Cairngorms NATIONAL PARK
Pàirc Nàiseanta a' Mhonaidh Ruaidh

STRATEGY

Cairngorm and Glenmore
Strategy

Strategic Environmental Assessment Environmental Report

December 2015

Appendix 2: Environmental Baseline

Topic 6: Biodiversity, Fauna and Flora

Topic 6: Biodiversity, Fauna and Flora

> "*Biodiversity – the variety of Life on Earth – makes our planet habitable and beautiful. We depend on it for food, energy, raw materials, air and water that make life possible and drive our economy. We look to the natural environment for equally important things like aesthetic pleasure, artistic inspiration and recreation.*"
>
> European Commission Natura 2000.

The Cairngorms National Park is a haven for nature and wildlife and is of great significance for Scotland and the UK. The National Park covers less than two per cent of the UK landmass but is home to 25% of its rare animal, insect, lichen, fungi and insect species. The habitats around Cairngorm and Glenmore are rich and varied and include the montane alpine plants high on the Cairngorms plateaux, the sources of tributaries to the renowned salmon river of the Spey and ancient Caledonian forest, which support rare insects and fungi.

Protected Areas

Protected areas represent the very best of Scotland's landscapes, plants and animals, rocks, fossils and landforms. Their protection and management will help to ensure that they remain in good health for all to enjoy, both now and for future generations.

The Cairngorm and Glenmore area is home to a number of areas designated to meet the needs of international directives and treaties, national legislation and policies as well as more local needs and interests.

National Designations

National designations cover a range of different types of protected area, including Natural Nature Reserves (NNR) and Sites of Special Scientific Interest (SSSI), both of which are located within the Cairngorms National Park. The National Park is also home to a number of non-statutory protected sites, such as the RSPB reserve at Loch Garten.

National Nature Reserves

NNRs are statutory nature reserves designed under Part III of the National Parks and Access to the Countryside Act 1949. Most reserves have habitats and species that are nationally or internationally important so the wildlife is managed very carefully. However, people are also encouraged to enjoy NNRs too and so most have some form of visitor facilities that are designed to ensure recreational activities are not pursued without heed for the wildlife and habitat that exists there.

There are 4 NNRs (**Table 12** and **Figure 43**) in close proximity to the Cairngorm and Glenmore Area, which cover a combined area of around 448 km^2.

The NNRs are run by a range of organisations. For example, most of the Abernethy are managed as part of RSPB reserves.

Craigellachie is the only NNR listed in **Table 12** that is not shown on **Figure 43**. The site lies just to the northwest of Aviemore on the far side of the A9 Trunk road. It is listed by virtue of its close relationship with Aviemore and the surrounding area, which means that an increase in visitors to Cairngorm and Glenmore could also lead to an increase in visitors to Craigellachie.

Table 12 National Nature Reserves in the Cairngorm and Glenmore area.

Site Code	Name	Year Est.	Area (ha)
5013	Cairngorms[1]	1954	25,963.63
5020	Craigellachie	1960	257.46
10097	Invereshie and Inshriach	2007	3,730.86
10098	Glenmore	2007	2,119.49
10099	Abernethy	2007	12,753.81

