show connectivity to the wider area. Reptiles likely to be found here include common lizard, slow worm and adder. Given the extent of suitable and varied habitat for such species with connectivity to the wider area, these locations are assessed to be of value at a Local scale and are likely to support populations of reptiles that are important in a local context.
Areas of 'High' suitability for reptiles within the Study Areas (HSA 1, 3, 5, 6, 7, 17, 18 and 20)	Authority Area	These areas comprise both large extents of heath and bog habitats, and mosaics of grassland, heath, bracken and scrub. These areas offer suitable foraging, basking and sheltering opportunities for reptiles. Multiple common lizards and slow worms were incidentally recorded within areas of high suitability across the Study Area, and a single adder was observed. Locations of high suitability support a population of reptiles, with a known presence of common lizard, slow worm and adder. All three species are identified on the list of priority species in the Highland Biodiversity Action Plan.

Habitat Suitability Area	Valuation	Rationale for valuation
		Given the large extent of these areas and presence of species considered a priority within the Highlands, these areas were valued at the Authority area level.

6. Potential Impacts

6.1. Construction

- 6.1.1. During construction of the Proposed Scheme, reptiles could be affected by the following:
- direct habitat loss (e.g. loss of hibernacula, basking sites, or foraging habitat);
 - severance of suitable reptile habitat;
 - injury and direct mortality; and,
 - disturbance.

6.2. Operation

- 6.2.1. During operation of the Proposed Scheme, reptile habitat may become more fragmented, particularly within the vicinity of the junctions. There is also a risk of direct mortality of reptiles during Proposed Scheme operation.

7. Mitigation

- 7.1.1. A list of standard mitigation measures has been developed for all projects within the A9 Dualling Programme; those related to reptiles are detailed below in Table 7.1. Specific mitigation measures are presented in Figure 13.4 - Landscape and Ecological Mitigation plan.
- 7.1.2. A full list of ecological mitigation measures is provided in ES Chapter 12: Ecology and Nature Conservation. Measures of relevance to reptiles have been extracted and are detailed in Table 7.2. Some of these mitigation measures are relevant to a number of species; all species are referred to in the tables below for consistency between ES Chapter 12 and the other ES Appendices.

Table 7.1: A9 Standard Mitigation Commitments

Mitigation Item ⁴	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required
SMC-E1	Throughout proposed scheme	Pre-Construction	Pre-construction surveys will be undertaken to verify and, where required, update the baseline ecological conditions set out in the ES. The scope of the pre-construction surveys will be confirmed with SNH prior to them being undertaken.	To update the baseline ecological conditions set out in the ES.	SNH
SMC-E2	Throughout proposed scheme	Pre-Construction	<p>Prior to construction a suitably qualified (or team of suitably qualified) Ecological Clerk of Works (ECoW) will be appointed and will be responsible for implementation of the Ecological Management Plan. The ECoW will:</p> <ul style="list-style-type: none"> • provide ecological advice over the entire construction programme, at all times as required; • undertake or oversee pre-construction surveys for protected species in the areas affected by the proposed scheme; and ensure mitigation measures are implemented to avoid and reduce impacts on ecological features; and • monitor the implementation of the mitigation measures during the construction phase to ensure compliance with protected species legislation and commitments within the ES. <p>The ECoW will be a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and will have previous experience in similar ECoW roles. All ECoWs will be approved by Transport Scotland to be appropriately qualified for the role. The ECoW will be appointed in advance of the main construction programme commencing to ensure pre-construction surveys are undertaken and any advance mitigation measures required are implemented.</p>	To ensure the implementation of the Ecological Management Plan.	None required

⁴ Only items relevant to reptiles are listed

Mitigation Item ⁴	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required
SMC-E8	Throughout proposed scheme	Pre-Construction & Construction	Any tree felling will be carried out by experienced contractors to reduce direct mortality of protected species according to agreed felling methods between contractors and the ECoW.	To protect fauna during removal of habitat.	None required
SMC-E9	Throughout proposed scheme	Pre-Construction, Construction & Post-Construction	Plant and personnel will be constrained to a prescribed working corridor through the use of, where practicable, temporary barriers to minimise the damage to habitats and potential direct mortality and disturbance to animals located within and adjacent to the Proposed Scheme working corridor.	To protect habitats and fauna.	None required
SMC-E13	Throughout proposed scheme	Construction	Trenches, holes and pits will be kept covered at night or provide a means of escape for mammals, reptiles and amphibians that may become entrapped. Gates to compound areas will be designed sensitively to prevent mammals from gaining access and will be closed at night.	To avoid mammals becoming entrapped in and around compound areas during construction.	None required
n/a (note)	Throughout proposed scheme	Construction	Best practicable means will be employed to avoid the disturbance of sensitive species and habitats with noise, dust and air pollution. The Standard Mitigation Measures as detailed in ES Chapter 11 (Road Drainage and the Water Environment), ES Chapter 13 (Landscape and Visual), ES Chapter 16 (Air Quality) and ES Chapter 17 (Noise and Vibration) will be implemented to protect aquatic and terrestrial habitats and species.	To protect aquatic and terrestrial habitats and species.	n/a

