

# Appendix 12.14

## Outline Species Protection Plan

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## 1 Introduction

### 1.1 Background

1.1.1 This Outline Species Protection Plan (OSPP) has been prepared to document specific mitigation and compensation measures identified through the Ecological Impact Assessment (EclA) of Project 9 - Crubenmore to Kincaig (Central Section) of the A9 Dualling Programme (hereafter referred to as the Proposed Scheme).

1.1.2 Further details of the Proposed Scheme are presented in the Environmental Statement (ES) **Chapter 5** in **Volume 1**, and findings of the accompanying EclA are presented in **Chapter 12** in **Volume 1**.

### 1.2 Scope

1.2.1 This OSPP highlights relevant mitigation for species affected by the Proposed Scheme based on the EIA assessment baseline (see **sub-section 1.3**) and has been developed in line with current best practice<sup>1</sup>.

1.2.2 Following consent, the Contractor will further develop information contained in this OSPP document to produce a Species Protection Plan (SPP) that will contain updated baseline information and take into account the detailed design of the scheme and the intended construction methods.

1.2.3 It is assumed that the SPP will form part of the Contractor's Construction Environment Management Plan (CEMP) and will contain details on the locations of sensitive habitat features, protection zones and control measures to be implemented by the Contractor during the construction period.

1.2.4 Prior to the commencement of construction, the Contractor's CEMP will be agreed with the statutory bodies and regulatory authorities including Cairngorms National Park Authority (CNPA), Scottish Environment Protection Agency (SEPA) and Scottish Natural Heritage (SNH).

1.2.5 Guidance on the optimal timing for carrying out ecological mitigation is provided in **Table 12-14-3**.

#### Species scoped out of EclA

1.2.6 The following species are absent from the study area and no specific mitigation is included at this stage:

- Common frog
- Common toad
- Great crested newt
- Palmate newt
- Smooth newt

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<sup>1</sup> Scottish Natural Heritage (undated) *Species Protection Plans* - <http://www.snh.gov.uk/protecting-scotlands-nature/species-licensing/forms-and-guidance/species-protection-plan/>

- Badger
- Pine marten.

1.2.7 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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. As required, the ECoW will advise the Contractor of any additional mitigation.

### 1.3 Data and Information Sources

1.3.1 The following sources were consulted for records of species:

- SNHi Information Services (e.g. SiteLink, iMap and Natural Spaces)
- Highland Biological Recording Group (HBRG)
- Cairngorms National Park Authority (CNPA)
- Royal Society for the Protection of Birds (RSPB) Scotland
- Spey Fishery Board (SFB)
- Scottish Environment Protection Agency

1.3.2 The following habitat and species surveys were undertaken between 2014 and 2017 to inform the EclA process for the Proposed Scheme:

- Phase 1 and 2 habitat survey
- Breeding bird survey (including scarce breeding birds and woodland grouse)
- Bird vantage point survey (breeding and non-breeding)
- Protected vertebrate survey
- Freshwater pearl mussel survey of the River Truim.

## 2 Birds

### 2.1 Protection Plan

2.1.1 An EclA has been undertaken for breeding and non-breeding birds as part of the ES for the Proposed Scheme (see **Chapter 12** in **Volume 1**). This identified potential impacts on the notable species shown in **Table 12-14-1**, notably within Insh Marshes National Nature Reserve (NNR).

2.1.2 The following outline protection measures have been prepared for the species and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Pre-construction surveys

2.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.

- 2.1.4 Pre-construction breeding bird surveys will cover a minimum of 500m beyond the Proposed Scheme, with up to date survey data being acquired from RSPB Scotland for land managed by them within Insh Marshes NNR.
- 2.1.5 The protection plan for breeding and non-breeding birds will be updated in line with pre-construction survey work which should be undertaken in the season prior to construction works commencing. Ongoing monitoring throughout construction to identify risks to key species, will be undertaken in accordance to an agreed (by SNH and the CNPA) construction monitoring plan. The monitoring plan will be required to include as a minimum:
- Monitoring the presence of breeding wigeon within the study area between April and July – (Inclusive)
  - Monitoring the presence of breeding waders surrounding construction areas and in alternative habitat provided throughout the construction phase.

