Preliminary Ecological Appraisal Report

Berryden Corridor Improvement Project

Aberdeen

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1 Introduction

1.1 Background

The existing Berryden corridor running from Skene Square to Belmont Road facilitates journeys between the city centre, the north of Aberdeen and beyond. The corridor represents a pinch point in the city road network and has been identified as a route operating beyond its capacity leading to significant congestion and journey time delays, particularly at peak times. There is also limited dedicated infrastructure for cyclists and a lack of consistent infrastructure for pedestrians.

The Berryden Corridor Improvement Project (the "Project") involves widening the existing road and junction improvements between Skene Square and Ashgrove Road, and constructing a new section of road between Ashgrove Road and Kittybrewster roundabout. The Project is intended to improve the efficiency of the public network through improving journey time reliability, relieving congestion and improving infrastructure for walking and cycling.

The purpose of this report is to identify the baseline ecological information, classify the habitats present and assess whether proposed development activities have the potential to adversely affect any designated nature conservation sites, protected or notable habitats or species and to identify the requirements for further consideration in the design of the proposed Project.

1.2 Project description

The Project involves widening the existing road and junction improvements between Skene Square and Ashgrove Road, and constructing a new section of road between Ashgrove Road and Kittybrewster roundabout. The Project in its entirety extends for approximately 1.8km. The Project can be described in two main sections, these being:

- Road Widening - From the junction of Skene Square with Rosemount Place following the route of the B986 then C156C Berryden Road generally in a north west direction until it meets the junction of the C156C Ashgrove Road/Back Hilton Road; and
- New Road Construction – From the junction of the C156C Berryden Road/Ashgrove Road/Back Hilton Road generally in a northerly direction running between the residential developments of Picktillum Place and Kittybrewster Square and to the rear of properties lying to the east of the A96 Great Northern Road until it meets with the A96 Kittybrewster Roundabout. Included is an additional link road from the proposed new road, to tie in with the C156C Back Hilton Road at its junction with the U308C Cattofield Terrace.

This proposed route is hereafter referred to as the "Site".

1.3 Scope of surveys

In accordance with the Guidelines for Preliminary Ecological Appraisal (GPEA)[1] the scope is to establish a baseline of ecological information and ascertain whether the proposed development activities have the potential to adversely affect any designated sites, protected and/or notable habitats and/or species. To achieve this, the following were carried out:

[1] CIEEM (2017). Guidelines for Preliminary Ecological Appraisal (2nd Edition).

- A desk study to obtain information on statutory and non-statutory sites of nature conservation interest, and records of both protected and/or notable species within 2km of the Site;
- A Phase 1 habitat survey involving a site visit to record broad habitat types, together with key floral species including any invasive non-native species (INNS)[2]. This was extended to include recording of any evidence of protected fauna or habitats capable of supporting protected fauna; and
- An assessment of potential ecological constraints to the development and recommendations for further survey and mitigation. Locations of any ecological constraints or features of ecological interest and vegetation recorded on and around the development are included in an accompanying Phase 1 habitat map with Target Notes (**Appendices A & B**). This report and map are supported by photographs (**Appendix C**) and information regarding the latest legislation (**Appendix D**).

[2] Listed in Section 14 of the Wildlife and Countryside Act (1981) (as amended).

2 Methodology

2.1 Desk Study

The desk study involved conducting database searches for protected and notable species as well as statutory and non-statutory designated sites within a 2km radius of the Site. The baseline conditions are based on a review of existing available information and requested updated data including:

- AECOM. (2009). *Berryden Transport Improvements: Environmental Option Appraisal*. AECOM ltd., Aberdeen;
- North East Scotland Biological Records Centre (NESBReC); and
- Scotland's Environment Webmap.[3]
- Details of statutory sites and ancient woodland were obtained from a search on Scotland's Environment Webmap. Records of protected and notable species were provided by The North East Scotland Biological Records Centre (NESBReC). A summary of the key environmental legislation with regards to habitats and species is provided in **Appendix D.**

2.2 Field Survey

An extended Phase 1 habitat survey was conducted of accessible areas within the Site boundary and to a buffer of 50m (see **Appendix A**) on 7th May 2019 by Sweco Principal Ecologist Claire Hopkins MCIEEM and Consultant Ecologist Erik Paterson ACIEEM to identify the habitats present on site, and their potential to support protected species. A dusk bat survey was undertaken on the same date.

A Phase 1 habitat survey is a standardised method of recording and mapping characteristic vegetation and habitat types in accordance with JNCC guidelines[4]. Phase 1 habitat types were recorded along with an indication of the plant species present together with the structure, condition and extent of the habitat.

The survey was extended to include a baseline ecological constraints survey, whereby the locations of any evidence of, or habitats with potential for, protected species were noted. The Site was inspected for evidence of and its potential to support other protected or notable species listed on any of the legislation listed in **Appendix D**.

Structures and trees within the footprint of the proposed Project - and which would therefore be lost to the Project - were assessed for their bat roosting potential in accordance with the current

[3] https://map.environment.gov.scot/sewebmap/
[4] JNCC (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. 3rd Edition

guidelines for preliminary roost assessment (Table 2.1).[5] Additionally, areas and broad habitats which presented opportunities to support roosting, foraging, and commuting bats were noted.

Table 2.1. Bat roost suitability categories for trees and structures (from BCT best practice guidance).

Suitability	Description
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

A single back-tracking survey was undertaken for bats wherein the surveyors attended Site from sunset until it became too dark to see flying bats. During this survey, surveyors walked slowly around the site with handheld bat detectors listening and watching for bats emerging from structures. Where bats were seen to be commuting, surveyors walked in the opposite direction to identify potential emergence locations.

A return visit was made to the northernmost part of the study area in order to check for the presence of stands of INNS on 13th June 2019 by Sweco Technical Manager Keith Ross MCIEEM. This was done in order to check for the presence and extent of infestations, because the May visit was prior to the emergence of foliage.

[5] Collins, J. (2016). Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust, London. 100pp.

