



AEI Technical Appendix 8.1: Ecological Desk Study Report

Euchanhead Renewable Energy Development AEI

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Basis of Report

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Acronyms and Abbreviations

AEI	Additional Environmental Information
AWI	Ancient Woodland Inventory
CC-BY	Creative Commons With Attribution Licence (Commercial Use)
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
GIS	Geographic Information System
INNS	Invasive Non-Native Species
IPA	Important Plant Areas
LNCS	Local Nature Conservation Sites
LNR	Local Nature Reserves
LWS	Local Wildlife Sites
MAGIC	Multi Agency Geographic Information for the Countryside
MWs	Megawatts
NBN	National Biodiversity Network
NGR	National Grid Reference
NNR	National Nature Reserves
OS	Ordnance Survey
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SPA	Special Protection Areas
SSSI	Site of Special Scientific Interest
SSRS	Saving Scotland's Red Squirrels
SWS	South West Scotland
SWSEIC	South West Scotland Environmental Information Centre
WCA	Wildlife and Countryside Act 1981
WCA1ii	Wildlife and Countryside Act 1981 (Schedule 1 Part 2)



1.0 Introduction

SLR Consulting Limited (SLR) was commissioned by ScottishPower Renewables UK Ltd (the Client) to undertake an updated ecological desk study for the proposed Eucharhead Windfarm development (the proposed Development) to inform the Additional Environmental Information (AEI) submission to the Scottish Government Energy Consent Unit as a result of alterations to the Site layout proposed in the original Environmental Impact Assessment (EIA) Report, dated October 2020.

This ecological desk study was completed in May 2025.

1.1 Site Description

The proposed Development (hereafter referred to as the Site) is situated approximately 9.3km southwest of Sanquhar, spanning across three woodland areas (Eucharhead, Polskeoch and Shinnelhead) within the Dumfries and Galloway Council administrative boundary.

The topography of the Site ranges from approximately 194m to 278m above ordnance datum. It is characterised by commercial coniferous plantations, upland moorland/heath and felled woodland zones. Afton Reservoir is located the west of the Site, and there are a number of watercourses (the Euchar Water, Polskeoch Burn, Shinnel Water, and tributaries thereof) draining from the Site which either conflux with the River Nith to the east or drain into the reservoir. An operational overhead electricity line (South West Scotland (SWS), Connections Project) passes through the Eucharhead forest block, connecting local renewable energy projects to a new substation at Glenglass, on the northeast the Site application boundary. Refer to **AEI Figure 3.1: Site Layout**.

1.2 Details of Proposed Development

The proposed Development comprises 21 wind turbines with associated works and infrastructure including: forestry works; crane hardstandings; access tracks; cabling; borrow pits; a temporary construction compound; and an energy storage facility. It is proposed that the maximum blade tip heights will be up to 230m. The proposed Development has potential to deliver over 100Megawatts (MWs) power, and over 30MWs of energy storage.

1.3 Desk Study Scope

This desk study is designed to update the ecological data of the Site post 2020 planning submission, including data for protected and notable (e.g. rare or invasive), species and designated sites nearby. This was up to 10km for statutory designated sites and bats (and birds, 5km for non-statutory designated sites and up to 2km for other protected/notable species. The desk study summarises the results of commercially available data obtained from the South West Scotland Environmental Information Centre (SWSEIC), NBN Atlas¹ (using CC-BY records only for commercial context) and the Multi Agency Geographic Information for the Countryside (MAGIC)² online GIS tool.

¹ National Biodiversity Network (nbn.org.uk)

² <https://magic.defra.gov.uk/>



2.0 Methodology

2.1 Designated Sites

Information relating to statutory designated nature conservation sites, designated primarily for their ecological features (including avian), in the area surrounding the Site up to 10km was obtained from SWSEIC, MAGIC² and the NatureScot Sitelink website³.

Information relating to non-statutory designated sites within 5km was also acquired from the SWSEIC. Designated sites of relevance to this desk study report are summarised below.

Statutory:

- Ramsar sites;
- Special Areas of Conservation (SACs);
- Special Protected Areas (SPAs);
- National Nature Reserves (NNRs);
- Sites of Special Scientific Interest (SSSIs); and
- Locally designated sites such as Local Nature Reserves (LNRs)

Non-Statutory:

- RSPB and Wildlife Trust Reserves; and
- Local Wildlife Sites (LWS) and Local Nature Conservation Sites (LNCS)⁴

2.2 Carbon and Peatland Map

A search for the presence of carbon-rich soils, deep peat, and priority peatland habitat was made using NatureScot's Carbon and Peatland Map 2016⁵.

2.3 Ancient Woodland

Records of ancient woodlands listed on the Ancient Woodland Inventory (AWI) were searched for using the NatureScot interactive ancient woodland inventory map⁶ within 2km of the Site application boundary.

2.4 Important Plant Areas

Records of Important Plant Areas (IPA) were searched for using the Plantlife interactive map for the UK⁷. An area of up to 5km from the Site application boundary was searched.

2.5 Protected and Notable species

Desk study data were acquired for protected and notable species from the following sources:

- SLR Consulting Limited 2019 ecology desk study report⁸
- SWSEIC 2025;

³ <https://sitelink.nature.scot/home>

⁴ Local Nature Conservation Sites - Scotland - Local Nature Conservation Sites - Spatial Hub Scotland

⁵ Scotland's Soils - soil maps (environment.gov.scot)

⁶ NatureScot (n.d.). *Ancient Woodland Inventory*. [online] opendata.nature.scot. Available at: <https://opendata.nature.scot/datasets/ancient-woodland-inventory/explore> [Accessed 03 April 2025].

⁷ Plantlife (2024) Important Plant Areas UK [online]. Available at: <https://www.plantlife.org.uk/protecting-plants-fungi/important-plant-areas/#uk-important-plant-areas>

⁸ SLR Consulting Limited (2020) Ecology Desk Study Report. Eucharhead Wind Farm. ScottishPower Renewables.



- Saving Scotland's Red Squirrels⁹ (SSRS);
- NBN Atlas¹⁰ (commercial records (CC-BY) only); and
- NatureScot³.

Data from the following wind farm developments and connection projects surrounding the Site were used;

- Whiteside Hill Wind Farm¹¹
- Afton Wind Farm¹²
- Lorg Wind Farm¹³
- Sanquhar II Community Wind Farm¹⁴
- South West Scotland Renewables Connection Project¹⁵
- Eucharhead Wind Farm¹⁶

Searches for protected and notable species data were limited to:

- Data from within the last 15 years (2010-2025); and
- From within 2km of the Site application boundary for all species, extended to 10km for bat and bird species.