Table 12-14.1: Key bird species assessed through the EclA

| Bird Species                                  | Breeding or Non-breeding | Conservation status |      |                            |   | Breeding/ wintering habitat   |
|---|--------------------------|---------------------|------|----------------------------|---|---|
|   |                          | SPA/Ramsar          | SSSI | Strathspey breeding waders | Schedule 1 Wildlife and Countryside Act |   |
| Osprey<br><i>Pandion haliaetus</i>            | breeding                 | ✓                   | ✓    |                            | ✓                                       | Usually mature trees.   |
| Wigeon<br><i>Anas penelope</i>                | breeding                 | ✓                   | ✓    |                            |   | Nest in dense vegetation usually close to open water.   |
| Wood sandpiper<br><i>Tringa glareola</i>      | breeding                 | ✓                   | ✓    |                            | ✓                                       | Nest in small scrapes on ground in marshes and swamps. Preference for wetter parts of swamps and marshes.                       |
| Spotted crane<br><i>Porzana</i>               | breeding                 | ✓                   | ✓    |                            | ✓                                       | Wet fens and swamps. Nest site in thick vegetation close to or standing in water on tussock.                                    |
| Hen harrier<br><i>Circus cyaneus</i>          | non-breeding             | ✓                   |      |                            | ✓                                       | Selects roost sites well away from sources of ambient disturbance. Foraging habitat comprises grassland, wetland and heathland. |
| Whooper swan<br><i>Cygnus</i>                 | non-breeding             | ✓                   | ✓    |                            | ✓                                       | Preferred feeding areas comprise of swamp vegetation. Roosts close to open water.   |
| Goldeneye<br><i>Bucephala clangula</i>        | Breeding                 |                     | ✓    |                            |   | Nest site typically in tree cavity close to a river/ other open water.  |
| Shoveler<br><i>Anas clypeata</i>              | Breeding                 |                     |      |                            |   | Nest site scrape on ground among grass or rushes usually close to open water.   |
| Curlew<br><i>Numenius arquata</i>             | Breeding                 |                     | ✓    | ✓                          |   | On ground often on grass tussock or low hummock.  |
| Redshank<br><i>Tringa totanus</i>             | Breeding                 |                     | ✓    | ✓                          |   | Shallow scrape on ground or hollow in grass tussock in areas of open wet grassland.   |
| Snipe<br><i>Gallinago</i>                     | Breeding                 |                     | ✓    | ✓                          |   | Shallow scrape on ground, surrounded by some herb or shrub cover close to areas of wet or marshy foraging habitat.              |
| Lapwing<br><i>Vanellus</i>                    | Breeding                 |                     |      | ✓                          |   | On open and slightly raised ground.   |
| Oystercatcher<br><i>Haematopus australgus</i> | Breeding                 |                     |      | ✓                          |   | On open ground including grassland or bare ground such as river gravels.  |
| Black grouse<br><i>Tetrao tetrix</i>          | Breeding                 |                     |      |                            |   | Nest site on ground among tall vegetation or low scrub.   |

### Mitigation

- 2.1.6 An Ecological Clerk of Works (ECoW) will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 2.1.7 During the planning of the construction works, the Contractor will seek to minimise the extent and duration of works within sensitive bird habitats, as advised by the ECoW.
- 2.1.8 Any trees, buildings and/ or structures that contain nesting birds should be excluded from the works area using a suitable buffer zone to avoid any potential damage or destruction of a nest.



- 2.1.9 Buffer zones associated with Schedule 1 birds recorded within the Proposed Scheme are shown in **Table 12-14-2**. Note that species listed on Schedule 1A (e.g. golden eagle, white-tailed eagle, hen harrier and red kite) should not be intentionally or recklessly harassed at any time.
- 2.1.10 Should it not be possible to maintain a sufficient buffer zone around nests belonging to Schedule 1 birds, the ECoW will advise on timing construction works to avoid disturbance to nesting birds and their dependant young (see **Table 12-14-3**). The ECoW may also advise on vegetation clearance out with the nesting season (i.e. March to August inclusive) to avoid impacts on nesting birds during construction.
- 2.1.11 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive bird habitats.
- 2.1.12 During the nesting season, the ECoW will regularly monitor areas of bare ground, cleared vegetation and material storage that may be used by breeding birds, and advise the Contractor of any additional mitigation required. The monitoring will be a minimum of 48 hours in advance of works in these areas, and if no works are proposed in sensitive areas, the monitoring can be reduced at the discretion of the ECoW.