2.3 Survey Limitations

To determine presence or likely absence of protected species, or to make assessments of population sizes or frequency of use usually requires multiple visits at suitable times of the year. As a result, the survey undertaken focused on assessing the potential of the Site to support species of note, which are of principal importance for the conservation of biodiversity, especially those given protection under UK or European wildlife legislation. Further targeted surveys would be required to determine the presence of specific protected species; details of such recommendations are included in Section 5 of this report.

The survey was undertaken within the recommended Phase 1 habitat survey season of April-September. As vegetation levels are still low in spring, signs of badger and otter are still relatively easy to identify and so this survey was within the optimal period. Access to the interior of buildings within the Site was not requested for the purpose of exhaustive survey and some of the buildings were unsafe for access in any case (i.e. TN9 and TN12, see Table 4.2), so full inspections for bat roosting potential have not been carried out. However, exterior inspections still generate a picture of the likelihood of bats being able to enter a building, if not the size and suitability of any cavities. This limitation is not regarded as a significant constraint within the context of this Project.

No access was taken to any private ground (with the exception of that surrounding buildings identified to be demolished to assess bat roosting potential). The potential for any notable species within un-surveyed private property is unlikely given the urban nature of the Site and properties which would be affected by the proposals have been assessed for their potential to support roosting bats as detailed in this report.

The bat survey undertaken on the evening of the 7th May was undertaken in what would be considered by the current best practice guidance as suboptimal, with temperatures below the 10°C threshold with some light drizzle towards the end of the survey. However, as this survey was designed to give only a picture of bat activity within the Site, and not to inform any licence requirements at this stage, this is not considered a serious limitation to this study.

The details of this report will remain valid for a period of one year[6]. Beyond this period, it is recommended that a new review of the ecological conditions is undertaken.

[6] CIEEM (2019). Advice note on the lifespan of ecological reports and surveys. CIEEM, Winchester.

3 Desk Study

3.1 Statutory Sites

The desk study revealed the following sites of nature conservation value within a 2km radius of a central point NJ930074 in the middle of the proposed Berryden Realignment which is an appropriate distance within an urban setting (Table 3.1).

Table 3.1. Records of Designated Sites

Site Name	Description	Distance	Designated Features
Kittybrewster Railway Line LNCS	Mostly neutral grassland, tall ruderals, scrub, and woodland pockets. Provides a green corridor through the city and does not appear to be connected to the Site by any semi-natural habitats.	84m	Neutral grassland and scrub.
Rubislaw LNCS	A burn which passes through tall grassland, broadleaved woodland, and amenity grassland through residential and built-up areas. Culverted in areas.	440m	Flowing water
River Don Corridor Aberdeen City Local Nature Conservation Site (LNCS)	Rich marginal vegetation along River Don corridor excepting within grazed areas. Steep-sided wooded banks of lower Don some of the best quality within the district.	790m	Rich Marginal vegetation Steep-sided riparian woodland
Hilton Wood LNCS	Relatively small site comprising managed broadleaved woodland containing mainly sycamore, beech, winch elm, horse chestnut, and Norway maple.	1100m	Managed broadleaved woodland

3.2 Ancient Woodland

The desk study revealed seven sites listed on the Ancient Woodland Inventory (AWI) for Scotland within 2km of the Site (Table 3.2). All Ancient Woodland sites are far enough away from the site and not connected to the Site by any semi-natural habitats resulting in no anticipated pathways for effects and so are not considered further.

Table 3.2. Records of Ancient Woodland Sites.

Site name (if known)	Description	Area	Distance
	Long-established (of plantation origin)	4.32 Ha	740m North of Berryden Road
	Long-established (of plantation origin)	3.79 Ha	984m N
	Long-established (of plantation origin)	8.84 Ha	1075m N
	Long-established (of plantation origin)	3.44 Ha	1097m N
	Long-established (of plantation origin)	12.2 Ha	1269m N
	Ancient (of semi-natural origin)	3.42 Ha	1444m N
	Long-established (of plantation origin)	4.38 Ha	1800m SW

3.3 Protected and Notable Species

3.3.1 AECOM Data

AECOM presented data collected during field studies in 2009, a summary of this data can be found within Table 3.3 below and the surveys undertaken by Sweco in May/June 2019 have updated this information.

Table 3.3. AECOM identified ecological features and their locations.

Species	Location
Japanese knotweed (*Fallopia japonica*)	NJ 93139 08293
Japanese knotweed	NJ 93416 08160
Japanese knotweed	NJ 94148 08095
Bat Roosting Potential “Good”	“All buildings proposed to be demolished or partly demolished are considered to contain good bat roosting potential […] in particular the old Cornhill hospital complex […] the two substation buildings and old industrial buildings just to the east of Great Northern Road.”

Records were provided within 2km of the Site; listed below are recent (post-2000) records of protected and/or notable species. Due to the nature of the works proposed which avoids riparian and aquatic habitats; freshwater fish, freshwater invertebrate and marine species records have been omitted from the lists reported here.

3.3.2 Plants

Records were provided by NESBReC for the following native floral species within 2km of the Site (Table 3.4).

Table 3.4. Records of Notable Pant Species.

Species name	Scientific name	Designations
Hoary plantain	*Plantago media*	Scottish Biodiversity list [7]
Hairy sedge	*Carex hirta*	Locally Important Species
Viper's bugloss	*Echium vulgare*	Locally Important Species
Gypsywort	*Lycopus europaeus*	Locally Important Species

3.3.3 Birds

Records provided by NESBReC indicated that there is a varied assemblage within 2km of the Site including both common and rarer breeding species. All wild birds as well as their occupied nests and eggs, are protected under the Wildlife & Countryside Act 1981 (as amended) [WCA]. Listed below are bird species recorded within 2km of the Site (Table 3.5).

Table 3.5. Records of Notable Bird Species.