2.6 Invasive Non-Native Species

Planning documents of sites (if any) within 2km were searched for any records of Invasive Non-Native Species (INNS). Recent records (if any) were obtained from SWSEIC.

2.7 Other Species Records

On a five-yearly basis, the British Deer Society undertake the Deer Distribution Survey¹⁷ whereby the distribution of all six species of deer (Chinese water deer *Hydropotes inermis*, sika deer *Cervus nippon*, red deer *Cervus elaphus*, roe deer *Capreolus capreolus*, muntjac deer *Muntiacus* and fallow deer *Dama dama*) across Britain and Northern Ireland is mapped to provide indicative distribution data by 10km². The purpose of the survey is to monitor and record changes to deer distribution and range across the UK. This data provides an indication of deer species likely present within the Site application boundary.

2.8 Nomenclature

For ease of understanding for most readers common (vernacular) names for species are used within the main body of the report (unless a species has no common name). Scientific names are provided on first mention within the main body of the report.

⁹ Saving Scotland's Red Squirrels. (2024). Sightings. [online] Available at: [Saving Scotland's Red Squirrels – Transforming hope for Scotland's red squirrels](#) [Accessed 03 April 2025].

¹⁰ National Biodiversity Network (nbn.org.uk)

¹¹ SSE. 2015. Construction Environmental management Plan (CEMP) and Construction Method Statement: Whiteside Hill Wind Farm (Project Ref. LN000048)

¹² E.ON. 2004. Afton Wind Farm Proposal: Environmental Statement: non-technical summary:

¹³ Amec. 2015. Lorg Wind Farm: Environmental Statement. Volume 1: Main report

¹⁴ Community Wind. 2019. Sanquhar II Community Wind Farm: EIA Report

¹⁵ SPEN. 2007. South West Scotland Renewables Connection Project Environmental Statement: http://swsproject.com/SWS_ES.php

¹⁶ ARCUS. 2013. Protected species survey overview: Eucharhead Wind Farm.

¹⁷ The British Deer Society (n.d.). Deer Distribution Survey. [online] The British Deer Society. Available at: <https://bds.org.uk/science-research/deer-surveys/deer-distribution-survey/> [Accessed 03 April 2025].



2.9 Limitations

No obvious limitations were encountered whilst carrying out the desk study. However, it should be noted that absence of a species from this desk study does not necessarily preclude it from being present on Site.

3.0 Results

3.1 Designated Sites

3.1.1 Statutory Designated Sites

An online search using NatureScot² and data from SWSEIC included records of statutory designated sites including five SSSIs, one SAC and one SPA within 10km of the Site application boundary (Refer to **AEI Figure 8.1.1**).

Table 3-1: Statutory designated sites within 10km

Site Name & Designation	Approximate distance and direction from Site (km)	Qualifying Feature(s) of Interest
Muirkirk Uplands SSSI	2.8, North	<ul style="list-style-type: none"> Blanket Bog; and Breeding bird assemblage <ul style="list-style-type: none"> Short eared owl <i>Asio flammeus</i> Hen harrier <i>Circus cyaneus</i>
Back Wood SSSI	9.9, East	<ul style="list-style-type: none"> Upland oak woodland
Mennoch Water SSSI	8.4, East	<ul style="list-style-type: none"> Fen meadow; and Upland oak woodland
Chanlockfoot SSSI	7.2, Southeast	<ul style="list-style-type: none"> Upland mixed ash woodland
Stenhouse Wood SSSI	8.8, Southeast	<ul style="list-style-type: none"> Upland mixed ash woodland
Muirkirk and North Lowther Uplands SPA	2.8, North	<ul style="list-style-type: none"> Breeding birds <ul style="list-style-type: none"> Golden plover <i>Pluvialis apricaria</i> Hen Harrier
Upper Nithsdale Woods SAC	8.1, East 7.1 Southeast 8.9 Southeast	<ul style="list-style-type: none"> Mixed woodland on base-rich soils associated with rocky slopes



3.1.2 Non-Statutory Designated Sites

Eight LWS were identified within 5km of the Site, of which is summarised in **Table 3-2** (Refer to **Figure 8.1.2**). No further non-statutory designated sites were identified within a 2km radius of the Site application boundary.

Table 3-2: Non-statutory designated sites within 5km

Site Name	Designation	Interest features
Glenmaddie	LWS	Glenmaddie Wood (c. 22ha) is located 3km south-west of Sanquhar, on either side of the Euchar Water, and consists of areas of broadleaved woodland, scrub, acidic grassland, stands of bracken <i>Pteridium aquilinum</i> and riparian habitats. The river is fast-flowing and the channel rocky with species like goldenrod <i>Solidago virgaurea</i> growing on the rocks. Downy birch <i>Betula pubescens</i> , ash <i>Fraxinus excelsior</i> , alder <i>Alnus glutinosa</i> , grey willow <i>Salix cinerea</i> and hazel <i>Corylus avellana</i> are the dominant species while there is a typical woodland flora in the field and ground layers with species such as wood sorrel <i>Oxalis acetosella</i> and common dog-violet <i>Viola riviniana</i> . Locally uncommon species, including oak fern <i>Gymnocarpium dryopteris</i> and giant fescue <i>Schedonorus giganteus</i> also occur.
Garclaugh Burn	LWS	The site consists of a watercourse surrounded by scrub and woodland (dominated by birch, alder and oak), which in turn is surrounded by grassland. A proportion of the site overlaps with woodland listed on the Ancient Woodland Land (AWI).
Afton Uplands	LWS	The site comprises of large, open areas of heathland and bog.
Garepool Burn	LWS	The site consists of a watercourse surrounded by scrub and woodland, which in turn is surrounded by grassland. A proportion of the site overlaps with woodland listed on the Ancient Woodland Land (AWI).
Nith Floodplain	LWS	The site comprises the River Nith, and small sections of Muirfoot Burn, Polquhirter Burn, Burnfoot Burn, Linn Burn, Garclaugh Burn, Garepool Burn, Merkland Burn, Mid Burn and Duncan's Burn which are tributaries of the River Nith, and surrounding grasslands and scattered trees. Retains areas subject to periodic flooding. Provides a good habitat for wildfowl and breeding waders.
Mansfield Burn	LWS	The site consists of a watercourse surrounded by scrub and woodland, which in turn is surrounded by grassland. A proportion of the site overlaps with woodland listed on the Ancient Woodland Land (AWI).