*Table 12-14-2: Stand-off distances recommended for Schedule 1 breeding bird species*

| Species        | Avoidance Distances  | Reference source            |
|----------------|--|-----------------------------|
| Crossbill      | 50 to 150m depending on local conditions, topography and existing vegetation screening.  | Ruddock and Whitfield 2007  |
| Wood sandpiper | 200 to 500m.   | Currie and Elliot (1997)    |
| Spotted crane  | No ranges provided however spotted crane use dense vegetation for breeding and are very difficult to detect. Given their skulking behaviour, disturbance ranges are likely to be relatively short. A precautionary distance of 300m is applied in this case. | No published data available |
| Osprey         | 500 to 750m depending on the localised conditions and exposure to existing activity in the locality.   | Ruddock and Whitfield 2007  |

## 3 Bats

### 3.1 Protection Plan

3.1.1 An EclA has been undertaken for bats as part of the ES for the Proposed Scheme (see **Chapter 12** in **Volume 1**). This identified potential impacts on foraging common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bats *Plecotus auritus*, Daubenton's bats *Myotis daubentonii* and Natterer's bats *Myotis nattereri*. In addition, a tree roost containing seven soprano pipistrelle is present in woodland near ch. 55,150 (Chapelark), a roost is present in a residential building near ch. 56,200 (Coulintyre), and a roost is present in Glenruim railway bridge near ch. 40,600.

3.1.2 The following outline protection measures have been prepared for the above species and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Pre-construction surveys

3.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.

3.1.4 The presence/ absence of roosting bats within 50m of the Proposed Scheme will be identified in line with current professional standards, and surveys will be carried out by a suitably qualified bat ecologist. This will involve a preliminary inspection to classify the suitability of potential roost features (PRF), which will include a search for evidence of roosting bat activity (e.g. droppings, staining, scratches, etc).

3.1.5 Any PRFs that cannot be fully inspected to confirm the presence/ absence of roosting bats, will be subject to emergence/ re-entry surveys. Each PRF will be subject to the minimum number of surveys based on suitability (as described in current guidelines), and will be completed during the appropriate season (i.e. April to September inclusive).

#### Mitigation

3.1.6 Prior to construction, a suitably qualified (or team of suitably qualified) Ecological Clerk of Works (ECoW) will be appointed by the Contractor. The ECoW will be on site on a permanent basis during construction to:

- provide ecological advice over the entire construction programme
- 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
- monitor the implementation of the mitigation measures during the construction phase to ensure compliance with protected species legislation and commitments within the ES.

3.1.7 During the planning of the construction works, the Contractor will seek to minimise the extent and duration of works within sensitive bat habitats, as advised by the ECoW.

- 3.1.8 Any trees, buildings and/ or structures that contain roosting bats, should be excluded from the works area using a suitable buffer zone (as advised by the ECoW in accordance with **Table 12-14-3**) to avoid any potential damage or destruction of a bat roost.
- 3.1.9 The ECoW will liaise with SNH regarding works that will affect a bat roost, whether bats are present or not, to acquire a European Protected Species (EPS) licence to facilitate certain activities (e.g. tree-felling or demolition works). This may specify when certain activities must be carried out to minimise potential impacts on roosting bats.
- 3.1.10 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive bat habitats.
- 3.1.11 Replacement tree planting will be carried out in line with the Contractor’s Habitat Management Plan, and any EPS licence conditions, to avoid severance of bat commuting habitats (e.g. around Chapelpark).

## 4 European Wildcat

### 4.1 Protection Plan

- 4.1.1 An EclA has been undertaken for wildcat as part of the ES for the Proposed Scheme (see **Chapter 12** in **Volume 1**). This identified potential impacts on wildcat at the northern extent of the Proposed Scheme near Coulintyre. Although no dens have been recorded, the animal is assumed to be present in low densities within the surrounding landscape.
- 4.1.2 The following outline protection measures have been prepared for wildcat and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Pre-construction surveys

- 4.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.
- 4.1.4 The presence/ absence of wildcat within at least 200m of the Proposed Scheme will be identified according to current SNH advice. Surveys will be carried out by a suitably qualified ecologist (as defined within **Chapter 12, SMC-E2**) and will involve a thorough search of potential habitats for dens and incidental evidence of activity (e.g. scats, prey remains, footprints, etc.). Initial walkover surveys can be carried out at any time of year, although are typically more productive during autumn and winter when vegetation is lower and more accessible.
- 4.1.5 The Contractor will seek advice from SNH regarding any proposed monitoring required to establish the presence of wildcat using intrusive measures (e.g. camera-trapping).

#### Mitigation

- 4.1.6 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 4.1.7 During the planning of construction works, the Contractor will seek to minimise the extent and duration of works within sensitive wildcat habitats, as advised by the ECoW.