Species name	Scientific name	Designations
Common tern	*Sterna hirundo*	Annex 1[8], BoCC4 Amber[9]
Honey-buzzard	*Pernis apivorus*	Annex 1, BoCC4 Amber
Kingfisher	*Alcedo atthis*	Annex 1, BoCC4 Amber
Merlin	*Falco Columbarius*	Annex 1, BoCC4 Red
Osprey	*Pandion haliaetus*	Annex 1, BoCC4 Amber

[7] The Scottish Biodiversity List includes those Scottish species which are considered by the Scottish Government to be of principal importance for biodiversity conservation.
[8] Annex 1 and Annex 2.2 include those birds listed on the EU Birds Directive (See **Appendix D** for detail).
[9] BOCC4 stands for "Birds of Conservation Concern" and is the 4th review of British bird species and their conservation status. Red are those most at risk, with Amber less at risk.

Species name	Scientific name	Designations
Peregrine	*Falco peregrinus*	Annex 1
Red kite	*Milvus milvus*	Annex 1
Red-throated diver	*Gavia stellate*	Annex 1
Ruff	*Calidris pugnaux*	Annex 1
Slavonian grebe	*Podiceps auritus*	Annex 1, BoCC4 Red
Smew	*Mergellus albellus*	Annex 1, BoCC4 Amber
Whooper swan	*Cygnus Cygnus*	Annex 1, BoCC4 Amber
Goldeneye	*Bucephala clangula*	Annex 2.2[7], BoCC4 Amber
Pink-footed goose	*Anser Brachyrhynchus*	Annex 2.2, BoCC4 Amber
Redwing	*Turdus iliacus*	Annex 2.2, BoCC4 Red
Scaup	*Aythya marila*	Annex 2.2, BoCC4 Red
Black-tailed godwit	*Limosa limosa*	UK BAP Priority Species[10], BoCC4 Red
Bullfinch	*Pyrrhula pyrrhula*	UK BAP Priority Species, BoCC4 Amber
Cuckoo	*Cuculus canorus*	UK BAP Priority Species, BoCC4 Red
Dunnock	*Prunella modularis*	UK BAP Priority Species, BoCC4 Amber
Hawfinch	*Coccothraustes coccathraustes*	UK BAP Priority Species, BoCC4 Red
Herring gull	*Larus agentatus*	UK BAP Priority Species, BoCC4 Red
House sparrow	*Passer domesticus*	UK BAP Priority Species, BoCC4 Red
Lapwing	*Vanellus vanellus*	UK BAP Priority Species, BoCC4 Red
Lesser Redpoll	*Acanthis cabaret*	UK BAP Priority Species, BoCC4 Red
Red grouse	*Lagopus lagopus*	UK BAP Priority Species, BoCC4 Amber
Red-backed shrike	*Lanius collurio*	UK BAP Priority Species, BoCC4 Red

[10] The UKBAP (United Kingdom Biodiversity Action Plan) Listed a number of species which they considered to be a priority for biodiversity conservation.

Species name	Scientific name	Designations
Song thrush	*Turdus philomelos*	UK BAP Priority Species, BoCC4 Red
Starling	*Sturnus vulgaris*	UK BAP Priority Species, BoCC4 Red
Tree sparrow	*Passer montanus*	UK BAP Priority Species, BoCC4 Red
Yellowhammer	*Emberiza citronella*	UK BAP Priority Species, BoCC4 Red
Brambling	*Fringilla montifringilla*	Scottish Biodiversity list
Purple sandpiper	*Calidris maritima*	Scottish Biodiversity list
Snow bunting	*Plectrophenax nivalis*	Scottish Biodiversity list, BoCC4 Amber
Hobby	*Falco Subbuteo*	Scottish Biodiversity list
Barn owl	*Tyto alba*	Scottish Biodiversity list
Black-headed gull	*Chroicocephalus ridibundus*	Scottish Biodiversity list, BoCC4 Amber
Swift	*Apus apus*	Scottish Biodiversity list
Woodcock	*Scolopax rusticola*	Scottish Biodiversity list, BoCC4 Red
Hooded crow	*Corvus cornix*	Scottish Biodiversity list
Kestrel	*Faco tinnunculus*	Scottish Biodiversity list, BoCC4 Amber
Siskin	*Carduelis spinus*	Scottish Biodiversity list

3.3.4 Herpetofauna

Records were provided by NESBReC for the following notable herpetofauna species within 2km of the Site (Table 3.6).

Table 3.6. Records of Notable Herpetofauna Species.

Species name	Scientific name	Designations
Common toad	*Bufo bufo*	UK BAP Priority Species

3.3.5 Mammals

Records were provided by NESBReC for the following notable mammal species within 2km of the Site (Table 3.7).

Table 3.7. Records of Notable Mammal Species.

Species name	Scientific name	Designations
Daubenton's Bat	*Myotis daubentonii*	EPS[11] Scottish Biodiversity list
Soprano Pipistrelle	*Pipistrellus pygmaeus*	EPS, Scottish Biodiversity list
Common pipistrelle	*Pipistrellus pipistrellus*	EPS, Scottish Biodiversity list
Badger	*Meles meles*	Protection of Badgers Act (1992)
Red squirrel	*Sciurus vulgaris*	UK BAP Priority Species
Otter	*Lutra lutra*	EPS, UK BAP Priority Species
Hedgehog	*Erinaceus europaeus*	
Black rat	*Rattus rattus*	Scottish Biodiversity list

3.3.6 Invasive Species

Records of Invasive Non-Native Species were received from NESBReC within 2km of the site (Table 3.8). These species are listed in Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) and as such it is considered an offence to release or cause to be released in to the wild any of these species.

Table 3.8. Records of Invasive Non-Native Species.

Species name	Scientific name
Japanese knotweed	*Fallopia japonica*
Rhododendron	*Rhododendron ponticum*
Giant hogweed	*Heracleum mantegazzianum*
Himalayan balsam	*Impatiens glandulifera*
Giant knotweed	*Fallopia sachalinensis*

[11] EPS or European Protected Species are afforded full protection under Schedule 2 the Conservation (Natural Habitats, &c.) 1994 (See **Appendix D** for detail).

3.3.7 Other Species

A number of records were also received from NESBReC for other species of note (Table 3.9).

Table 3.9. Records of Other Notable Species.