Site Name	Designation	Interest features
Merkland Wood	LWS	The site is entirely wooded and separated from the Nith Floodplain LNCS. A proportion of the site (small areas within the northwest and middle sections) overlaps with woodland listed on the Ancient Woodland Inventory (AWI).
Corsencon Hill	LWS	This site comprises of large, open areas of heathland and bog.

3.2 Carbon and Peatland Map

According to the Carbon and Peatland Map⁵ the majority of the Site consists of 'Class 3' and 'Class 5' peatland, which suggests some areas of deep peat (Class 3), or no peatland habitat (Class 5) were present. Additionally, patches of 'Class 1', 'Class 2' and 'Class 4' are present within the Site application boundary, suggesting there are areas of nationally important carbon-rich soils with high conservation value and restoration potential (Class 1 & 2) or small areas unlikely to be associated with peatland habitat (Class 4).

3.3 Ancient Woodland

A search of the AWI⁶ returned 16 areas of ancient woodland within 2km of the Site. Three sites were of long-established woodland plantation origin and the remaining were of ancient (semi natural) origin. These are detailed in **Table 3-3** below.

Table 3-3: Ancient Woodland within 2km

Name	Plantation Origin
No name	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
Cairn Bank	Ancient (of semi-natural origin)
No name	Ancient (of semi-natural origin)
Bolt Wood	Ancient (of semi-natural origin)
Glenmaddie Wood	Ancient (of semi-natural origin)
Garloch Burn	Ancient (of semi-natural origin)
Burton Burn	Ancient (of semi-natural origin)
March Burn	Ancient (of semi-natural origin)
Upper Linn	Long-Established (of plantation origin)



Name	Plantation Origin
Garepool Burn	Long-Established (of plantation origin)
Mounthope	Long-Established (of plantation origin)

3.4 Important Plant Areas

No IPAs were identified within 5km from the Site application boundary.

3.5 Habitats

Habitats within the Site and surrounding area provided by SWSEIC are present within and 2km:

- Coniferous plantation
- Grass-heath
- Blanket mire (mostly heather)
- Acid grassland
- Neutral grassland/ rush pasture
- Open water
- Upland heath
- Wetland
- Scree, rock exposure

3.6 Protected and Notable Species

3.6.1 Terrestrial Mammals

3.6.1.1 Bats

A total of 1136 records of bats were provided by SWSEIC 2025 data search. As well as generic 'bat' species, the records included:

- Daubenton's bat *Myotis daubentoniid*
- Whiskered/brandt's bat *M. mystacinus/brandtii*
- Natterer's bat *M. nattereri*
- Leisler's bat *Nyctalus leisleri*
- Nyctalus species *Nyctalus sp.*
- Pipstrelle species *Pipistrellus sp.*
- Common pipistrelle *P. pipistrellus*
- Soprano pipistrelle *P. pygmaeus*
- Nathusius's pipistrelle *P. nathusii*
- Brown long-eared bat *Plecotus auritus*



3.6.1.2 Badgers

No records of badger *Meles meles* were provided by SWSEIC data search in 2025, however badger are noted in the 2019 desk study⁸ less than 2km from the Site boundary^{13, 14}. No CC-BY records were provided on NBN Atlas search.

3.6.1.3 Wildcat

No records of wildcat *Felis silvestris* were provided by SWSEIC 2019⁸ and 2025. No CC-BY recent were provided on NBN Atlas search.

3.6.1.4 Pine Marten

No records of pine marten *Martes martes* were provided by SWSEIC data search in 2025. No CC-BY records were provided on NBN Atlas search. However, pine marten were detailed in the 2019 desk study¹¹ to be within 2km of the Site application boundary, recorded in 2019^{16, 17}.

3.6.1.5 Red Squirrel

Using the SSRS database, one record of red squirrel *Sciurus vulgaris* was recorded within the Site application boundary in 2024. SWSEIC 2025 data search returned 54 records of red squirrel within 2km of the Site application boundary with the most recent record from 2023 located within the Site boundary (OS NGR NS 68600 02300). Additionally, red squirrel were detailed on the 2019 desk study⁸ recorded in 2017 to be within the Site application boundary^{15,16}.

3.6.1.6 Mountain Hare

Four records of brown hare *Lepus timidus* were provided by SWSEIC 2019⁸ and 2025 data search. SWSEIC 2025 search detailed the most recent record from 2020 located approximately 0.7km east from the Site application boundary (OS NGR NS 70600 02900). No CC-BY records were provided on NBN Atlas search.

3.6.1.7 European Hedgehog

No records of European hedgehog *Erinaceus europaeus* were returned within the last 15 years using data provided by SWSEIC 2019⁸ and 2025. No CC-BY records were provided on NBN Atlas search.

3.6.2 Riparian Mammals

3.6.2.1 Otter

One record of otter *Lutra lutra* was returned by the SWSEIC 2025 data search, recorded in 2014 located approximately 1.8km from the Site application boundary (OS NGR NS 66000 08000). No additional records were provided on NBN Atlas within the search period. Additionally, 2019 desk study⁸ detailed otter were located within the Site application boundary in 2013 using adjacent windfarm planning application data^{11,12,13,14,15,16}.

3.6.2.2 Water Vole

No records of water vole *Arvicola amphibius* were provided by SWSEIC from the 2025 data request. No CC-BY records were provided on NBN Atlas search. However, water vole are detailed in the 2019 desk study⁸ to be within the site boundary, though recorded in 2007¹⁵.



3.6.2.3 Beaver

No records of European beaver *Castor fiber* were provided by SWSEIC. No CC-BY records were provided on NBN Atlas search. Please note beaver are newly introduced across the UK, thus, it is unlikely presence of beaver within the Site are known and no recorded are provided.

3.6.3 Invasive Non-Native Mammals

3.6.3.1 Eastern Grey Squirrel

2019 desk study⁸ detailed one record and SWSEIC 2025 search returned 48 records of eastern grey squirrel *Sciurus carolinensis* between 2011 and 2019, which encompass the Site application boundary. They are an invasive non-native species and has no protection under the Wildlife and Countryside Act (1981) (WCA).