Table 7.2: Project Mitigation Commitments

Mitigation Item ⁵	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required
P11-E20	Throughout proposed scheme	Construction	<p>Mitigation and compensation for the loss of ecologically important habitats will occur through habitat creation. This will include roadside planting, where appropriate, as shown on Landscape and Ecological Mitigation plan (Figure 13.4).</p> <p>Where feasible important habitats will be replaced on a like for like basis, with habitats of a similar type and character to be created within the vicinity of the area where the loss has occurred. Where this is not possible, habitat creation will occur within other suitable areas identified within the Proposed Scheme.</p> <p>Landscape planting and newly created habitat will be comprised of locally obtained native species of local provenance, and will comprise a mixture of species.</p> <p>Sowing/planting should be undertaken in the appropriate planting season but as soon as possible following completion of the works to reduce the likelihood of the areas being colonised by invasive, non-native species which are of lower value to wildlife.</p> <p>Replacement habitats will be monitored and managed during the aftercare and operation phase of the Proposed Scheme.</p> <p>Where practicable habitat creation will fill in existing gaps in linear vegetation features, adjoin or connect existing blocks of woodland or act as stepping stones between habitat areas.</p>	To compensate for the loss of ecologically important habitats (including woodland, dry heath, and blanket bog).	None

⁵ Only items relevant to reptiles are listed

Mitigation Item ⁵	Approximate Chainage/ Location	Timing of Measure	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required
P11-E25	Throughout proposed scheme	Construction	<p>Where retained, deadwood will be placed in a variety of locations and conditions to benefit a number of species.</p> <p>Deadwood should be stored in a location away from the working area to prevent risk of damage and then placed within areas of retained woodland or woodland planting at an appropriate time.</p> <p>Similarly, where possible, selected, blasted rock material will be incorporated into retained woodland and woodland planting for the benefit of a range of species including pine marten under the direction of an ECoW.</p> <p>Tree stumps will be retained in situ where felled on the edge of working areas where this does not pose a constraint to the works.</p> <p>Edges of woodland will be scalloped where practicable increasing variety of conditions to reduce the risk of windthrow.</p> <p>Existing dry stone dykes shall be retained where possible.</p>	To maintain/enhance habitat for species including reptiles, invertebrates, and pine marten.	None
P11-E34	Throughout proposed scheme	Pre-Construction and Construction	Species Protection Plans to be produced pre-construction and agreed with SNH. Plans will be produced for reptiles. Where appropriate, the Species Protection Plans will include monitoring plans.	To comply with conservation legislation and to protect fauna.	SNH
P11-E51	Throughout proposed scheme	Pre-Construction & Construction	A Precautionary Method of Working document will be developed and adopted within areas suitable to support reptiles. This will detail requirements with respect to seasonal working and reptiles and approaches to vegetation and hibernacula clearance. This document should be agreed with SNH. This document will detail the approaches to follow to ensure that no reptiles are killed or injured.	To protect reptiles within areas of suitable habitat during construction.	SNH

8. Impact Assessment

8.1. Introduction

8.1.1. This impact assessment discusses the potential impacts on reptiles during construction and operation of the Proposed Scheme. This impact assessment assumes the adoption of the mitigation measures detailed above and as such detailed assessment is only provided on residual impacts. Pre-mitigation impact characterisation is provided for these impacts for clarity.

8.2. Construction

8.2.1. Suitable reptile habitat will be lost during construction of the Proposed Scheme, with 220.5ha of predicted loss. Overall within the Study Area, 1238.63ha of suitable reptile habitat has been recorded. Habitat within the wider area also offers suitability for reptiles, with mosaics of wet and dry heath and woodland being present. Table 8.1 below, presents a breakdown of habitat suitability across the Study Area and the predicted habitat loss. In addition to habitat loss, severance may also occur where new junctions are proposed as connectivity between areas of suitable habitat will be affected. It is considered that the proposed new access tracks will not have a severance impact as their narrow width will be passable by reptiles, and these areas will not be frequently used by vehicles.