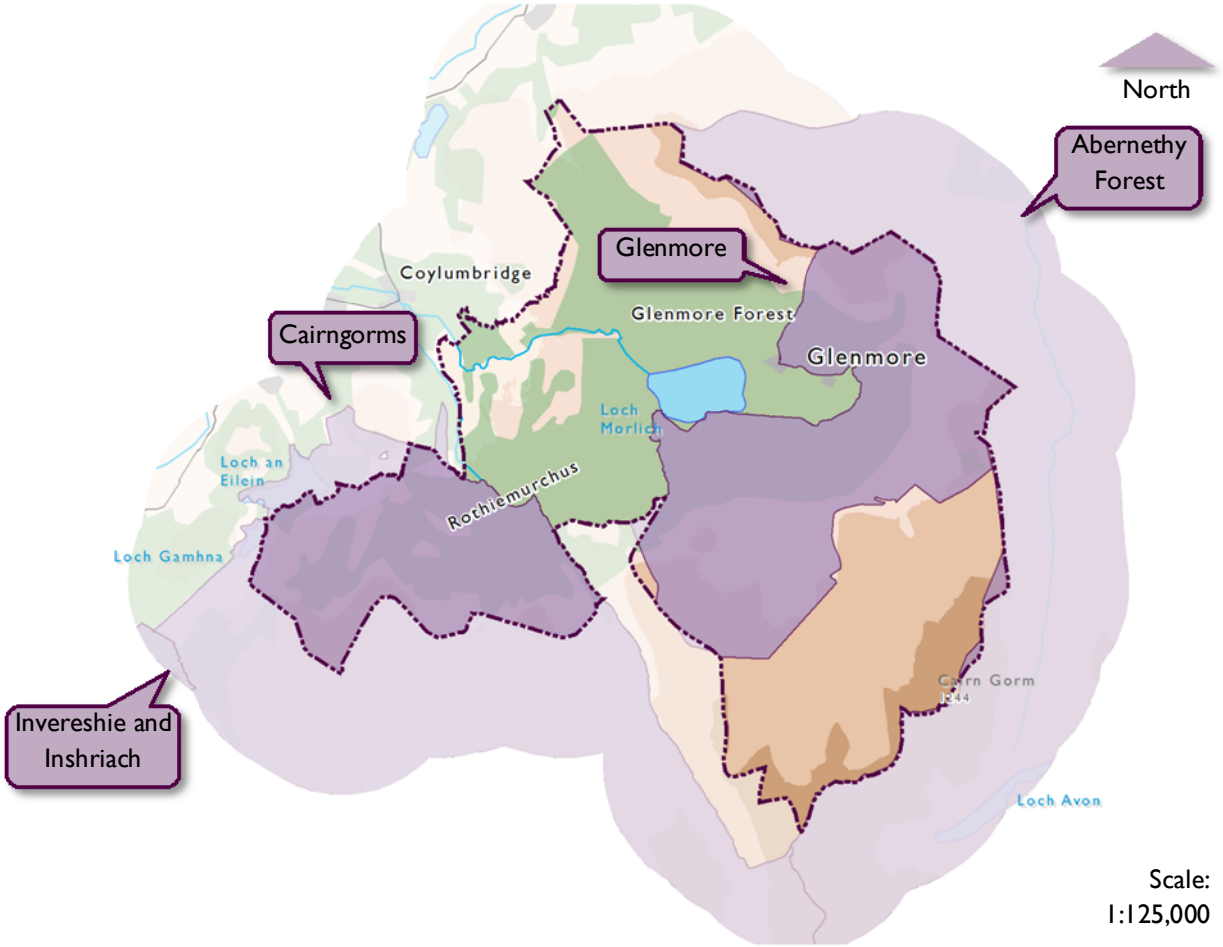

Figure 43 National Nature Reserves in the Cairngorm and Glenmore area.

[1] While the Cairngorms NNR is technically a declared NNR, it is under review and not managed or promoted as an NNR.

Sites of Special Scientific Interest

Designated under the Nature Conservation (Scotland) Act 2004, SSSIs are those areas of land and water that SNH considers to best represent Scotland's natural heritage - its diversity of plants, animals and habitats, rocks and landforms, or a combinations of such natural features (see **Figure 44** and **Figure 45**).

They are the essential building blocks of Scotland's protected areas for nature conservation and therefore many are also designated as Natura 2000 sites.

Only SSSIs designated with biological (i.e. flora and fauna) notifiable features are considered under this sections (**Table 13**). SSSIs designated solely for geological or physiographical features are therefore not covered and **Topic 4: Soil** (p. 94) and **Topic 5: Material Assets** (p. 104) should be consulted for further information.

Table 13 Condition of Biological and Mixed SSSIs located within the Cairngorm and Glenmore area.

Site Code	Name	Type	Total Area (ha)	Area in CNP (ha)	Biological Features in Favourable Condition	Biological Features in Unfavourable Condition	Pressures
9	Abernethy Forest	Mixed	5793.46	5793.46	Native pinewood; Basin fen; Raised bog; Crested tit; Capercaillie; Osprey; Breeding bird assemblage; Vascular plant assemblage; Fungi assemblage; Lichen assemblage; Invertebrate assemblage; Beetle assemblage; Dragonfly assemblage.	Subalpine dry heath.	Under-grazing; over-grazing; burning; forestry operations; game/fisheries management; invasive species; trampling; other.
53	Alvie	Biological	339.01	339.01	Invertebrate assemblage; Goldeneye.	Upland oak woodland.	Over-grazing; forestry operations.
288	Cairngorms	Mixed	29226.7	29226.70	Breeding bird assemblage; Bryophyte assemblage; Dotterel; breeding, Fungi assemblage; Golden eagle, breeding, Invertebrate		Over-grazing; recreation/disturbance; natural events; agricultural operations; climate change; forestry

Site Code	Name	Type	Total Area (ha)	Area in CNP (ha)	Biological Features in Favourable Condition	Biological Features in Unfavourable Condition	Pressures
					assemblage, Native pinewood, Dystrophic and oligotrophic lochs, Ptarmigan. Breeding; Snow bunting, breeding; Vascular plant assemblage.		operations; trampling; under-grazing; other.
428	Craigellachie	Biological	379.85	379.85	Upland birch woodland; Moth assemblage.		Burning; other.
593	Eastern Cairngorms	Mixed	16503.42	16503.42	Dystrophic and oligotrophic lochs, Breeding bird assemblage; Bryophyte assemblage, Vascular plant assemblage; Arctic charr.	Native pinewood; Invertebrate assemblage.	Burning; game/fisheries management; over-grazing; recreation/disturbance; air pollution; forestry operations; natural events; water management.
864	Kinveachy Forest	Biological	5325.7	3728.87	Breeding bird assemblage.	Native pinewood.	
1241	North Rothiemurchus Pinewood	Mixed	1509.75	1509.75	Breeding bird assemblage; Crested tit; Osprey; Fungi assemblage; Lichen assemblage; Invertebrate assemblage.	Native pinewood.	Over-grazing; forestry operations; invasive species; proactive on-site management; recreation disturbance; under-grazing; other.
1243	Northern Corries, Cairngorms	Mixed	1966.37	1966.37	Breeding bird assemblage; Vascular plant assemblage;, Scrub; Upland assemblage.		Recreation/disturbance; other.
1665	Glenmore Forest	Biological	1440.38	1237.26	Capercaillie; Narrow-headed ant; Vascular plant assemblage; Native		Conservation activities; game/fisheries management; inter-specific

Site Code	Name	Type	Total Area (ha)	Area in CNP (ha)	Biological Features in Favourable Condition	Biological Features in Unfavourable Condition	Pressures
					pinewood.		competition; proactive on-site management; no pro-active management.
1699	River Spey	Mixed	1958.79	346.30	Sea lamprey; Otter.	Atlantic salmon; Freshwater pearl mussel.	Invasive species; extraction; over-grazing; water quality; wildlife crime.