3.6.4 Amphibians and Reptiles

The 2025 data search using SWSEIC returned 15 records of the common frog *Rana temporaria* and two reptile records including one common lizard *Zootoca vivipara* and one adder *Vipera berus*. No CC-BY records were provided on NBN Atlas search. Previous data searched for in 2019 recorded common lizard and adder^{8,14,18}, though detailed Slow-worm *Anguis fragilis* within 2km of the Site⁸ which was recorded more than 15 years ago.

3.6.5 Fish

Two species records for bony fish (*Actinopterygii*) were return in the 2025 SWSEIC data search, which include one Atlantic salmon *Salmo salar* record and one grayling *Thymallus thymallus* record, both dated in 2010 located along the River Nith.

3.6.6 Invertebrate and Plants

The data search using SWSEIC for invertebrates returned 67 records. The following species groups were recorded;

- seven beetles (*Coleoptera*)
- one bumble bee (*Hymenoptera*)
- two butterflies
- nine moths
- four spiders (*Araneae*)

3.6.7 Plants

The SWSEIC data search for plant species (trees, flowering plants, mosses, ferns, lichens) returned the following;

- Four juniper *Juniperus communis* records
- 41 flower plant records
- Five moss records (including club moss)
- One oak fern *Gymnocarpium Dryopteris* record

No records were returned from SWSEIC lichens or INNS.

3.6.8 Other Species Records

The results of the 2023 Deer Distribution Survey indicate the presence of the following species in the approximate area surrounding the Site:

¹⁸ MacArther Green.2012. Echanhead Windfarm: Extended Phase 1 Habitat Survey Report



- Red deer (recorded in 2007, 2011, 2016 and 2023)
- Roe deer (recorded in 2007, 2011, 2016, and 2023)

In addition, SWSEIC provided three records of roe deer, with the most recent record dating to 2023, located 2.2km northwest of the Site.

3.6.9 Birds

A total of 545 records of bird species were provided by SWSEIC. 54 species were listed as notable (BAmb/ Bred) and three species are protected under Wildlife and Countryside Act 1981 (Schedule 1 Part 2) (as amended) (WCA1ii). The following WCA1ii protected species include;

- Barn owl *Tyto alba*
- Crossbill *Loxia curvirostra*
- Greylag goose *Anser anser*





Figures

AEI Technical Appendix 8.1: Ecological Desk Study Report

Figure 8.1.1 Statutory Designated Sites within 10km

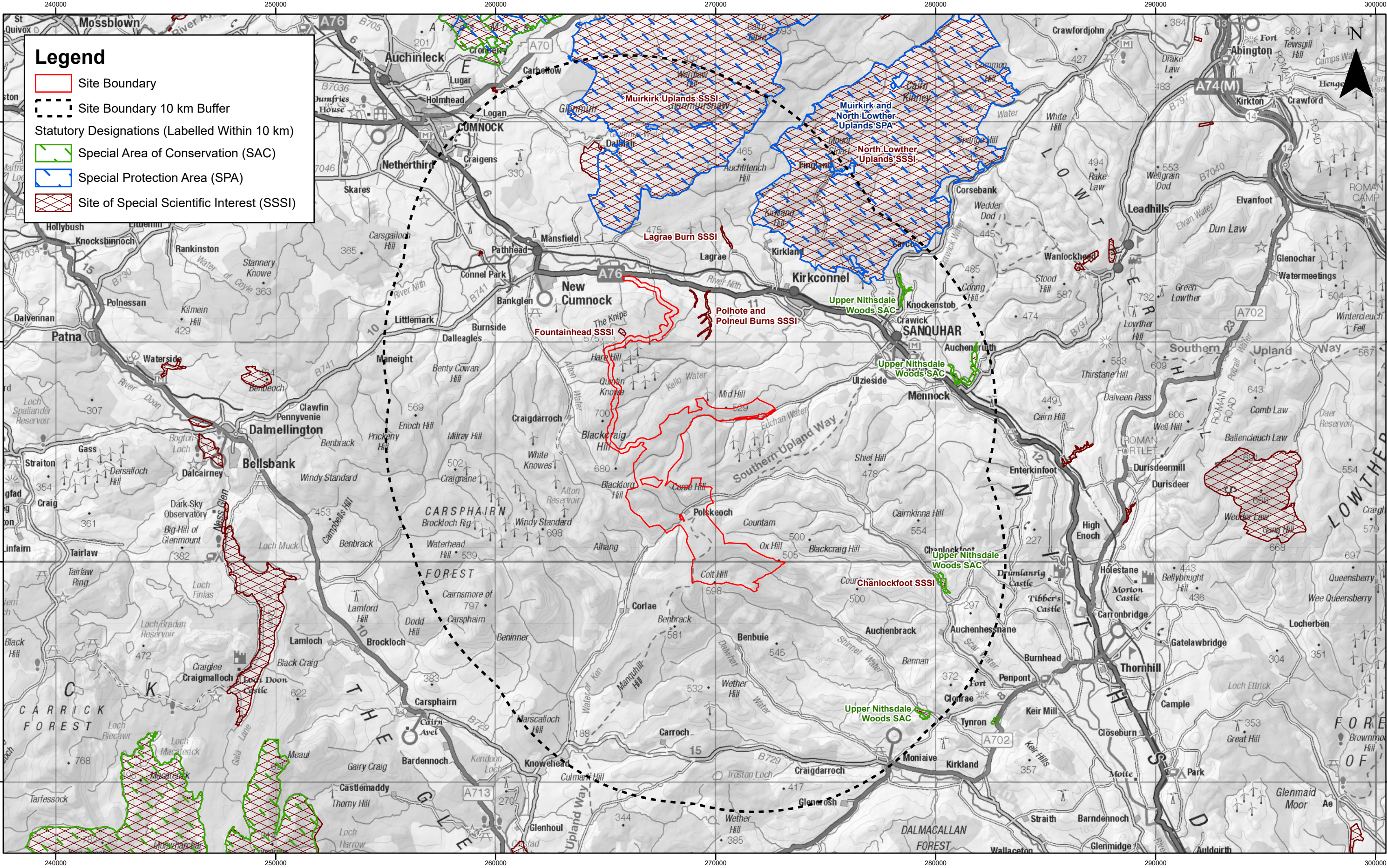
Figure 8.1.2 Non-statutory Designated Site within 5km