- 4.1.8 Any structures used for shelter or temporary protection of wildcat, should be excluded from the works area using a suitable buffer zone to avoid any potential damage or destruction of a den.
- 4.1.9 Should it not be possible to maintain a sufficient buffer zone around any dens, the ECoW will advise on timing construction works to avoid disturbance to wildcat (see **Table 12-14-3**).
- 4.1.10 ECoW will liaise with SNH regarding works that will affect any wildcat dens to acquire an EPS licence to facilitate certain activities (e.g. temporary works). This may specify when certain activities must be carried out to minimise potential impacts on wildcat.
- 4.1.11 The Contractor will cap any temporarily exposed pipe systems to prevent wildcat from gaining access and becoming trapped. The ECoW will advise on locations where mammal exit ramps must be installed within excavations to prevent wildcat from becoming trapped. These areas should be checked at the beginning of the shift for signs of wildcat.
- 4.1.12 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive wildcat habitats.
- 4.1.13 The ECoW will monitor any suspected dens that may be used by wildcat and advise the Contractor of any additional mitigation required.

## 5 Otter

### 5.1 Protection Plan

- 5.1.1 An EclA has been undertaken for otter as part of the ES for the Proposed Scheme (see **Chapter 12** in **Volume 1**). This identified potential impacts on otter, and spraints were recorded throughout the Proposed Scheme around the River Spey, Allt Eoghainn, Allt Cealgach, Burn of Inverton and Raitts Burn. No natal holts have been recorded, however couches have been recorded on the River Spey near Newtonmore and Insh Marshes, and a hover has been recorded underneath the River Spey crossing at Kingussie.
- 5.1.2 The following outline protection measures have been prepared for otter and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.
- Pre-construction surveys**
- 5.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.
- 5.1.4 The presence/ absence of otter within 200m of the Proposed Scheme will be identified according to current SNH advice<sup>2</sup>. Surveys will be carried out by a suitably qualified ecologist (as defined within **Chapter 12, SMC-E2**) and will involve a thorough search of potential habitats for holts and incidental evidence of activity (e.g. slides, spraints, feeding remains, footprints, etc). Otter surveys can be carried out at any time of year, although typically constrained by high water levels when bankside areas may be less accessible and field signs rapidly washed away.

<sup>2</sup> SNH Protected species advice for developers – Otter. Available from: <https://www.nature.scot/professional-advice/planning-and-development/natural-heritage-advice-planners-and-developers/planning-and-development-protected-animals>. Accessed March 2018.

- 5.1.5 The Contractor will seek advice from SNH regarding any proposed monitoring required to establish the status of a structure used for shelter or protection (e.g. camera-trapping of a mammal hole to establish otter presence).

#### Mitigation

- 5.1.6 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 5.1.7 During the planning of construction works, the Contractor will seek to minimise the extent and duration of works within sensitive otter habitats, as advised by the ECoW.
- 5.1.8 Any structures used for shelter or temporary protection of otter should be excluded from the works area using a suitable buffer zone to avoid any potential damage or destruction of a holt, couch or hover.
- 5.1.9 Should it not be possible to maintain a sufficient buffer zone around any holt, couch or hover, the ECoW will advise on timing construction works to avoid disturbance to otter.
- 5.1.10 The ECoW will liaise with SNH regarding works that will affect any otter holt, couch or hover to acquire an EPS licence to facilitate certain activities (e.g. temporary works). This may specify when certain activities must be carried out to minimise potential impacts on otter.
- 5.1.11 The Contractor will cap any temporarily exposed pipe systems to prevent otter from gaining access and becoming trapped. The ECoW will advise on locations where mammal exit ramps must be installed within excavations to prevent otter from becoming trapped. These areas should be checked at the beginning of the shift for signs of otter.
- 5.1.12 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive otter habitats.
- 5.1.13 In line with the relevant Pollution Prevention Guidelines (PPG), best working practice should be followed in order to minimise the likelihood of changes to water quality or chemistry through sedimentation or spills during construction, which could indirectly affect otter.
- 5.1.14 During construction, all chemicals and materials to be used on site should be safely and correctly stored and labelled in accordance with relevant legislation, ideally on a bund, and spill kits be made available on site in case spills do occur.
- 5.1.15 The ECoW will monitor any suspected holt, couch, hover or watercourse that may be used by otter, and advise the Contractor of any additional mitigation required.