Species name	Scientific name	Designations
Bend-bearing blunt-brow spider	*Silometopus incurvatus*	UK BAP Priority Species
Brindled ochre (moth)	*Dasypolia temple*	UK BAP Priority Species
Crescent (moth)	*Celaena leucostigma*	UK BAP Priority Species
Dusky brocade (moth)	*Apamea remissa*	UK BAP Priority Species
Garden tiger (moth)	*Arctia caja*	UK BAP Priority Species
Ghost moth	*Hepialus humuli*	UK BAP Priority Species
Green-brindled crescent (moth)	*Allophyes oxycanthae*	UK BAP Priority Species
Grey dagger (moth)	*Acronicta psi*	UK BAP Priority Species
Rosy minor (moth)	*Litoligia literosa*	UK BAP Priority Species
Rosy rustic (moth)	*Hydraecia micacea*	UK BAP Priority Species
Small phoenix (moth)	*Ecliptoptera silaceata*	UK BAP Priority Species
Small square-spot (moth)	*Diarsia rubi*	UK BAP Priority Species
Sword-grass (moth)	*Xylena exsoleta*	UK BAP Priority Species

4 Survey Results

4.1 Habitats

All Phase 1 habitat categories identified during the Site visit on 7th May concur with those presented by AECOM (2009). Minor changes exist to the extent of semi-natural habitats and some of the buildings presented in the AECOM study have been demolished during intervening years.

All habitats and numbered target notes are shown in Figure 1 (Appendix A).

4.1.1 A1.1.2 – Broadleaved woodland - plantation

A small area of broad-leaved plantation woodland is present in an area adjacent to the retail park on Berryden Road which comprised trees planted for landscaping reasons (TN11). Species included wild cherry (*Prunus avium*), wych elm (*Ulmus glabra*), whitebeam (*Sorbus sp.*), and poplar (*Populus sp*.) with isolated Scots pine (*Pinus sylvestris*).

4.1.2 A3.1 Scattered broadleaved trees

Many immature and semi-mature broadleaved trees – particularly introduced species/varieties - are present across the Site which have been planted for amenity purposes and species include those noted above and also rowan (*Sorbus acuparia*), ash (*Fraxinus excelsior*), Norway maple (*Acer platanoides*), aspen (*Populus tremula*), alder species (*Alnus* spp.). Isolated pedunculate oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), apple (*Malus* spp.), common lime (*Tillia x europea*) are also present in the species mix.

4.1.3 A2.1 Scrub – Dense/continuous

Large swathes of the northern section of the site comprised brownfield areas with dense scrub regeneration inclusive of gorse (*Ulex sp*.) and broom (*Cytisus scoparius*) with birch (*Betula* sp.), and butterfly bush (*Buddleja davidii*) present.

4.1.4 C3.1 Other tall herb and fen – ruderal

Areas of tall ruderals were present on site dominated by rosebay willowherb (*Chamaenerion angustifolium*) and brambles (*Rubus sp*.).

4.1.5 J1.2 Cultivated/disturbed land – amenity grassland

Species-poor amenity grassland comprised much of the offline areas of the proposed Project and appeared to be heavily maintained by mowing and pesticide application (as evidenced by brown patches where weeds are presumed to have been present).

4.1.6 J1.3 Cultivated/disturbed land – ephemeral/short perennial

Species-poor short perennials were present in some disturbed areas and included bird's foot trefoil (*Lotus corniculatus*) and bluebells (*Hyacinthoides non-scripta*).

4.1.7 J1.4 – Introduced Shrub

Several areas of landscape planting were present on-site including areas of non-native shrubs, as well as areas where butterfly bush have become established.

4.1.8 J2.1.2 – Intact hedge – species-poor

Species-poor hedges planted mainly with privet (*Ligastrum ovalifolium*) for amenity/security reasons are present on Caroline Place, between Chestnut Row and Elm Place and Back Hilton

Road. Whilst these are not notable in terms of their biodiversity value they do offer some nesting habitat for common garden birds such as sparrow.

4.1.9 J3.6 – Buildings

The landscape within the vicinity of the Site comprises predominantly built landscape with residential and retail units all present. Only those buildings which would be directly affected by the proposals were assessed for their potential value to roosting bats.

4.1.10 J4 – Bare Ground

There are some parts of the site which are best characterised as bare ground as the buildings which used to stand there have since been demolished. Some weed species are present in these areas.

4.1.11 J5 – Other habitat

Large areas of the Site comprised bare ground and hard standing used for car parking and vehicle storage, as well as rubble piles from demolished buildings. These are indicated as blank areas in Figure 1.

4.2 Protected and Notable Species

4.2.1 Flora

No evidence of any notable plant species listed within Table 3.4 were observed during the survey. Owing to the highly modified and maintained nature of much of the Site, notable floral species are not anticipated to occur within the Site and are not considered further.

4.2.2 Badger

None of the habitats present on site appeared to provide habitats of a quality, extent, and connectivity as would provide opportunities for badger sett creation, foraging, or commuting. Additionally, no evidence of badger was noted during the survey and as a result, badger are not considered further.

4.2.3 Bats

Habitats within the study area provide some opportunities for bat foraging within the tree-lined, and edge habitats. Open habitats are not typically associated with common bat species though they do provide some opportunities and will be utilised by some bat species.

There were not many trees within the site which were large or mature enough to have developed the kinds of features which bats use for roosting. However, a number of trees were identified to have features suitable for roosting bats as noted in Table 4.1.

Table 4.1. Trees within the Site with identified bat roosting potential.

Target Note & Species	Description	BRP
TN4, Lime	Mature lime on Caroline Place with no features of interest to bats observed.	Negligible
TN5, Sycamore	Mature sycamore tree on Caroline Place with no features of interest to bats observed. Pollarded in the past.	Negligible
TN18, Sycamore (x2)	Two mature sycamore with ivy covering. Ivy covering is not very dense nor are the stems thick and so opportunities for bats are likely only very low.	Low
TN19, Sycamore	Sycamore with hole facing north (approx. 2m from ground) which can be fully assessed from ground level. No bats or signs of bats recorded.	Low

In addition, a number of buildings were assessed for their potential to support roosting bats as noted in Table 4.2.