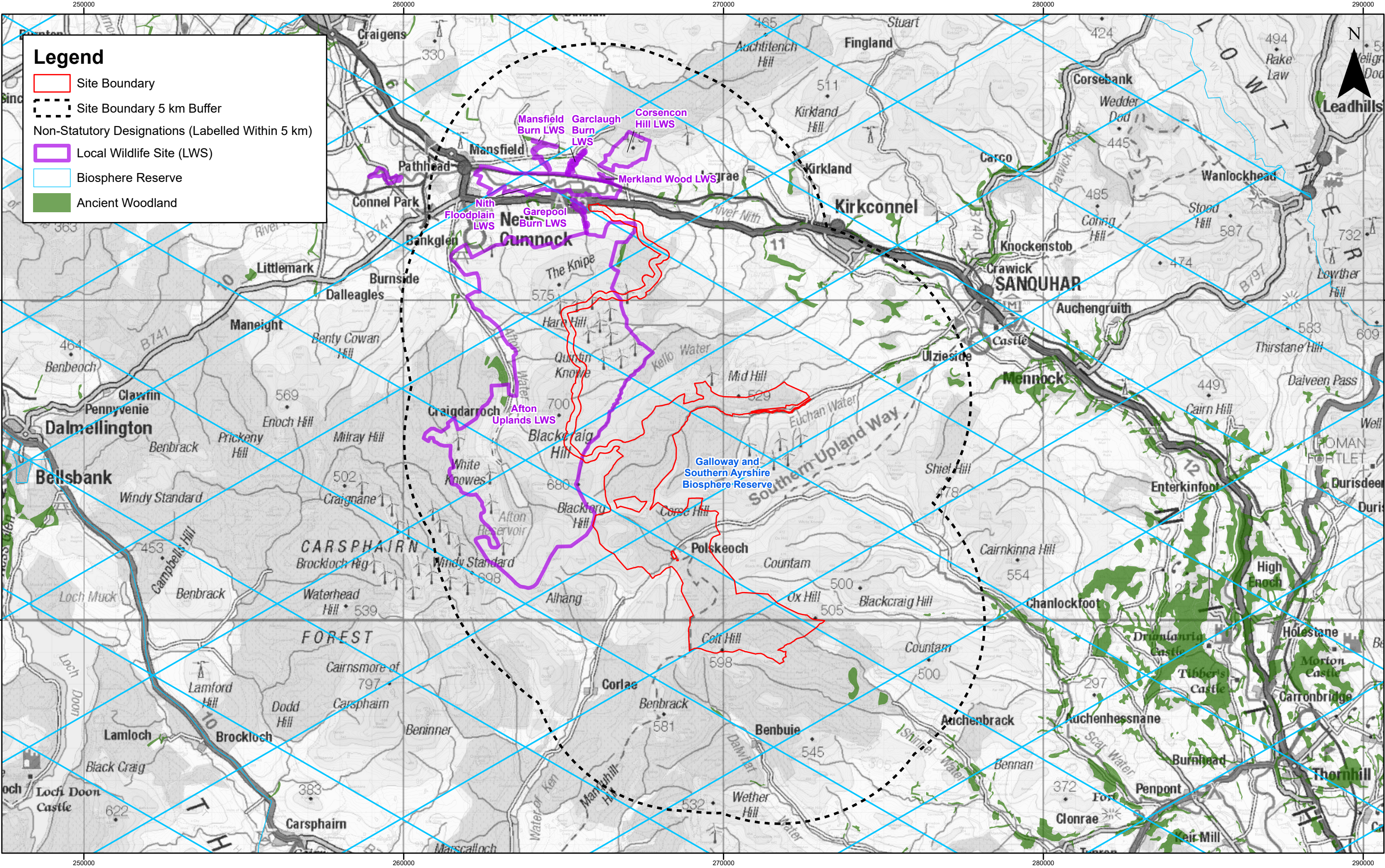
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Appendix A Protected and Notable Species Records

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Table B-1: Protected and notable species records from SWSEIC & 2019 desk study report within 2km (and 10km for bats & birds)

Species	Most Recent Record	Protection ¹⁹	Data Source
Mammals			
otter <i>Lutra lutra</i>	2014	Bern2, CITESA, HSD2p, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, AYR-LBAP, DGLBAP09, ScotBL, UKBAP	SWSEIC, Arcus, SPEN, E.ON, SSE, Community Wind, Amec
Eurasian red squirrel <i>Sciurus vulgaris</i>	09/10/2023	CL E SB ST W(K) Lothian Rarity (L) Bern3, RLGB.EN, ScotBL, UKBAP, WCA5/9.1k/I, WCA5/9.1t, WCA5/9.4.a, WCA5/9.4b, WCA5/9.4c	SWSEIC, NBN Atlas, SSRS
mountain hare <i>Lepus timidus</i>	09/12/2020	Bern3, HSD5, HabRegs4, DGLBAP09, ScotBL, UKBAP	SWSEIC
badger <i>Meles meles</i>	2019	Bern-A3, Protection_of_Badgers_Act_1992	Community Wind 2019, Amec 2015
pine marten <i>Martes martes</i>	2019	WCA5/9.1k/I, WCA5/9.1t, WCA5/9.2, WCA5/9.4.a, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, AYR-LBAP, DGLBAP09, ScotBL, UKBAP	Community Wind 2019
Bats (within 10km)			
brown long-eared bat <i>Plecotus auritus</i>	31/07/2018	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, DGLBAP09, ScotBL, UKBAP	SWSEIC
common pipistrelle <i>Pipistrellus pipistrellus</i>	18/05/2024	CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5 ^a , AYR-LBAP, DGLBAP09	SWSEIC
Leisler's bat <i>Nyctalus leisleri</i>	14/09/2016	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, DGLBAP09	SWSEIC
myotis bat species <i>Myotis</i>	20/09/2020	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD2p,	SWSEIC

¹⁹ A full list of abbreviations used in this column is provided in Table B2.