There are 10 SSSIs within close proximity to Cairngorm and Glenmore. All have biological notifiable features, covering an area of around 610 km^2. Of these, 6 have at least one notifiable feature that is in unfavourable condition.

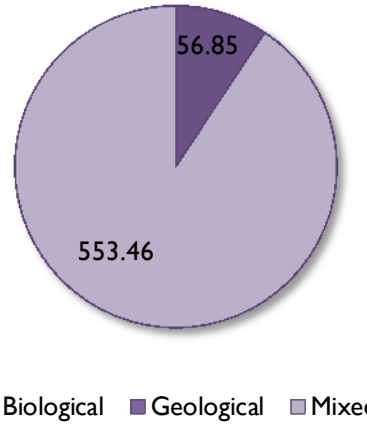

Figure 44 Area (km^2) covered by the three types of SSSI considered within this SEA.

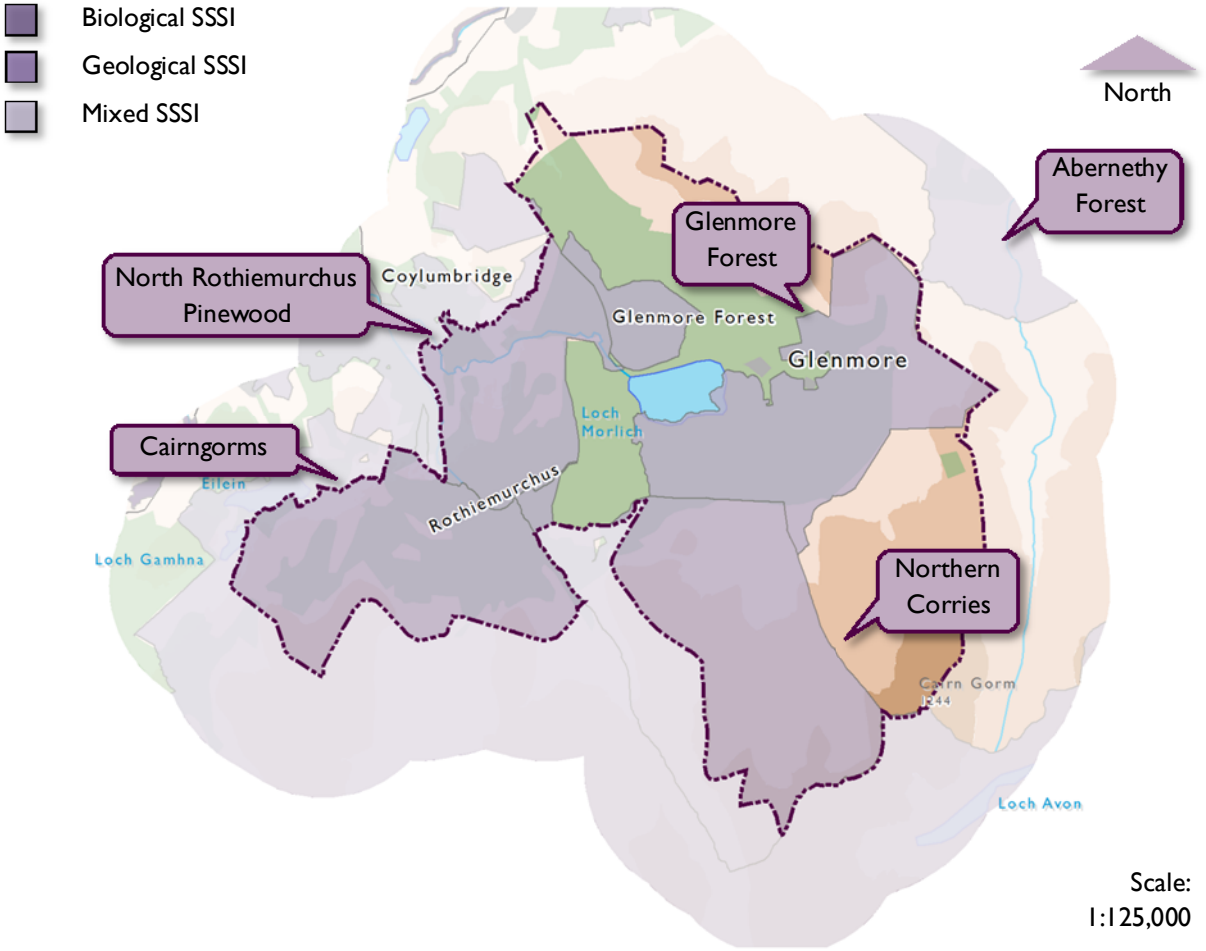

Figure 45 Sites of Special Scientific Interest by type within and overlapping the Cairngorm and Glenmore Area.