Table 4.2. Buildings within the Site with identified bat roosting potential (BRP).

Target Note	Description	BRP
TN2	1 Caroline Place. Traditional granite house so no soffit boards. Slipped tiles and gaps under hanging slates as well as under plastering on dormer windows (x 3). Garage has soffits with gaps present. Rear of building not fully accessible but slates appeared to be in good shape.	Moderate
TN3	2 Caroline Place. Traditional granite building with two modern pebble-dashed extensions to rear of property. One extension is 1 storey with bitumen roof, second is pitched slate two-storey. Some gaps beneath guttering may lead to gaps under roof tiles, though very few gaps and slipped tiles.	Low
TN6	Building on Hutcheon Street. Single-storey structure with peeling roughcast and sloping slate roof.	Low
TN7	166 Hutcheon Street. Traditional granite building with two dormer windows. Hanging tiles and slates but nothing with obvious gaps. Single storey rendered extension.	Low
TN8	168-170 Hutcheon Street. Two-storey rendered building with loose barge boards to rear. Hanging tiles and damaged guttering offer likely only low roost potential.	Low
TN9	Partially used SSE building of granite and breeze block construction. Flat-roofed. Doors open and windows boarded up - though boards are peeling and present gaps. North-facing wall has a large number of gaps between brickwork and cracks in to which a single or few bats could gain entry. Unsafe for entry.	Moderate

Target Note	Description	BRP
TN12	Small single-storey building with metal grilled windows and asbestos sheet roof. Plastered ceiling visible through rickety doorway bolted on to Ashgrove road entrance. Gaps around all roof sheets and around door providing potential access points for bats.	Moderate
TN14	Wall with some gaps, likely superficial bat roost potential.	Negligible.
TN20	Two tiny single-storey, single-walled brick sheds. Open on the north-facing side with concrete slab roof. One structure completely overgrown with trees and vegetation.	Low
TN21	Ivy-covered wall.	Negligible
TN22	Fairly substantial wall with lots of deep gaps in mortar and cracks throughout.	Moderate
TN24	Small building of breeze block construction with metal vent at front, used as electricity generator or similar. Not surveyed in detail but superficially unsuitable.	Negligible

A single dusk back-tracking survey was undertaken on the 7th May wherein the surveys attended the site from sunset (20:50) until it was too dark to see bats flying or emerging (22:08). Surveys started from Caroline Place and walked northwards to Hutcheon Street, east down Hutcheson place and west back up, heading north to the abandoned building (TN9) and repeating this loop, walking slowly watching and listening for bats using Anabat Walkabout detectors. Temperatures during the survey were almost constant at around 7°C, with light breezes and some drizzle during the last 15 minutes of the survey. A single bat was seen foraging between 1 and 2 Caroline Place at the end of the survey (TN23). It was not picked up by the detector owing to it being outside the detection range of the detector and so was not able to be identified to species level. The behaviour (flight pattern) was consistent with it being a pipistrelle species (i.e. common or soprano pipistrelle). It is unclear whether the bat was roosting in any of the surveyed buildings or had commuted to this area to forage from outwith the Site. No other bats were observed during the survey.

4.2.4 Otter

The study area did not include any open waterbodies or watercourses. Gilcomston Burn and Powis Burn run as culverts beneath the study area and are not visible. There are no other watercourses within 250m of the study area. As a result, otters are not considered likely to be present within the Site and are not considered further.

4.2.5 Birds

The bird population on site is typical of the range of habitats present on site, with a mosaic of amenity grassland, scrub, residential properties, and industry. The species noted during the survey are shown in Table 4.3.

Table 4.3. Bird species observed within the Site.

Species Name	Scientific Name	BoCC 4
Wood pigeon	*Columba palumbus*	
Lesser black-backed gull	*Larus fuscus*	Amber
Blackbird	*Turdus merula*	
Robin	*Erithacus rubecula*	
Song thrush	*Turdus philomelos*	Red

4.2.6 Herpetofauna

No open water bodies were noted within the study area and so breeding amphibians are not likely to occur. Additionally, the terrestrial habitats are highly modified and maintained amenity areas are unlikely to support any amphibian populations. As a result, amphibians are not considered further.

The habitats present on Site are highly maintained amenity areas and not of an extent or connectivity to semi-natural habitats that would promote the presence of reptile populations. Although there are areas of rough ground with piles of bricks and logs, these are present within areas which were clearly once built and as such do not present as likely reptile habitat. As a result, reptiles are not considered further.

4.2.7 Invasive Species

No invasive non-native species listed on Schedule 9 of the Wildlife & Countryside Act were noted during the May survey. However, several stands of the non-native butterfly bush (*Buddleja davidii*) were noted throughout residential areas, amenity areas, and rough grassland areas.

The presence of Japanese knotweed was noted by AECOM and a return visit by Sweco to the northern part of the site in June 2019 confirmed that Japanese knotweed is present on site however the extent of growth was seen to be very limited, restricted to three small infestations of one or a small number of plants (TN25, 26, 27). Dead stalks present in the vicinity of the knotweed patches may be indicative of historic knotweed infestations which have since been successfully treated or be indicative of rosebay willowherb (fireweed) which was not in flower at the time of the visit but which is prevalent in these areas. In any case, the distribution of the infestations is broadly similar to that which was reported by AECOM.

5 Ecological Recommendations

The biodiversity value of the study area is low in recognition of the urban nature of the site, the absence of semi-natural habitats (many of the tree species present are noted to be of introduced varieties) and the overall scarcity of green networks and other connectivity to sites of nature conservation value in Aberdeen. Added to this, the Berryden Road realignment Project is "on-line" for much of its length and the road improvements and soft landscaping would have negligible impacts on the biodiversity value of the site for much of its length.

The general principles of the development's effects on nature conservation are as follows:

- Clearance of vegetation including scrub, immature trees and other habitats resulting in loss of habitat for nesting birds and spread of invasive non-native plant species; and
- Demolition of buildings which bats may use for roosting – this would constitute an offence under UK legislation.