Species	Most Recent Record	Protection ¹⁹	Data Source
		HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a	
Nathusius's pipistrelle <i>Pipistrellus nathusii</i>	13/09/2016	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5 ^a , ScotBL	SWSEIC
soprano pipistrelle <i>Pipistrellus pygmaeus</i>	14/07/2021	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5 ^a , AYR-LBAP, DGLBAP09, ScotBL, UKBAP	SWSEIC
Daubenton's bat <i>Myotis daubentonii</i>	12/08/2016	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, DGLBAP09, ScotBL	SWSEIC
Natterer's bat <i>Myotis nattereri</i>	14/07/2021	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, DGLBAP09, ScotBL	SWSEIC
pipistrelle bat species <i>Pipistrellus</i>	22/09/2018	Bern2, Bern3, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a	SWSEIC
noctule bat <i>Nyctalus noctula</i>	13/09/2016	Bern2, CMS_A2, CMS_EUROBATS-A1, HSD4, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a, AYR-LBAP, DGLBAP09, ScotBL, UKBAP	SWSEIC
whiskered/Brandt's bat <i>Myotis mystacinus/ brandtii</i>	11/08/2016	CMS_A2, HabRegs2, WCA5/9.4b, WCA5/9.4c, WCA5/9.5a	SWSEIC
Amphibians & Reptiles			
common frog <i>Rana temporaria</i>	31/08/2024	Bern3, HSD5, WCA5/9.5a	SWSEIC
common lizard <i>Zootoca vivipara</i>	18/07/2022	Bern3, WCA5/9.1k/I, WCA5/9.5a, ScotBL, UKBAP	SWSEIC
adder <i>Vipera berus</i>	01/07/2020	Bern3, WCA5/9.1k/I, WCA5/9.5a, DGLBAP09, ScotBL, UKBAP	SWSEIC



Species	Most Recent Record	Protection ¹⁹	Data Source
Invertebrates			
insect - beetle (Coleoptera) <i>Oreodytes davisii</i>	2023	RLGB.Lr(NT)	SWSEIC
insect - beetle (Coleoptera) <i>Hydroporus ferrugineus</i>	2021	NS-excludes	SWSEIC
insect - beetle (Coleoptera) <i>Gyrinus minutus</i>	2021	NS-excludes	SWSEIC
insect - beetle (Coleoptera) <i>Laccobius ytenensis</i>	2021	Nb	SWSEIC
insect - beetle (Coleoptera) <i>Contacyphon kongsbergensis</i>	2017	NS-excludes	SWSEIC
spider (Araneae) <i>Diplocephalus protuberans</i>	2021	DGLBAP09, RLGB.VU	SWSEIC
spider (Araneae) <i>Hilaira nubigena</i>	2017	DGLBAP09, RLGB.VU	SWSEIC
cloud-living spider <i>Semljicola caliginosus</i>	2017	ScotBL, UKBAP, RLGB.EN	SWSEIC
small heath <i>Coenonympha pamphilus</i>	2022	ScotBL, UKBAP	SWSEIC
small pearl-bordered fritillary <i>Boloria selene</i>	2021	DGLBAP09, ScotBL, UKBAP	SWSEIC
heath grass-veneer <i>Crambus ericella</i>	2019	ScotBL, UKBAP	SWSEIC
haworth's minor <i>Celaena haworthii</i>	2010	ScotBL, UKBAP	SWSEIC
rosy rustic <i>Hydraecia micacea</i>	2010	ScotBL, UKBAP	SWSEIC
minor shoulder-knot <i>Brachylomia viminalis</i>	2010	ScotBL, UKBAP	SWSEIC



Species	Most Recent Record	Protection ¹⁹	Data Source
red carpet <i>Xanthorhoe decoloraria</i>	2010	ScotBL, UKBAP	SWSEIC
small square-spot <i>Diarsia rubi</i>	2010	ScotBL, UKBAP	SWSEIC
autumnal rustic <i>Eugnorisma glareosa</i>	2010	ScotBL, UKBAP	SWSEIC
heath rustic <i>Xestia agathina agathina</i>	2010	ScotBL, UKBAP	SWSEIC
anomalous <i>stilbia anomala</i>	2010	ScotBL, UKBAP	SWSEIC
bilberry bumblebee <i>Bombus monticola</i>	2010	ScotBL	SWSEIC
Birds			
barn owl <i>Tyto alba</i>	10/02/2015	Bern2, CITESA, WCA1i, DGLBAP09, ScotBL	SWSEIC
barnacle goose <i>Branta leucopsis</i>	26/01/2016	BD1, Bern2, CMS_A2, CMS_AEWA-A2, DGLBAP09, ScotBL	SWSEIC
bean goose <i>Anser fabialis/serrirostris</i>	18/11/2011	BD2.1, CMS_A2, CMS_AEWA-A2, ScotBL	SWSEIC
common sandpiper <i>Actitis hypoleucos</i>	30/06/2011	CMS_A2, CMS_AEWA-A2	SWSEIC
crossbill <i>Loxia curvirostra</i>	18/01/2020	Bern2, WCA1i	SWSEIC
curlew <i>Numenius arquata</i>	03/05/2018	BD2.2, CMS_A2, CMS_AEWA-A2, DGLBAP09, ScotBL, UKBAP	SWSEIC
dipper <i>Cinclus cinclus</i>	21/06/2019	Bern2	SWSEIC
greylag Goose <i>Anser anser</i>	18/01/2020	BD2.1, CMS_A2, CMS_AEWA-A2, WCA1ii	SWSEIC
jack snipe <i>Lymnocyrtus minimus</i>	25/11/2014	BD2.1, CMS_A2, CMS_AEWA-A2	SWSEIC
redstart <i>Phoenicurus phoenicurus</i>	21/06/2019	Bern2	SWSEIC
spotted flycatcher <i>Muscicapa striata</i>	18/07/2016	Bern2, CMS_A2, AYR-LBAP, DGLBAP09, ScotBL, UKBAP	SWSEIC
teal <i>Anas crecca</i>	27/10/2011	BD2.1, CITESC, CMS_A2, CMS_AEWA-A2	SWSEIC