Scale: 1:700,000

International Designations

Natura 2000 Network

Nearly half of the Cairngorms National Park is designated within the Natura 2000 network, sites which are considered the best sites for wildlife in Europe.

There are two types of Natura 2000 site within the National Park, namely Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

The following sites have been identified as being potentially at risk from the implementation of the Strategy:

- Abernethy Forest SPA,
- Anagach Woods SPA,
- Cairngorms SAC,
- Cairngorms SPA,
- Cairngorms Massif SPA,
- Craigmore Wood SPA,
- Kinveachy Forest SAC,
- Kinveachy Forest SPA,
- River Spey SAC.

Other sites were considered but rejected at as it is considered that there can be no possible effect upon them. These include, for example, Insh Marshes SAC and the River Spey – Insh Marshes SPA / Ramsar site, because they are deemed to be too far away for there to be any impacts upon the qualifying species and the habitats. Information on each identified site and its qualifying features is outlined in this report.

A simple colour scheme has been used to highlight the condition of qualifying features, the key to which is provided below:

Features in 'Favourable Maintained' or 'Favourable Recovered' condition.
Features that are either in 'Favourable Declining' or 'Unfavourable Recovering' condition.
Features that are in 'Unfavourable Maintained' or 'Unfavourable Declining' condition.
Features that have not been monitored to date.

Special Areas of Conservation

SACs are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the UK's 78 Annex I habitat types (of which 26 are marine and coastal and therefore not relevant to the National Park), 33 occur in the National Park. Of the UK's 33 Annex II species (of which 4 are marine and coastal and therefore not relevant to the National Park), 10 are native to, and normally resident in, the National Park.

There are 3 SACs within close proximity of the Cairngorm and Glenmore area (**Figure 46**), covering an area of around 641 km^2. Of these, 2 have at least one notifiable feature that is in unfavourable condition, while one, namely Kinveachy Forest, has no features in favourable condition.

The relationship of these sites can make it hard to distinguish between them on **Figure 46**. However, only Cairngorms and River Spey SACs overlap the Cairngorm and Glenmores area, with the River Spey SAC's boundary hugging the banks and wetlands of its constituent waterbodies.

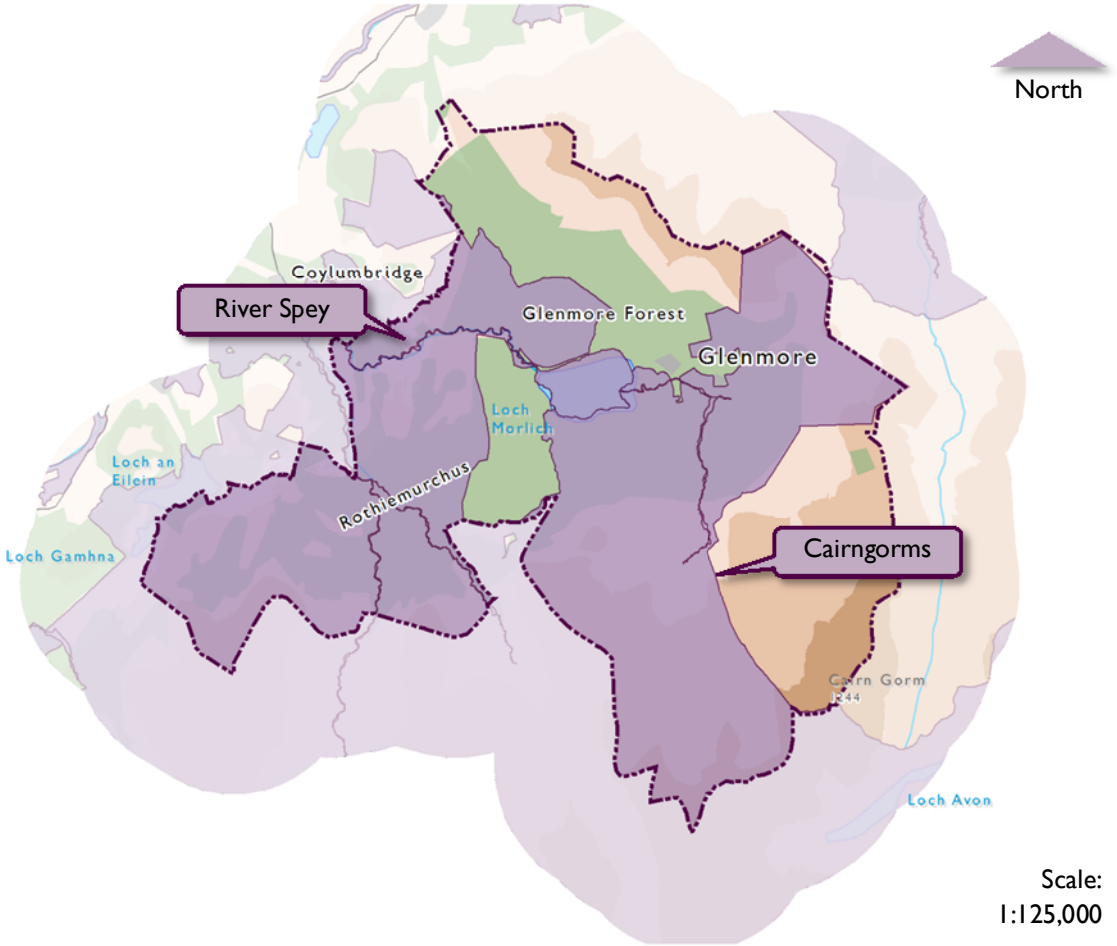

Figure 46 Special Areas of Conservation within the Cairngorm and Glenmore area.