## 6 Red Squirrel

### 6.1 Protection Plan

- 6.1.1 An EclA has been undertaken for red squirrel as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on red squirrels and their dreys in coniferous woodland throughout the scheme, particularly surrounding Ralia Lodge and Croftcarnoch.
- 6.1.2 The following outline protection measures have been prepared for red squirrel and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

### Pre-construction survey

- 6.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.
- 6.1.4 The presence/ absence of red squirrel within 50m of the Proposed Scheme will be identified in line with current professional standards. Surveys will be carried out by a suitably qualified ecologist (as defined within **Chapter 12, SMC-E2**) and will involve a thorough search of potential habitats for dreys and incidental evidence of activity (e.g. feeding remains). If dreys are discovered, these may need to be monitored to establish if they are used by red squirrel, and further information on their sensitivity (i.e. breeding) determined.

### Mitigation

- 6.1.5 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 6.1.6 During the planning of construction works, the Contractor will seek to minimise the extent and duration of works within sensitive red squirrel habitats, as advised by the ECoW.
- 6.1.7 Any trees that contain confirmed, or suspected, red squirrel dreys should be excluded from the works area using a suitable buffer zone (as advised by the ECoW) to avoid any potential damage or destruction of a drey.
- 6.1.8 Should it not be possible to maintain a sufficient buffer zone around any red squirrel drey, the ECoW will advise on timing construction works to avoid disturbance to red squirrel (see **Table 12-14-3**). The ECoW may also advise on vegetation clearance out with the breeding season (i.e. February to September inclusive) to avoid impacts on red squirrel during construction.
- 6.1.9 The ECoW will liaise with SNH regarding works that will affect a red squirrel drey to acquire a protected species licence to facilitate certain activities (e.g. tree-felling). This may specify when certain activities must be carried out to minimise potential impacts on red squirrel.
- 6.1.10 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive red squirrel habitats.
- 6.1.11 During the breeding season, the ECoW will regularly monitor dreys that may be used by red squirrel, and advise the Contractor of any additional mitigation required. The monitoring will be a minimum of 48 hours in advance of works in these areas, and if no works are proposed in sensitive areas, the monitoring can be reduced at the discretion of the ECoW
- 6.1.12 Replacement tree planting will be carried out in line with the Contractor's Habitat Management Plan, and any protected species licence conditions, to avoid severance of red squirrel habitat.

## 7 Water Vole

### 7.1 Protection Plan

7.1.1 An EclA has been undertaken for water vole as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on water vole burrows, latrines and feeding remains present within a ditch located near Kingussie junction. Activity within the wider study area was low overall.

7.1.2 The following outline protection measures have been prepared for water vole and their associated habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Pre-construction surveys

7.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.

7.1.4 The presence/ absence of water vole within 200m of the Proposed Scheme will be identified according to Dean *et al.* (2016). Surveys will be carried out by a suitably qualified ecologist (as defined within **Chapter 12, SMC-E2**) and will involve a thorough search of potential habitat for burrows and incidental evidence of activity (e.g. feeding stations, latrines, runs, footprints, etc). A minimum of two survey visits will be completed in suitable weather conditions between April and September; the first visit completed between mid-April and June inclusive, and a second visit between July and September inclusive. Surveyors will have regard to any fields signs encountered associated with American mink, recording any evidence and reporting sightings to SNH.

#### Mitigation

7.1.5 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.

7.1.6 During the planning of construction works, the Contractor will seek to minimise the extent and duration of works within sensitive water vole habitats, as advised by the ECoW.

7.1.7 Any structures used for shelter or temporary protection by water vole, should be excluded from the works area using a suitable buffer zone (as advised by the ECoW) to avoid any potential damage or destruction of a burrow.

7.1.8 Should it not be possible to maintain a sufficient buffer zone around any burrows, the ECoW will advise on timing construction works to avoid disturbance to water vole (see **Table 12-14-3**).

7.1.9 The ECoW will liaise with SNH regarding works that will affect any water vole burrows to acquire a protected species licence to facilitate certain activities (e.g. temporary works). This may specify when certain activities must be carried out to minimise potential impacts on water vole.

7.1.10 Planned damage or destruction of water vole burrows will require advanced removal of individuals using appropriate measures (e.g. trapping), and translocation to a pre-determined receptor site containing suitable habitat and burrows.

- 7.1.11 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive water vole habitat.
- 7.1.12 In line with the relevant Pollution Prevention Guidelines (PPG), best working practice should be followed in order to minimise the likelihood of changes to water quality or chemistry through sedimentation or spills during construction, which could indirectly affect water vole.
- 7.1.13 During construction, all chemicals and materials to be used on site should be safely and correctly stored and labelled in accordance with the relevant legislation, ideally on a bund and spill kits be made available on site in case spills do occur.
- 7.1.14 The ECoW will monitor any suspected burrow that may be used by water vole, and advise the Contractor of any additional mitigation required.