Species	Most Recent Record	Protection ¹⁹	Data Source
tree pipit <i>Anthus trivialis</i>	19/06/2019	Bern2, ScotBL, UKBAP	SWSEIC
white-fronted goose <i>Anser albifrons</i>	07/12/2011	BD2.2, CMS_A2, CMS_AEWA-A2, DGLBAP09, ScotBL, UKBAP	SWSEIC
wigeon <i>Mareca penelope</i>	18/01/2020	BD2.1, CITESC, CMS_A2, CMS_AEWA-A2	SWSEIC
woodcock <i>Scolopax rusticola</i>	19/01/2015	BD2.1, CMS_A2, CMS_AEWA-A2, DGLBAP09, ScotBL	SWSEIC
Plants & Lichen			
juniper <i>Juniperus communis</i>	2012	VC72RPR, VC75RPR	SWSEIC
carline thistle <i>Carlina vulgaris</i>	2011	VC72RPR, VC75RPR	SWSEIC
mountain everlasting <i>Antennaria dioica</i>	2011	VC72RPR	SWSEIC
field scabious <i>Knautia arvensis</i>	2020	VC72RPR, VC75RPR	SWSEIC
spotted cat's-ear <i>Hypochaeris maculata</i>	2020	NR-excludes, RLGB.VU	SWSEIC
bog pimpernel <i>Anagallis tenella</i>	2020	VC75RPR	SWSEIC
northern bedstraw <i>Galium boreale</i>	2011	VC72RPR	SWSEIC
hedge bedstraw <i>Galium mollugo</i>	2011	VC72RPR	SWSEIC
water sedge <i>Carex aquatilis</i>	2014	VC72RPR	SWSEIC
hairy stonecrop <i>Sedum villosum</i>	2011	NS-excludes, RLGB.Lr(NT), VC72RPR, VC75RPR	SWSEIC
alpine clubmoss <i>Diphasiastrum alpinum</i>	2021	VC72RPR, VC75RPR	SWSEIC
Fungi			
purple moor grass rust <i>Puccinia molinae</i>	11/08/2020	ScotBL	SWSEIC
Invasive Non-Native Species			
Eastern grey squirrel <i>Sciurus carolinensis</i>	29/12/2019	WCA9/INV	SWSEIC



Table B-2: Abbreviation Key

Abbreviation	Full Designation	Region	Description
HabRegs2	The Conservation (Natural Habitats, &c.) Regulations 2010 (Schedule 2)	Nat Legislation	Schedule 2- European protected species of animals.
HabRegs4	The Conservation (Natural Habitats, &c.) Regulations 2010 (Schedule 4)	Nat Legislation	Schedule 4- Animals which may not be taken or killed in certain ways
HabRegs5	The Conservation (Natural Habitats, &c.) Regulations 2010 (Schedule 5)	Nat Legislation	Schedule 5- European protected species of plants.
WCA1i	Wildlife and Countryside Act 1981 (Schedule 1 Part 1)	Nat Legislation	Birds and their young, for which it is an offence to intentionally or recklessly disturb at, on or near an active nest. They are protected by special penalties at all times.
WCA1ii	Wildlife and Countryside Act 1981 (Schedule 1 Part 2)	Nat Legislation	Birds afforded special protection during the close season but which may be killed or taken outside this period. They are protected by special penalties during the close season.
WCA5/9.1k/l	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring))	Nat Legislation	Section 9.1. Animals which are protected from intentional killing or injuring.
WCA5/9.1t	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking))	Nat Legislation	Section 9.1 Animals which are protected from taking.



Abbreviation	Full Designation	Region	Description
WCA5/9.2	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2)	Nat Legislation	Section 9.2 Animals which are protected from being possessed or controlled (live or dead).
WCA5/9.4.a	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4, subdivision a)	Nat Legislation	Section 9.4 subdivision a - Animals which are protected from intentional damage or destruction to any structure or place used for shelter or protection.
WCA5/9.4A*	Wildlife and Countryside Act 1981 (Schedule 5)	Nat Legislation	Ceteaca/basking shark that are not allowed to be intentionally or recklessly disturbed.
WCA5/9.4b	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b)	Nat Legislation	Section 9.4 Animals which are protected from intentional disturbance while occupying a structure or place used for shelter or protection.
WCA5/9.4c	Wildlife and Countryside Act 1981 (Schedule 5)	Nat Legislation	Animals which are protected from their access to any structure or place which they use for shelter or protection being obstructed.
WCA5/9.5a	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a)	Nat Legislation	Section 9.5 Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.



Abbreviation	Full Designation	Region	Description
WCA5/9.5b	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)	Nat Legislation	Section 9.5 Animals which are protected from being published or advertised as being for sale.
WCA8	Wildlife and Countryside Act 1981 (Schedule 8)	Nat Legislation	Plants which are protected from intentional picking, uprooting or destruction (Section 13 1a); selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); advertising (any of these) fo
AYR-LBAP	Ayrshire Local Biodiversity Action Plan key species	Local	
DGLBAP09	Dumfries and Galloway Local Biodiversity Action Plan Priority Species	Local	Species which have been identified as Priority Species in the Dumfries and Galloway Local Biodiversity Action Plan due to their i) National importance, ii) Local importance in a national context, iii) Local rarity, iv) Local decline or v) Local distinctive
ScotBL	Scottish Biodiversity List of species of principal importance for biodiversity conservation	Nat Legislation	The Scottish Biodiversity List is a list of flora, fauna and habitats considered by the Scottish Ministers to be of principal importance for biodiversity conservation. The development of the



Abbreviation	Full Designation	Region	Description
			list has been a collaborative effort involving a great many stakeholders
UKBAP	UK Biodiversity Action Plan priority species	UK BAP	The UK List of Priority Species and Habitats contains 1150 species and 65 habitats that have been listed as priorities for conservation action under the UK Biodiversity Action Plan (UK BAP).
BAmb	Bird Population Status - amber	Red Data List	Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeder
BRed	Bird Population Status - red	Red Data List	Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.
N	Nationally Notable	Other rare/scarce	Species which are estimated to occur within the range of



Abbreviation	Full Designation	Region	Description
			16 to 100 10km squares. (subdivision into Notable A and Notable B is not always possible because there may be insufficient information available). Superseded by Nationally Scarce, and therefore no I
Na	Nationally Notable A	Other rare/scarce	Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties. Superseded by
Nb	Nationally Notable B	Other rare/scarce	Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties. Super
NR-excludes	Nationally Rare. Excludes Red Listed taxa	Other rare/scarce	Nationally Rare - Occurring in 15 or fewer hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria.



Abbreviation	Full Designation	Region	Description
NRMar	Nationally rare marine species	Other rare/scarce	Species which occur in eight or fewer 10km X 10km grid squares containing sea (or water of marine saline influence) within the three mile territorial limit.
NS-excludes	Nationally Scarce. Excludes Red Listed taxa	Other rare/scarce	Nationally Scarce - Occurring in 16-100 hectads in Great Britain. Excludes rare species qualifying under the main IUCN criteria
NSMar	Nationally scarce marine species	Other rare/scarce	Species which occur in nine to 55 10km X 10km grid squares containing sea (or water of marine saline influence) within the three mile territorial limit.
PBA	Protection of Badgers Act (1992)	Nat Legislation	The Protection of Badgers Act 1992 protects badgers from taking, injuring, killing, cruel treatment, selling, possessing, marking and having their setts interfered with, subject to exceptions.
RDBGB.EN	IUCN (pre 1994) - Endangered	Red Data List	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.