Cairngroms SAC

Local Authority	Aberdeenshire; Highland; Moray
SAC status	Designated 17/03/2005
Latitude	57 04 36 N
Longitude	03 39 15 W
SAC EU code	UK0016412
Area (ha)	57685.02
Area (ha) in CNP	57685.02 (100%)

General site character

Inland water bodies (Standing water, Running water)	2.1%
Bogs, Marshes, Water fringed vegetation, Fens	10%
Heath, Scrub, Maquis and Garrigue, Phygrana	42.7%
Dry grassland, Steppes	2.2%
Humid grassland, Mesophile grassland	1%
Alpine and sub-Alpine grassland	16%
Improved grassland	1%
Other arable land	1%
Broad-leaved deciduous woodland	1%
Coniferous woodland	13%
Mixed woodland	1%
Inland rocks, Screes, Sands, Permanent Snow and ice	8%
Other land	1%

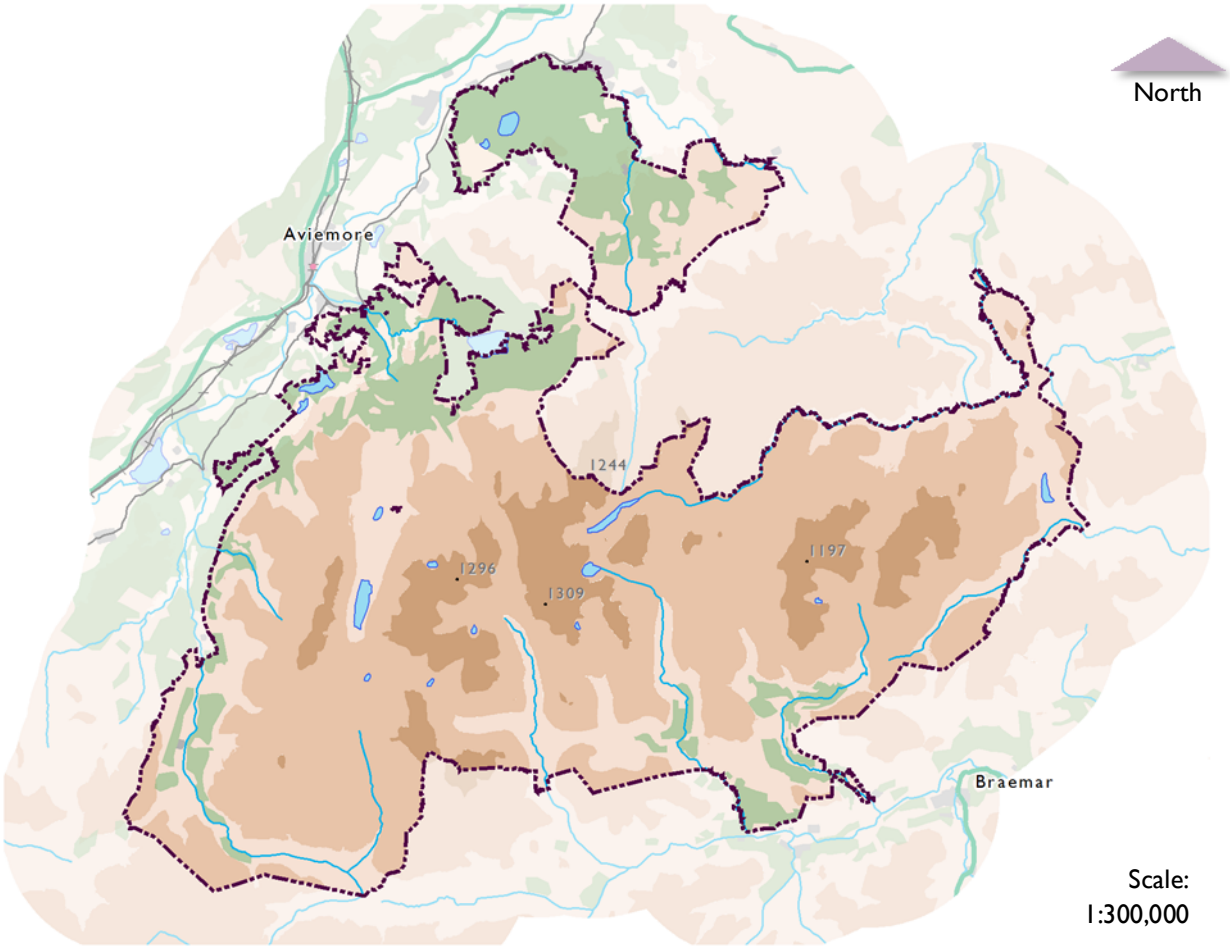

Figure 47 Cairngorms SAC.