Table 8.1: Breakdown of Suitable Reptile Habitat Across the Study Area

Habitat Suitability Value	Total Area of Habitats in Study Area (ha)	Total Area of Habitat Lost in Proposed Scheme Plus 5m Construction Footprint (ha)
High	512.97	98.18
Moderate	418.31	75.37
Low	307.35	46.95
Unsuitable (roads and water)	35.15	24.25
Total	1273.78	244.75

8.2.2. Areas of suitable reptile suitable habitat will be created within the 5m construction footprint, with planting undertaken at the end of the construction programme. Details of the proposed planting are presented in the Landscape and Ecological Mitigation plan, Figure 13.4. The proposed planting will include areas of woodland planting, dry heath and acid grassland (as detailed in ES Appendix 12.2 – Designated Sites, Ancient Woodland and Habitats) which will provide areas suitable for foraging and basking. In addition to this, deadwood and dry stone dykes will be retained and habitat piles created, which will provide suitable refuge for reptiles.

8.2.3. Reptiles may be subject to direct mortality and disturbance during the construction phase, during the clearance of vegetation and from construction vehicles.

8.2.4. Impacts on reptiles within areas of moderate to high suitability are further addressed in Table 8.2 below.

Table 8.2: Reptiles - Specific Impacts, Mitigation and Residual Impacts - Construction

Location	Potential Impact	Characterisation of Impact	Mitigation	Residual Impacts
<p>Areas of high suitability for reptiles within the footprint of the Proposed Scheme</p> <p>(HSA 1, 3, 5, 6, 7, 17, 18 and 20 – see Figure 12.17)</p> <p>Value: Authority Area</p>	Habitat loss	<p>Extent: Direct loss of habitat highly suitable habitat for reptiles (98.18ha) and moderately suitable (75.37ha)</p> <p>Effect: Direct negative</p> <p>Duration: Long-term</p> <p>Frequency and timing: Single event</p> <p>Reversibility: Irreversible</p> <p>Likelihood: Certain</p> <p>Impact Descriptor: Medium</p>	<p>SMC-E1</p> <p>SMC-E2</p> <p>SMC-E8</p> <p>SMC-E9</p> <p>P11-E20</p> <p>P11-E25</p>	Not significant
<p>Areas of moderate suitability for reptiles within the footprint of the Proposed Scheme</p> <p>(HSA 9, 11, 12, 13 and 14 – see Figure 12.17)</p> <p>Value: Local</p>	Severance	<p>Extent: Fragmentation of highly and moderately suitable reptile habitat at junctions and access roads</p> <p>Effect: Indirect negative</p> <p>Duration: Long-term</p> <p>Frequency and timing: Single event</p> <p>Reversibility: Irreversible</p> <p>Likelihood: Certain</p> <p>Impact Descriptor: Medium</p>	<p>SMC-E1</p> <p>SMC-E2</p> <p>SMC-E8</p> <p>SMC-E9</p> <p>P11-E20</p> <p>P11-E25</p>	Not significant
	Injury and direct mortality	<p>Extent: Injury and/or mortality of common reptiles due to construction related activities, including earthworks and vehicle movements.</p> <p>Effect: Direct negative</p> <p>Duration: Permanent</p> <p>Frequency and timing: Single event</p> <p>Reversibility: Irreversible</p>	<p>SMC-E1</p> <p>SMC-E2</p> <p>SMC-E8</p> <p>SMC-E9</p> <p>SMC-E13</p> <p>P11-E25</p> <p>P11-E34</p>	Not significant



Location	Potential Impact	Characterisation of Impact	Mitigation	Residual Impacts
		Likelihood: Unlikely Impact Descriptor: Medium	P11-E51	
	Disturbance	Extent: Noise, vibration and increased human activities associated with construction activities may result in disturbance. Effect: Indirect negative Duration: Short-term Frequency and timing: Recurring Reversibility: Reversible Likelihood: Probable Impact Descriptor: Low	SMC-E1 SMC-E2 SMC-E8 SMC-E9 SMC-E13 P11-E25 P11-E34 P11-E51	Not significant

8.3. Operation

- 8.3.1. During operation of the Proposed Scheme, reptile habitat will be more fragmented, particularly within the vicinity of the junctions. This is unlikely to significantly affect reptile populations within the local area due to the abundance of similar and high-quality habitat in the area around the Proposed Scheme. Direct mortality of reptiles is unlikely to be any greater than the existing baseline. Therefore, operational impacts on reptiles are not considered significant.

9. Conclusion

- 9.1.1. The desk study results and incidental records identified the presence of three species of common reptile within Study Area (slow worm, adder and common lizard) and the habitat review identified moderate and high value reptile habitats across a large proportion of the Study Area (c. 70%). Habitats with suitability include areas of grassland, heath, and scrub, and structurally diverse mosaics across the Study Area. Areas of high suitability were considered to be of Authority Area value. Areas of moderate suitability were assessed as being of Local value. Such areas offer opportunities to support hibernating, basking and foraging reptiles.
- 9.1.2. Areas of woodland (broadleaved and coniferous) within the Study Area are generally of lower value for reptiles, with large extents of coniferous plantation considered to be of low suitability; however, edge habitat may offer opportunities for shelter and hibernation over the winter months. Areas of low suitability were considered to be of less than local value.
- 9.1.3. During the construction phase of the Proposed Scheme, reptiles may be affected by direct habitat loss, injury and mortality, as well as indirect disturbance. A Precautionary Method of Working approach will be adopted within areas suitable to support reptiles in order to mitigate potential impacts on reptiles during construction. Habitat creation will be undertaken to provide a mosaic of habitats and reduce effects of habitat loss and severance during operation of the Proposed Scheme.
- 9.1.4. Overall, there will be no significant residual negative impacts on the local populations of reptiles, due to the proposed mitigation and to the large extent of highly suitable habitat within the wider area.