Abbreviation	Full Designation	Region	Description
RDBGB.EX	IUCN (pre 1994) - Extinct	Red Data List	Taxa which are no longer known to exist in the wild after repeated searches of their localities and other known likely places. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RDBGB.ID	RDB - Indeterm	Red Data List	Taxa not seen since 1970 but require further survey before they can be declared extinctknown to be Extinct, Endangered, Vulnerable or Rare, but where there is not enough information to say which of these categories is appropriate. Superseded by new IUCN c
RDBGB.IK	RDB - Insuff known	Red Data List	Taxa that are suspected but not definitely known to belong to any of the above categories (i.e. Endangered, Vulnerable, Rare), because of the lack of information. Superseded by new IUCN categories in 1994, so no longer in use.
RDBGB.R	IUCN (pre 1994) - Rare	Red Data List	Taxa with small populations that are not at present Endangered or Vulnerable, but are



Abbreviation	Full Designation	Region	Description
			at risk. (In GB, this was interpreted as species which exist in fifteen or fewer 10km squares). Superseded by new IUCN categories in 1994, but still applicable to lists
RDBGB.Thre	RDB - Threatened endemic	Red Data List	Taxa which are not known to occur naturally outside Britain. Taxa within this category may also be in any of the other RDB categories or not threatened at all.
RDBGB.VU	IUCN (pre 1994) - Vulnerable	Red Data List	Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RDBGLB.EN	IUCN (pre 1994) - Endangered	Red Data List	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RDBGLB.EX	IUCN (pre 1994) - Extinct	Red Data List	A taxon is Extinct when there is no reasonable doubt that the last



Abbreviation	Full Designation	Region	Description
			individual has died. A taxon is presumed extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historical range
RDBGLB.R	IUCN (pre 1994) - Rare	Red Data List	Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk. (In GB, this was interpreted as species which exist in fifteen or fewer 10km squares). Superseded by new IUCN categories in 1994, but still applicable to lists
RDBGLB.VU	IUCN (pre 1994) - Vulnerable	Red Data List	Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RLGB.CR	IUCN (2001) - Critically endangered	Red Data List	A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E.



Abbreviation	Full Designation	Region	Description
RLGB.CR	IUCN (1994) - Critically endangered	Red Data List	A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E.
RLGB.DD	IUCN (2001) - Data Deficient	Red Data List	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known
RLGB.DD	IUCN (1994) - Data Deficient	Red Data List	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known
RLGB.EN	IUCN (2001) - Endangered	Red Data List	A taxon is Endangered when it is not Critically endangered but is facing a very high risk of extinction in the wild in the near future.
RLGB.EN	IUCN (1994) - Endangered	Red Data List	A taxon is Endangered when it is not Critically endangered but is



Abbreviation	Full Designation	Region	Description
			facing a very high risk of extinction in the wild in the near future.
RLGB.EW	IUCN (2001) - Extinct in the wild	Red Data List	A taxon is Extinct in the wild in Great Britain when it is known to survive only in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in k
RLGB.EX	IUCN (1994) - Extinct	Red Data List	Taxa which are no longer known to exist in the wild after repeated searches of their localities and other known likely places. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RLGB.EX	IUCN (2001) - Extinct	Red Data List	A taxon is Extinct in Great Britain when there is no reasonable doubt that the last individual in Great Britain has died. A taxon is presumed extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual



Abbreviation	Full Designation	Region	Description
RLGB.Lr(NT)	IUCN (2001) - Lower risk - near threatened	Red Data List	Taxa which do not qualify for Lower Risk (conservation dependent), but which are close to qualifying for Vulnerable. In Britain, this category includes species which occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or V
RLGB.Lr(NT)	IUCN (1994) - Lower risk - near threatened	Red Data List	Taxa which do not qualify for Lower Risk (conservation dependent), but which are close to qualifying for Vulnerable. In Britain, this category includes species which occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or V
RLGB.RE	IUCN (2001) - Regionally Extinct	Red Data List	Category for a taxon when there is no reasonable doubt that the last individual potentially capable of reproduction within the region has died or has disappeared from the wild in the region, or when, if it is a former visiting taxon, the last individual ha
RLGB.VU	IUCN (2001) - Vulnerable	Red Data List	A taxon is Vulnerable when it is not Critically Endangered or Endangered but is



Abbreviation	Full Designation	Region	Description
			facing a high risk of extinction in the wild in the medium term future.
RLGB.VU	IUCN (1994) - Vulnerable	Red Data List	A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium term future.
RLGLB.CR	IUCN (2001) - Critically endangered	Red Data List	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
RLGLB.CR	IUCN (1994) - Critically endangered	Red Data List	A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E.
RLGLB.EN	IUCN (2001) - Endangered	Red Data List	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high



Abbreviation	Full Designation	Region	Description
			risk of extinction in the wild.
RLGLB.EN	IUCN (1994) - Endangered	Red Data List	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
RLGLB.LR(cd)	IUCN (1994) - Lower risk - conservation dependent	Red Data List	Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a peri
RLGLB.Lr(NT)	IUCN (1994) - Lower risk - near threatened	Red Data List	Taxa which do not qualify for Lower Risk (conservation dependent), but which are close to qualifying for Vulnerable. In Britain, this category includes species which occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or V
RLGLB.VU	IUCN (2001) - Vulnerable	Red Data List	A taxon is Vulnerable when the best available



Abbreviation	Full Designation	Region	Description
			evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.
RLGLB.VU	IUCN (1994) - Vulnerable	Red Data List	Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Superseded by new IUCN categories in 1994, but still applicable to lists that have not been reviewed since 1994.
SNH-sens	SNH Sensitive species list	Local	Species on SNH sensitive species list
VC72RPR	Dumfriesshire Rare Plant Register	Local	Species listed in the VC rare plant register
VC75RPR	Ayrshire Rare Plant Register	Local	Species listed in the VC rare plant register
WCA9/INV	Invasive Non-native Species	Local	Includes all non-native species listed in Schedule 9 (parts 1 and 2) covering animals and plants which may not be released or allowed to escape into the wild plus additional invasive non-native species.