Conservation Objectives

Habitats

To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

Status of Qualifying Habitat

Qualifying Habitat	Current Condition	Pressures	Visit Date
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable Maintained	No negative pressures identified	23/06/2010
Acid peat-stained lakes and ponds	Favourable Maintained	No negative pressures identified	24/06/2010
Caledonian forest	Unfavourable Declining	Invasive species; under-grazing	27/01/2009
Dry grasslands and scrublands on chalk or limestone	Unfavourable No change	Over-grazing; under-grazing; over grazing	03/04/2007
Blanket bog	Unfavourable No change	Over-grazing	03/04/2007
Tall herb communities	Favourable Maintained	No negative pressures identified	03/04/2007
Hard-water springs depositing lime	Favourable Maintained	Over-grazing	03/04/2007
Alpine and subalpine heaths	Unfavourable No change	Burning; over grazing; Recreation / disturbance	03/04/2007
Dry heaths	Unfavourable No change	Burning	03/04/2007
Plants in crevices on acid rocks	Favourable Maintained	Recreation / disturbance	03/04/2007
Acidic scree	Favourable Maintained	Recreation / disturbance	03/04/2007
Mountain willow scrub	Unfavourable No change	Over-grazing	03/04/2007

Species

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Qualifying Habitat	Current Condition	Pressures	Visit Date
Wet heathland with cross-leaved heath	Unfavourable No change	Over-grazing	03/04/2007
Species-rich grassland with mat-grass in upland areas	Unfavourable No change	Trampling; under-grazing	03/04/2007
Plants in crevices on base-rich rocks	Unfavourable No change	Invasive species	03/04/2007
Juniper on heaths or calcareous grasslands	Favourable Maintained	No negative pressures identified	03/04/2007
Very wet mires often identified by an unstable 'quaking' surface	Favourable Maintained	No negative pressures identified	08/04/2007
Montane acid grasslands	Unfavourable Recovering	Recreation / disturbance	14/07/2006
High-altitude plant communities associated with areas of water seepage	Unfavourable No change	Over-grazing	15/10/2006
Bog woodland	Favourable Maintained	Over-grazing	05/09/2002

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Green shield-moss (*Buxbaumia viridis*)	Favourable Maintained	Forestry operations	02/05/2006
Otter (*Lutra lutra*)	Favourable Maintained	Recreation / disturbance	08/09/2004

Kinveachy Forest SAC

Local Authority	Highland
SAC status	Designated 17/03/2005
Latitude	57 14 15 N
Longitude	03 54 00 W
SPA EU code	UK0012759
Area (ha)	2849.36
Area (ha) in CNP	2232.59 (78.4%)

General site character

Inland water bodies (standing water, running water)	0.5%
Bogs. Marshes. Water fringed vegetation. Fens	0.5%
Heath. Scrub. Maquis and garrigue. Phygrana	40%
Humid grassland. Mesophile grassland	1%
Broad-leaved deciduous woodland	9%
Coniferous woodland	49%

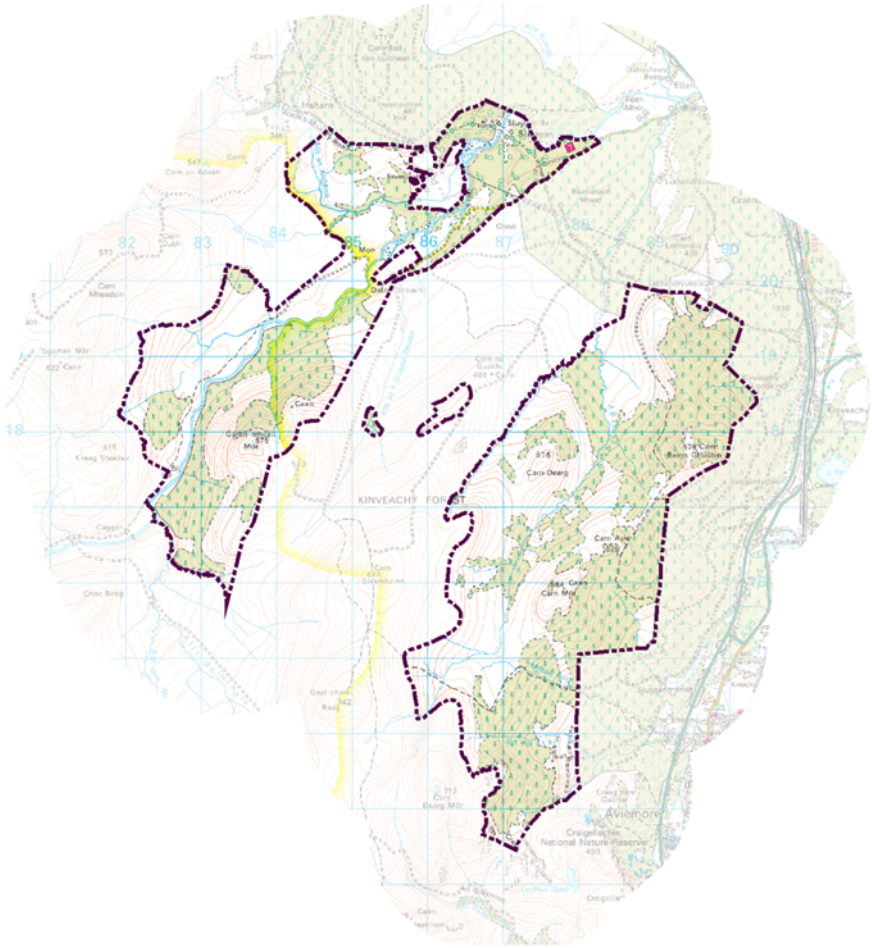

Figure 48 Kinveachy Forest SAC.