## 8 Atlantic Salmon

### 8.1 Protection Plan

- 8.1.1 An EclA has been undertaken for Atlantic salmon as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on Atlantic salmon in suitable habitats within the River Spey and associated tributaries.
- 8.1.2 The following outline protection measures have been prepared for Atlantic salmon and potential habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Mitigation

- 8.1.3 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 8.1.4 During the planning of construction works, the Contractor will ensure changes in water flow during the Atlantic salmon upstream migration period (i.e. May to November inclusive) will be avoided. In addition, the Contractor will avoid in-channel working during the Atlantic salmon spawning and hatching period (i.e. November to May inclusive). Should avoidance of works/ works rescheduling not be possible during sensitive migration/ spawning/ breeding seasons, the Contractor will agree working methods, timings and exclusion zones that will be implemented during the works. For any works in the salmon migration/ spawning season, a 50dB in-river noise threshold limit will be applied. The programming and threshold noise levels specifically apply to piling on riverbanks.
- 8.1.5 Where technically feasible, the following mitigation measures will be deployed: bubble curtain within the river; a neoprene ‘dolly’ and interstitial device between the pile and piling hammer; ‘soft start’ techniques to reduce hammer drop height.
- 8.1.6 Any sensitive fish habitats should be excluded from the works area using a suitable buffer zone (as advised by the ECoW) to avoid any potential disturbance to sensitive fish habitats (e.g. effects from piling, blasting or temporary lighting).
- 8.1.7 Should it not be possible to maintain a sufficient buffer zone around sensitive fish habitat, the ECoW will advise on timing construction works to avoid disturbance to Atlantic salmon (see **Table 12-14-3**).



- 8.1.8 A 10m exclusion zone around sensitive watercourses will be installed during the construction phase to reduce the risk of accidental spillages and pollution incidents; no refuelling operations will be permitted within these exclusion zones.
- 8.1.9 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive fish habitats.
- 8.1.10 In line with the relevant Pollution Prevention Guidelines (PPG), best working practice should be followed in order to minimise the likelihood of changes to water quality or chemistry through sedimentation or spills during construction, which could affect freshwater species including Atlantic salmon.
- 8.1.11 During construction, all chemicals and materials to be used on site should be safely and correctly stored and labelled in accordance with relevant legislation, ideally on a bund, and spill kits be made available on site in case spills do occur.

## 9 Arctic Charr

### 9.1 Protection Plan

- 9.1.1 An EclA has been undertaken for Arctic charr as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on Arctic charr in suitable habitat at the Spey crossing.
- 9.1.2 The following outline protection measures have been prepared for Arctic charr and potential habitat features that could be affected during the construction phase, and will be implemented by the Contractor.
- Mitigation**
- 9.1.3 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 9.1.4 During the planning of construction works, the Contractor will ensure changes in water flow and in-channel working during the Arctic charr sensitive period (September to January) will be avoided. Should avoidance of works/ rescheduling not be possible during the sensitive season, the Contractor will agree working methods, timings and exclusion zones that will be implemented during the works.
- 9.1.5 Where technically feasible, the following mitigation measures will be deployed: bubble curtain within the river, a neoprene ‘dolly’ and interstitial device between the pile and piling hammer; ‘soft start’ techniques to reduce hammer drop height.
- 9.1.6 Any sensitive fish habitats should be excluded from the works area using a suitable buffer zone (as advised by the ECoW) to avoid any potential disturbance to sensitive fish habitats (e.g. effects from piling, blasting or temporary lighting).
- 9.1.7 Should it not be possible to maintain a sufficient buffer zone around sensitive fish habitat, the ECoW will advise on timing construction works to avoid disturbance to Arctic charr (see **Table 12-14-3**).
- 9.1.8 A 10m exclusion zone around sensitive watercourses will be installed during the construction phase to reduce the risk of accidental spillages and pollution incidents; no refuelling operations will be permitted within these exclusion zones.

- 9.1.9 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive fish habitats.
- 9.1.10 In line with the relevant Pollution Prevention Guidelines (PPG), best working practice should be followed in order to minimise the likelihood of changes to water quality or chemistry through sedimentation or spills during construction, which could affect freshwater species including Arctic charr.
- 9.1.11 During construction, all chemicals and materials to be used on site should be safely and correctly stored and labelled in accordance with relevant legislation, ideally on a bund, and spill kits be made available on site in case spills do occur.