Impacts on the above features can be mitigated in part by the soft design and further comments on the potential for effects and mitigation measures are detailed here:

5.1 Designated Sites

As the proposed works on Site will predominantly be on highly maintained amenity areas, or areas of existing roadway and hard standing, they are unlikely to have any significant adverse effects beyond the Site scale. Additionally, without flowing water courses or semi-natural habitats to connect the Site to any designated or Ancient Woodland Inventory sites, and in recognition of the distance separating the Site from designated areas, it is unlikely that any pathways for effects exist.

5.2 Habitats

It is **recommended** that the loss of semi-natural habitats be minimised, and that where loss is incurred by the installation of the proposed Project, that areas of landtake be used to re-instate these habitats at a similar scale.

Additionally, it is **recommended** that any landscape planting regimes incorporate native species of wildflower and shrub which can promote the biodiversity of the Site. For example, the instatement of wildflower verges both reduce the requirement for regular maintenance throughout the year and increase the Site's potential for biodiversity; the adoption of wildflower and tree habitats adjacent to the proposed new road which function as a green corridor and wildlife habitat. In addition, there is an opportunity for biodiversity enhancements adjacent to the Powis Terrace attenuation basin and SuDS attenuation basin at Bob Cooney Court with provision of native hedgerow, damp-tolerant plants and trees where possible. In addition there is an opportunity for tree, shrub and grassland planting adjacent to the Project at the southern end which would tie in with the Kittybrewster Railway Line LNCS.

5.3 Protected and Notable Species

5.3.1 Bats

If works do not commence within 12 months of the survey reported within this document, it is a **mandatory requirement** that preliminary roost assessment surveys of trees and structures within the Site are repeated in order to identify any change to the presence and extent of roost features.

Following the repeat preliminary roost assessment survey, or if works are scheduled to commence within 12 months of this survey, it will be a **mandatory requirement** to undertake further survey and assessment work in accordance with the prevailing survey guidance which may include but not be limited to: Detailed internal/external surveys with the use of access equipment to enable an exhaustive search for bats, or evidence of bats, to be undertaken by a suitably licensed and experienced ecologist; and a suite of nocturnal surveys undertaken within the active period of April to October inclusive, and in suitable weather conditions.

It is a **mandatory requirement** that a licence from Scottish Natural Heritage (SNH) is granted for any trees or structures which would be destroyed or physically disturbed and which are identified to contain bat roosts. It is a **mandatory requirement** to comply fully with the conditions of any licence including the provision of any mitigation measures or other controls. Failure to acquire a licence for disturbance or destruction of a bat roost can result in significant legal recourse against a developer up to and inclusive of large fines and imprisonment. Where there is any doubt, a suitably qualified ecologist should be consulted for advice on how to proceed.

It is **recommended** that any lighting installed as part of the proposed Project should be done so in a way that is sympathetic to bats. Guidance on the use of sympathetic lighting to minimise disturbance to bats can be found on the BCT website[12].

It is **recommended** that all design proposals take in to account the likely presence of bats within the site and wider landscape. Enhancement measures for bats are limited in scope but could be included within the design (e.g. provision of a large-capacity and low-maintenance artificial bat boxes of a robust material such as woodcrete, which may be attached to adjacent trees or buildings within Council ownership or with landowner permission.

At the northern end of the Project to the rear of residential properties on Great Northern Road there is an opportunity to adopt a mix of native grasses and trees alongside the road to function as a green corridor which bats may use for foraging.

5.3.2 Birds

It is **recommended** that vegetation clearance should be undertaken outwith the breeding bird season (which is between 1st March and 31st August inclusive). If this is not possible then it is a **mandatory requirement** that a suitably qualified ecologist should be instructed to undertake a pre-clearance check of vegetation to be cleared and should be present to oversee vegetation clearance and advise on any nesting bird constraints. There is **no alternative** to delaying works if nesting birds are found, and this delay may be up to or in some instances exceeding 10 weeks.

It is **recommended** that the Site and surrounding area could be enhanced for breeding birds by the installation of bird boxes within retained trees or modified buildings (e.g. installation of swift boxes). Additionally, use of native shrub and floral species such as species-rich grassland in landscape planting would promote biodiversity for birds and other species.

5.3.3 Invasive Species

Three small stands of Japanese knotweed were confirmed in the northern part of the site in June 2019. Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to cause this species to spread in the wild and there are controls on the removal, transport and disposal of

[12] https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting

contaminated soils and plant material. Since this species is highly invasive in the absence of continued treatment it will spread and in the context of this Project it is **recommended** that a specialist contractor be commissioned to undertake an update survey and to commence treatment of these areas prior to any vegetation clearance being undertaken. INNS control may include spraying with glyphosate herbicide, and the removal of infected material from site as controlled/contaminated waste. Biosecurity measures including the removal of any potentially contaminated soils or viable plant material from site equipment and clothing must be adhered to in order to avoid inadvertent spread of this highly invasive species.

It is a **mandatory requirement** to ensure that the spread of INNS is controlled during works. Failure to do so can result in significant legal recourse against both a project and a contractor, up to and including large fines or imprisonment.