Conservation Objectives

To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favorable conservation status for each of the qualifying features; and

To ensure for the qualifying habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat.

Status of Qualifying Habitat

Qualifying Habitat	Current Condition	Pressures	Visit Date
Bog woodland	Unfavourable Recovering	No negative pressures identified	24/06/2008
Caledonian forest	Unfavourable Recovering	No negative pressures identified	24/06/2008

River Spey SAC

Local Authority	Highland; Moray; Perth & Kinross
SAC status	Designated 17/03/2005
Latitude	57 22 15 N
Longitude	03 30 00 W
SAC EU code	UK0019811
Area (ha)	5729.48
Area (ha) in CNP	4181.76 (73%)

General site character

Inland water bodies (standing water, running water)	60%
Bogs. Marshes. Water fringed vegetation. Fens	11%
Heath. Scrub. Maquis and garrigue. Phygrana	1%
Humid grassland. Mesophile grassland	15%
Improved grassland	4%
Other arable land	1%
Broad-leaved deciduous woodland	5%
Coniferous woodland	1%
Mixed woodland	1%
Other land	1%

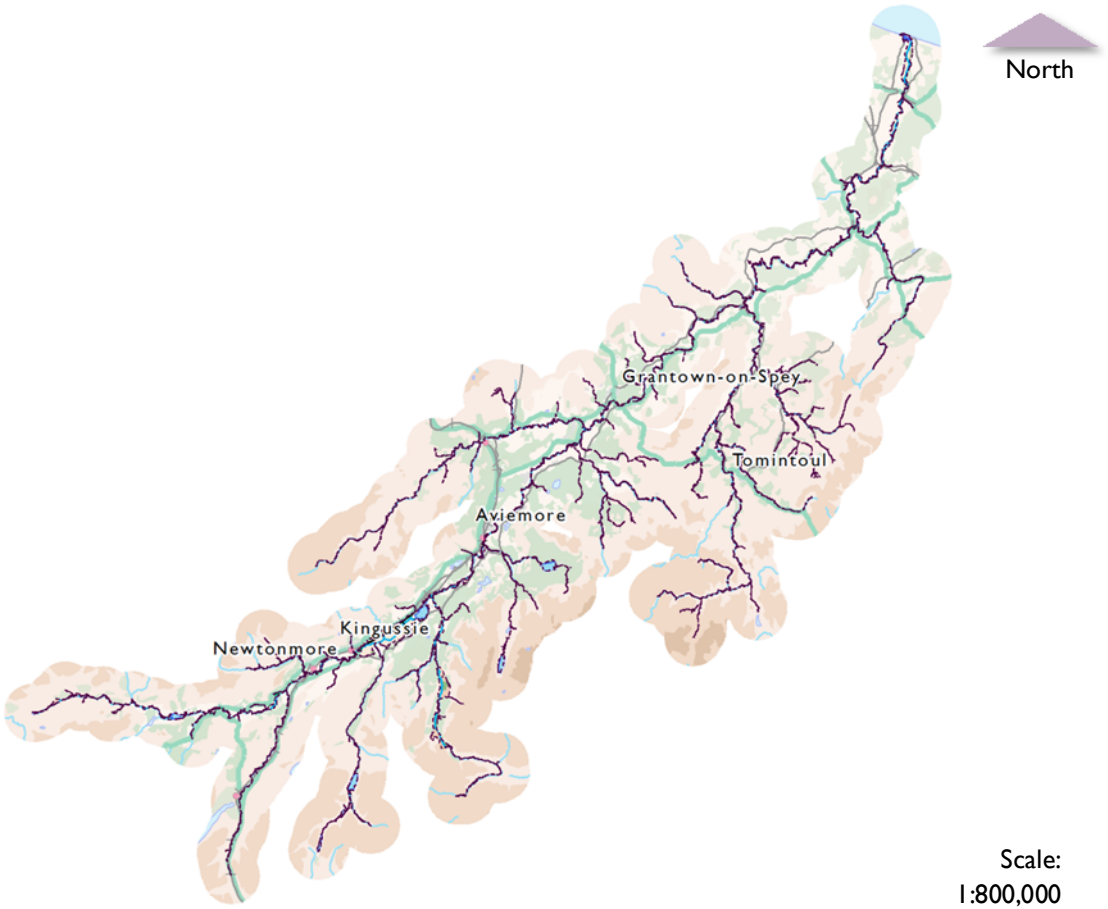

Figure 49 River Spey SAC.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favorable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species, including range of genetic types for salmon, as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species
- Distribution and viability of freshwater pearl mussel host species

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Sea lamprey (*Petromyzon marinus*)	Favourable Maintained	No negative pressures identified	07/09/2011
Otter (*Lutra lutra*)	Favourable Maintained	Over-grazing; other	08/09/2004
Atlantic salmon (*Salmo salar*)	Unfavourable Recovering	Agricultural operations; invasive species; water management	20/10/2004
Freshwater pearl mussel (*Margaritifera margaritifera*)	Unfavourable Recovering	Extraction; invasive species; water quality; wildlife crime	01/10/2000

- Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

Special Protection Areas

SPAs are strictly protected sites classified in accordance with Article 4 of the EC Birds Directive. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species. 35 of these Annex I species can be found within the Cairngorms National Park, with SPAs designated to protect populations of 15 of them.