ⁱ Highland Environment Forum (2015) Highland Nature: The Biodiversity Action Plan 2015-2020. Available at: <http://www.highlandbiodiversity.com/highland-bap.asp>

ⁱⁱ Cairngorms National Park Authority (2013) Cairngorms Nature Action Plan 2013-2018. Cairngorms National Park Authority, Grantown-on-Spey.

ⁱⁱⁱ Gent, T. and Gibson, S. (2003) Herpetofauna Workers Manual. Joint Nature Conservation Committee, Peterborough.

^{iv} Design Manual for Roads and Bridges (2005) Nature Conservation advice in relation to reptiles and roads. Volume 10, Section 4, Part 7.

^v Scottish Natural Heritage (2015) Reptiles. Available at: <http://www.snh.gov.uk/about-scotlands-nature/species/amphibians-and-reptiles/reptiles/>

^{vi} Froglife (1999) Advice Sheet 10: Reptile Survey. Froglife, Halesworth.

^{vii} Joint Nature Conservation Committee (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit. ISBN 0 86139 636 7. Joint Nature Conservation Committee, Peterborough.

^{viii} 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, Winchester.

^{ix} Scottish Government (2013, 2015) Scottish Biodiversity Strategy. Available at: <http://www.gov.scot/Publications/2013/06/5538> (Accessed 14/06/2016)

^x <http://www.legislation.gov.uk/uksi/2011/1824/contents/made> (Accessed 18/04/2017)

^{xi} Department for Communities and Local Development (2012) National Planning Policy Framework, Paragraph 118.

Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> (Accessed 14/06/2016).

^{xii} CH2MHill (2015) Preliminary Ecological Appraisal: North Scheme – Dalraddy to Moy.

ANNEX A - Confirmation of Survey Approach

Sent: 18 April 2017 13:18

To: Keith.Duncan@snh.gov.uk

Subject: Stage 3 survey methods A9 Dualling

Hi Keith,

Thanks for taking the time to chat with me regarding the Stage 3 survey methods the other week.

Just to confirm our conversation, I have checked our eDNA survey records for the waterbody at NH911, 178 and this did come back negative although we do have desk study records confirming GCN presence. I suspect the negative result may have something to do with the size of the waterbody. We have reviewed the location against the design and the habitat in the surrounding area and we are not proposing to undertake GCN surveys at this location. Given the separation of the Scheme from the pond by the A95, it is considered that the risk of encountering any GCN within the Scheme footprint at this location is extremely low, especially when combined with the suitability of the terrestrial habitat around the pond thus reducing the likelihood of GCN travelling to the habitats within the Scheme. We shall detail mitigation in this location including the use of a Precautionary Method of Working document to manage the low risk of encountering any GCN in this location.

With respect to reptiles we propose to undertake an assessment of habitat suitability, based on the NVC data to identify the areas where reptiles are most likely to be present. Standard mitigation measures will then be recommended, i.e. Precautionary Methods of Working, to cover hand searching of vegetation and avoiding clearance of hibernacula. I have also now confirmed this approach with the CNPA and they are happy with this.

With respect to red squirrels, we propose to undertake a habitat suitability appraisal across the route, covering a 50m buffer either side of the road, this will also record dreys, feeding signs and any sightings made. On the Tomatin Moy scheme, we followed the Forestry Commission survey methodology of 4 visits over a 2 week period. We found that the data collected on visits 2-4, did not give us any additional valuable information that was not already collected on the initial visit. With this in mind, we propose to undertake 1 survey visit rather than the 4. As discussed, we will review the data collected on the first visit to see if this picks out any areas which may merit further investigation. On the phone you mentioned consideration of a later visit to pick up if second litters are occurring. It is very unlikely that this level of information would be recorded if following the standard forestry commission method, as specific drey monitoring would likely be required. For the purposes of the Stage 3 assessment and impact assessment the key will be to identify areas of suitable habitat and squirrel presence. Specific pre construction surveys will then investigate any drey locations where removal is required. The need for such pre-construction checks will be detailed within the Stage 3 mitigation measures. I have also now confirmed this approach with the CNPA and they are happy with this.