Appendix A – Figures

Figure 1: Phase 1 Habitat Survey

N

0 50 100 150 200 Metres

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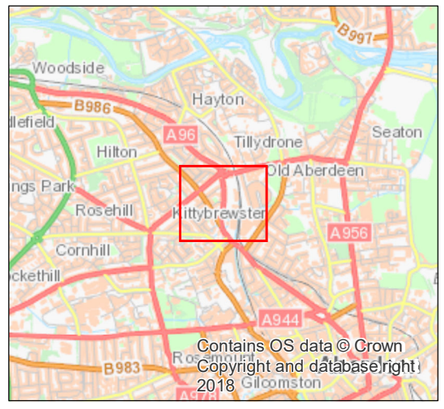
Legend

- Berryden Corridor Improvement Scheme
- 50m Buffer
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- A3.1 - Broadleaved Parkland/scattered trees
- C3.1 - Other tall herb and fern - ruderal
- J1.2 - Cultivated/disturbed land - amenity grassland
- J1.3 - Cultivated/disturbed land - ephemeral/short perennial
- J1.4 - Introduced shrub
- J2.1.2 - Intact hedge - species-poor
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- Target note



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
0	17/06/2019	-	LS	CH

SWECO
Sweco, 2nd Floor Quay 2, 139 Fountainbridge, Edinburgh, EH3 9QG
Tel: +44 (0) 131 550 6300

Client

Aberdeen City Council

Project

Berryden Corridor Improvements

Drawing Title

Figure 1
Phase 1 Habitat Survey
Page 1 of 3

Scale @ A3	1:2,500	DO NOT SCALE	
Project No.	121760	Status	Draft
BIM No.	-		

N

13

12

11

10

Construction Site

0 50 100 150 200 Metres

Legend

- Berryden Corridor Improvement Scheme
- 50m Buffer
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- A3.1 - Broadleaved Parkland/scattered trees
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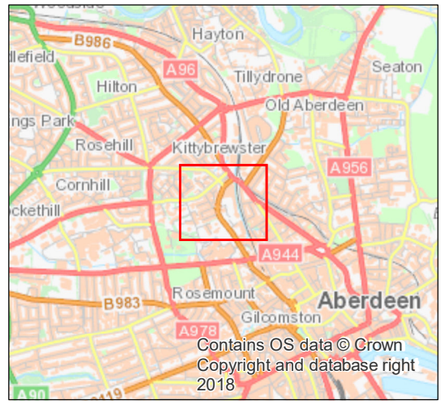
- J1.4 - Introduced shrub
- J2.1.2 - Intact hedge - species-poor
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- Target note



Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
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Client

Aberdeen City Council

Project

Berryden Corridor Improvements

Drawing Title

Figure 1
Phase 1 Habitat Survey
Page 2 of 3

Scale @ A3	1:2,500	DO NOT SCALE	
Project No.	121760	Status	Draft
BIM No.	-		

Legend

- Berryden Corridor Improvement Scheme
- 50m Buffer
- A1.1.2 - Broadleaved woodland - plantation
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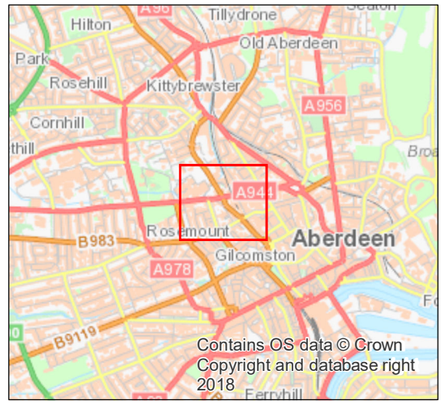

Rev.	Rev. Date	Drawing Suitability	Drawn	Appr'd
0	17/06/2019	-	LS	CH

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Project

Berryden Corridor Improvements

Drawing Title

Figure 1
Phase 1 Habitat Survey
Page 3 of 3

Scale @ A3	1:2,500	DO NOT SCALE	
Project No.	121760	Status	Draft
BIM No.	-		

Appendix B – Target Notes

Numbered target notes are a way of identifying notable features or habitats within the Site, or areas where a mosaic of habitat types exists, or to provide further detail on the potential presence of protected or notable species, in accordance with the Phase 1 habitat survey guidelines.

TN	Note
1	Scattered Norway maple and amenity grassland – see photo in **Appendix C**.
2	1 Caroline Place. Traditional granite house so no soffit boards. Slipped tiles and gaps under hanging slates as well as under plastering on dormer windows (x 3). Garage has soffits with gaps present. Rear of building not fully accessible but slates appeared to be in good shape. Moderate BRP.
3	2 Caroline Place. Traditional granite building with two modern pebble-dashed extensions to rear of property. One extension is 1 storey with bitumen roof, second is pitched slate two-storey. Some gaps beneath guttering may lead to gaps under roof tiles, though very few gaps and slipped tiles. Low BRP.
4	Common lime tree with no notable BRP.
5	Sycamore with no BRP.
6	Building on Hutcheon Street. Single storey structure with peeling roughcast and sloping slate roof. Low BRP.
7	166 Hutcheon Street. Traditional granite building with 2 dormer windows. Hanging tiles and slates but nothing with obvious gaps. Single storey rendered extension. Low BRP.
8	168-170 Hutcheon Street. Two storey rendered building with loose barge boards to rear. Hanging tiles and damaged guttering offer likely only low BRP.
9	Partially used SSE building of granite and breeze block construction. Flat-roofed/. Doors open and windows boarded up - though boards are peeling and present gaps. North-facing wall has a large number of gaps between brickwork and cracks in to which a single or few bats could gain entry. Moderate BRP. See photo in **Appendix C.**
10	Car park with many immature trees offering no BRP (primarily aspen; wild cherry and whitebeam also present).

TN	Note
11	Scattered trees (hybrid black poplar, wild cherry, wych elm) and shrubs on embankment.
12	Small single-storey building with metal grilled windows and asbestos sheet roof. Plastered ceiling visible through rickety doorway bolted on to Ashgrove Road entrance. Gaps around all roof sheets and around door providing potential access points for bats. Moderate BRP.
13	Scattered trees at the edge of large amenity grassland area; these are primarily rowan, ash and Norway maple.
14	Wall with some gaps, likely superficial BRP.
15	Large Lawson cypress trees, also Norway maple, rowan and whitebeam present.
16	Car Park. Line of immature trees (primarily Italian alder) present along eastern edge.
17	Rough area where a building once stood with raspberry, elder, gorse, *allium* sp, honeysuckle, buddleia, dandelion, brambles, dock and occasional small trees (silver lime, ash, whitebeam, rowan) present.
18	Two ivy-clad mature sycamore trees. Ivy is not especially dense nor are the stems thick and so bat roosting potential is regarded as very low. Other trees also present (see TN17) but these are immature and have no notable BRP.
19	Sycamore with a hole at 2m north facing. Low BRP and possible to survey from ground level. Other trees including Leyland cypress, Norway maple, whitebeam, goat willow and rowan also present.
20	Two tiny single-storey, single-walled brick sheds. Open on the north-facing side with concrete slab roof. One structure completely overgrown with trees and vegetation. Low BRP.
21	Ivy-covered wall.