## 10 Sea Lamprey

### 10.1 Protection Plan

- 10.1.1 An EclA has been undertaken for sea lamprey as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on sea lamprey in suitable habitats within the River Spey and associated tributaries.
- 10.1.2 The following outline protection measures have been prepared for sea lamprey and potential habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

#### Mitigation

- 10.1.3 As described in **paragraphs 8.1.3 to 8.1.11** for Atlantic salmon, with the following provisions covering mitigation for sea lamprey:
- 10.1.4 During the planning of construction works, the Contractor will ensure changes in water flow during the sea lamprey upstream migration period (i.e. April to July inclusive) will be avoided. In addition, the Contractor will avoid in-channel working during the sea lamprey spawning and hatching period (i.e. June to August inclusive). Should this not be possible, the Contractor will prepare a fish rescue plan to outline measures that will minimise disturbance to sea lamprey (e.g. temporary nets, trapping, etc.).

## 11 Freshwater Pearl Mussel (FWPM)

### 11.1 Protection Plan

- 11.1.1 An EclA has been undertaken for FWPM as part of the ES for the Proposed Scheme (see **Chapter 12 in Volume 1**). This identified potential impacts on FWPM in suitable habitats within the River Spey and associated tributaries.
- 11.1.2 The following outline protection measures have been prepared for FWPM and potential habitat features that could be affected during the construction phase, and will be implemented by the Contractor.

### Pre-construction surveys

- 11.1.3 The Contractor will undertake pre-construction surveys to verify and, where baseline conditions have changed, 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.
- 11.1.4 The presence/ absence of freshwater pearl mussel within watercourses affected by the Proposed Scheme will be identified according to relevant SNH shallow-water or deep-water survey protocol (Cosgrove *et al*, 2007)<sup>3</sup>. This will involve a thorough search of substrates for mussels. Surveys are constrained by high water levels/ flows, which present a health and safety risk to surveyors, therefore surveys should be carried out between April and September inclusive.

### Mitigation

- 11.1.5 The ECoW will be on site on a permanent basis to oversee the implementation of ecology mitigation during the construction phase.
- 11.1.6 During the planning of construction works, the Contractor will seek to minimise the extent and duration of works within any mussel beds, as advised by the ECoW.
- 11.1.7 Should it not be possible to exclude mussel beds from the works areas, the ECoW will liaise with SNH regarding works that will affect FWPM to acquire a protected species licence to facilitate certain activities (e.g. temporary works). This may specify how/ when certain activities must be carried out to minimise potential impacts on FWPM. Planned loss of mussel beds will require advanced removal of individuals using appropriate measures, and translocation to a pre-determined receptor site containing suitable substrates.
- 11.1.8 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to confirmed/ sensitive aquatic habitat.
- 11.1.9 In line with the relevant Pollution Prevention Guidelines (PPG), best working practice should be followed in order to minimise the likelihood of changes to water quality or chemistry through sedimentation or spills during construction, which could affect freshwater species including freshwater pearl mussel.
- 11.1.10 During construction, all chemicals and materials to be used on site should be safely and correctly stored and labelled in accordance with relevant legislation, within a bunded area, and spill kits will be made available on site.
- 11.1.11 A 10m exclusion zone around sensitive watercourses will be installed during the construction phase to reduce the risk of accidental spillages and pollution incidents; no refuelling operations will be permitted within these exclusion zones.

## 12 Reptiles

### 12.1 Protection Plan

- 12.1.1 An EclA has been undertaken for reptiles as part of the ES for the Proposed Scheme, which are assumed to be present in suitable habitats (see **Chapter 12** in **Volume 1**).

<sup>3</sup> Cosgrove, P., Hastie, L., MacDougal, K. and Kelly, A. 2007. *Development of a remote, deep-water survey method for freshwater pearl mussels*. SNH Commissioned Report No 263 (ROAME No. F06AC606)

- 12.1.2 The following outline protection measures have been prepared for water vole and their associated habitat features that could be affected during the construction phase, which will be implemented by the Contractor.