TN	Note
22	Fairly substantial wall with lots of gaps in mortar and cracks throughout. Likely offering moderate BRP. See photo in **Appendix C.**
23	Single bat seen foraging between buildings here - not picked up by detector so species unknown.
24	Small building in the grounds of Cornhill Hospital assessed as having negligible BRP.
25	Small stand of Japanese knotweed adjacent to the wall at the back of the compound. One or two plants in leaf at the time of survey.
26	Small stand of Japanese knotweed outside the gate of the compound. 4 small plants visible where shoots have been able to get enough light through the brambles.
27	Single large stem of Japanese knotweed on embankment immediately opposite Police station entrance.

Appendix C – Photographs

TN	Description	Image
1	Scattered Norway maple within amenity grassland.	
9	Disused building with moderate BRP.	
n/a	Amenity Grassland and built infrastructure with some scattered trees.	

TN	Description	Image
n/a	Rough ground with dense, continuous scrub near police station.	
22	Wall with gaps in mortar providing moderate bat roosting potential.	

TN	Description	Image
26	Japanese knotweed stand outside the compound area	

Appendix D – Legislation

Bern Convention (1982)

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the EC Birds Directive (1979) and the EC Habitats Directive (1992). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985, Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the Habitats Directive is transposed into national law via the Conservation of Habitats and Species (Amendment) Regulations 2012 in England, and Wales, and via the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland. In Scotland the Habitats Directive is transposed by The Conservation (Natural Habitats &c.) Regulations 1994, see below for details.

Birds Directive

The EC Directive on the Conservation of Wild Birds (791409/EEC) or 'Birds Directive' was introduced to achieve favourable conservation status of all wild bird species across their

distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

The Conservation (Natural Habitats, &c.) Regulations (1994) as amended in Scotland

The Habitats Regulations 1994 (as amended in Scotland) implement the species protection requirements of the European Directive 92/43/EEC on the conservation of natural habitats (the Habitats Directive) in Scotland on land and inshore waters (0-12 nautical miles). Following a European Court of Justice ruling against the UK Member State in 2005, there have been several amendments to the Regulations which apply only to Scotland (made in 2004, 2007, 2008(a) and 2008(b)).

This regulation makes it an offence to deliberately or recklessly disturb European protected Species. Their places of shelter are fully protected, and it is an offence to damage, destroy or obstruct access to or otherwise deny the animal use of a breeding site or resting place, whether deliberate or not. It is also an offence to disturb in a manner that is likely to significantly affect the local distribution or abundance of the species; impair its ability to survive, breed or reproduce or rear its young.

Wildlife and Countryside Act (1981) and Nature Conservation (Scotland) Act (2004)

The Wildlife and Countryside Act (1981) is the main piece of legislation pertaining to biodiversity in the UK and forms the basis for most of the other wildlife and biodiversity legislation that has come into being over recent years. In Scotland, it was updated in 2004 by the Nature Conservation (Scotland) Act. The W&C Act makes it an offence to intentionally:

- kill, injure, or take any wild animal or bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- take or destroy an egg of any wild bird;

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection by a wild animal;
- intentionally disturb animals occupying such places;
- The Act also prohibits certain methods of killing, injuring, or taking wild animals.

A provision is made within the Act for the granting of licences that allow above actions to be made legal in certain situations. Finally, the Act makes it an offence to intentionally:

- pick, uproot or destroy any wild plant listed in Schedule 8; or any seed or spore attached to any such wild plant unless authorised;
- uproot any wild plant not included in Schedule 8,
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Part 14 of the Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9.

The Nature Conservation (Scotland) Act (2004) strengthens the above legislation by including reckless" acts, which means that in Scotland, not knowing about the above is not a permissible defence for committing an illegal act. This Act also strengthens the designated sites legislation by enhancing the protection for SSSIs and puts a Biodiversity Duty on every public body.

Nature Conservation (Scotland) Act 2004

The Act places duties on public bodies in relation to the conservation of biodiversity, increases protection for SSSI, amends legislation on Nature Conservation Orders, provides for Land Management Orders for SSSIs and associated land, strengthens wildlife enforcement legislation, and requires the preparation of a Scottish Fossil Code and a Scottish Marine Wildlife Watching Code. It also amends the legislation for protected species, introducing new conditions to the 'incidental results of a lawful operation' defence for all wild birds and certain species of animal and plant.

The Act places a duty on every public body to further the conservation of biodiversity consistent with the proper exercise of their functions.

It also requires Scottish Ministers to designate one or more strategies for the conservation of biodiversity as the Scottish Biodiversity Strategy, and to publish lists of species of flora and fauna and habitats of principal importance.

Wildlife and Natural Environment (Scotland) Act 2011

This Act has brought in new provisions governing the introduction of non-native species in Scotland. Non-native species (those plants and animals which have found their way to a new habitat through human activity) can be harmful to our environment. Some non-native species may become invasive, damaging or displacing native species.

The Protection of Badgers Act (1992)

The Protection of Badgers Act 1992 (as amended by the Nature Conservation (Scotland) Act 2004) comprehensively protects badgers and their setts. Offences under the act include killing, injuring or taking a badger, or to damage, destroy or obstruct setts or to disturb badgers in a sett. Licences are available for specific purposes, including development, to allow some of these actions to be carried out legally.

Scottish Biodiversity List

The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The Scottish Biodiversity List was published in 2005 to satisfy the requirement under Section C Appendix C - Legislation 2(4) of The Nature Conservation (Scotland) Act 2004.

The purpose of the list is to help public bodies carry out their Biodiversity Duty by identifying the species and habitats which are the highest priority for biodiversity conservation in Scotland. The Scottish Biodiversity List has been updated to take account of changes to the UKBAP priorities list.