#### Mitigation

- 12.1.3 The ECoW will be on site on a permanent basis throughout all site clearance and earthworks stages, who will provide an advisory role with regards to reptiles.
- 12.1.4 For works carried out in suitable reptile habitat (e.g. rough grassland, tall herb and heath) between March and October (active period) the Contractor will adopt a sensitive approach to vegetation clearance to minimise the risk of incidental injury or mortality.
- 12.1.5 Potential hibernation sites for reptiles (e.g. log or rock piles and stone walls, rabbit warrens) should be removed from site during the active period (March to October – shown in **Table 12-14-3**). Reptiles may use these features for shelter during the day, therefore they should only be removed once a pre-construction check has confirmed no reptiles are present. If the feature is difficult to inspect and the absence of reptiles cannot be confirmed, the feature should be carefully dismantled by hand. Any reptiles present will be relocated to a pre-determined safe area.
- 12.1.6 Material storage areas and machinery should be checked regularly for reptiles throughout the construction works; this includes wheel arches and temporary tracks, especially in the spring and summer months, as reptiles may use these areas for shelter or for basking.
- 12.1.7 Temporary and permanent exclusion fencing will be erected where necessary, to protect reptiles and to remove them from affected areas; a solid barrier may be required to stop reptiles recolonising affected habitats.
- 12.1.8 If reptiles are encountered on site, all works should cease until the ECoW has inspected the site and provided advice on any additional mitigation measures which may be required.
- 12.1.9 The ECoW will make site personnel aware of the risks, mitigation and emergency procedures for working in proximity to sensitive reptile habitat.

Table 12-14-3: Guidance on the optimal timing for carrying out ecological mitigation

| Species                    | Jan  | Feb  | Mar  | Apr   | May  | Jun                                   | Jul   | Aug  | Sep   | Oct                                   | Nov                                 | Dec |
|----------------------------|--|--|--|---|--|---------------------------------------|---|--|---|---------------------------------------|-------------------------------------|-----|
| Breeding birds (general)   | Vegetation clearance not restricted  |  | Vegetation clearance possible with precautions overseen by ECoW                                    |   |  |                                       |   |  | Vegetation clearance not restricted   |                                       |                                     |     |
| Breeding birds (Crossbill) | Where ECoW determines crossbill are present breeding conifer removal restricted during possible breeding season. |  |  |   |  |                                       |   | Where ECoW determines crossbill are not breeding, conifer removal can take place subject to absence of other constraints |   |                                       |                                     |     |
| Badger                     | Badger sett closure restricted   |  |  |   |  |                                       | Badger sett closure under licence possible, if required |  |   |                                       | Badger sett closure restricted      |     |
| Bats (maternity)           | No restrictions around breeding sites  |  |  |   | Restrictions to works around breeding sites                    |                                       |   |  | No restrictions around breeding sites   |                                       |                                     |     |
| Bats (summer)              | No restrictions around summer sites  |  |  |   | Restrictions to works around summer sites                      |                                       |   |  | No restrictions around summer sites   |                                       |                                     |     |
| Bats (mating)              | No restrictions around mating sites  |  |  |   |  |                                       |   | Restrictions to works around mating sites  |   |                                       | No restrictions around mating sites |     |
| Bats (hibernation)         | Restrictions to works around hibernation sites   |  |  | No restrictions to works around hibernation sites |  |                                       |   |  | Restrictions to works around hibernation sites                                |                                       |                                     |     |
| Red squirrel               |  | Restrictions to works around breeding season |  |   |  |                                       |   |  | Avoid felling trees housing dreys   |                                       |                                     |     |
| Atlantic salmon            | Avoid in-channel works in spawning habitat when eggs, alevins and fry present                                    |  |  |   | In-channel works possible with migratory fish and parr present |                                       |   |  | Avoid in-channel works in spawning habitat when eggs, alevins and fry present |                                       |                                     |     |
| Arctic charr               |  | In-channel works possible                    |  |   |  |                                       |   | Avoid in-channel works   |   |                                       |                                     |     |
| Sea lamprey                | In-stream works possible   |  |  |   | Avoid in stream works during spawning                          |                                       | In-stream works possible                                |  |   |                                       |                                     |     |
| Amphibians and reptiles    | Avoid damage to hibernation features   |  | Sensitive management of habitats during active season, e.g. phased removal of grassland/ heathland |   |  |                                       |   |  |   | Avoid damage to hibernation features  |                                     |     |
| Water vole                 | Avoid all works in water vole habitat  |  | Mitigation by displacement   |   | Avoid all works in water vole habitat                          |                                       |   |  |   |                                       |                                     |     |
|                            |  |  | Mitigation by trapping and relocation  |   |  | Avoid all works in water vole habitat |   | Possible trapping and relocation   |   | Avoid all works in water vole habitat |                                     |     |
| European wildcat           | Works to avoid main breeding seasons if located near a den   |  |  |   |  |                                       | Works near to a den                                     |  |   |                                       |                                     |     |