There are 6 SPAs within close proximity of Cairngorm and Glenmore (**Figure 50**), covering an area of around 1,917 km^2. Of these, 2 have at least one notifiable feature that is in unfavourable condition and of these one, namely Craigmore Wood, has no features in favourable condition.

With around 1,733 km^2 of its 1,875 km^2 within the National Park, The Cairngorms Massif SPA is the largest single area of protected land within the National Park. There are currently no public records on the condition of the breeding population of Golden eagle (*Aquila chrysaetos*) in the SPA, which is its only qualifying feature.

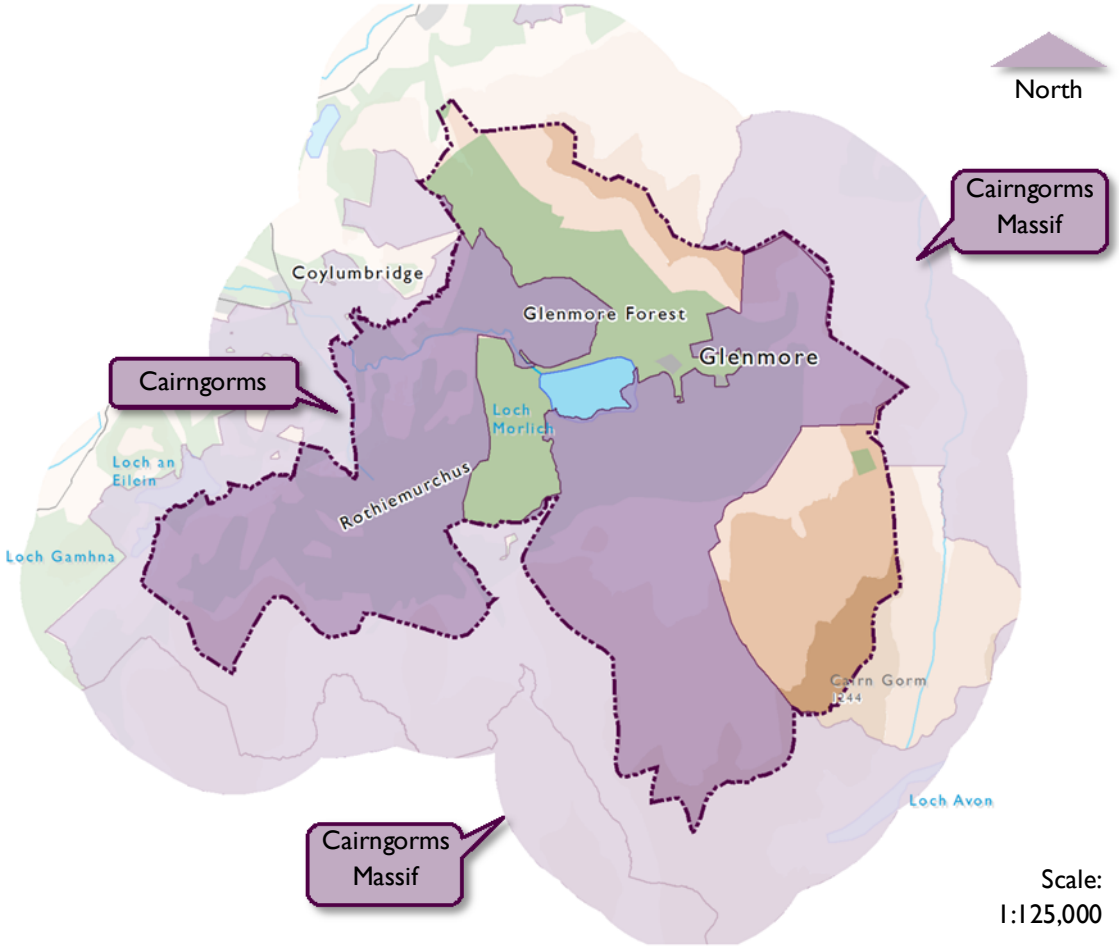

Figure 50 Special Protection Areas within the Cairngorm and Glenmore Area.

Abernethy Forest SPA

Local Authority	Highland
SPA status	Classified 25/04/1990
Latitude	57 13 22 N
Longitude	03 18 10 W
SPA EU code	UK9002561
Area (ha)	5793.46
Area (ha) in CNP	5793.46 (100%)

General site character

Inland water bodies (standing water, running water)	1%
Bogs. Marshes. Water fringed vegetation. Fens	11.2%
Heath. Scrub. Maquis and garrigue. Phygrana	27.6%
Broad-leaved deciduous woodland	0.8%
Coniferous woodland	59.3%

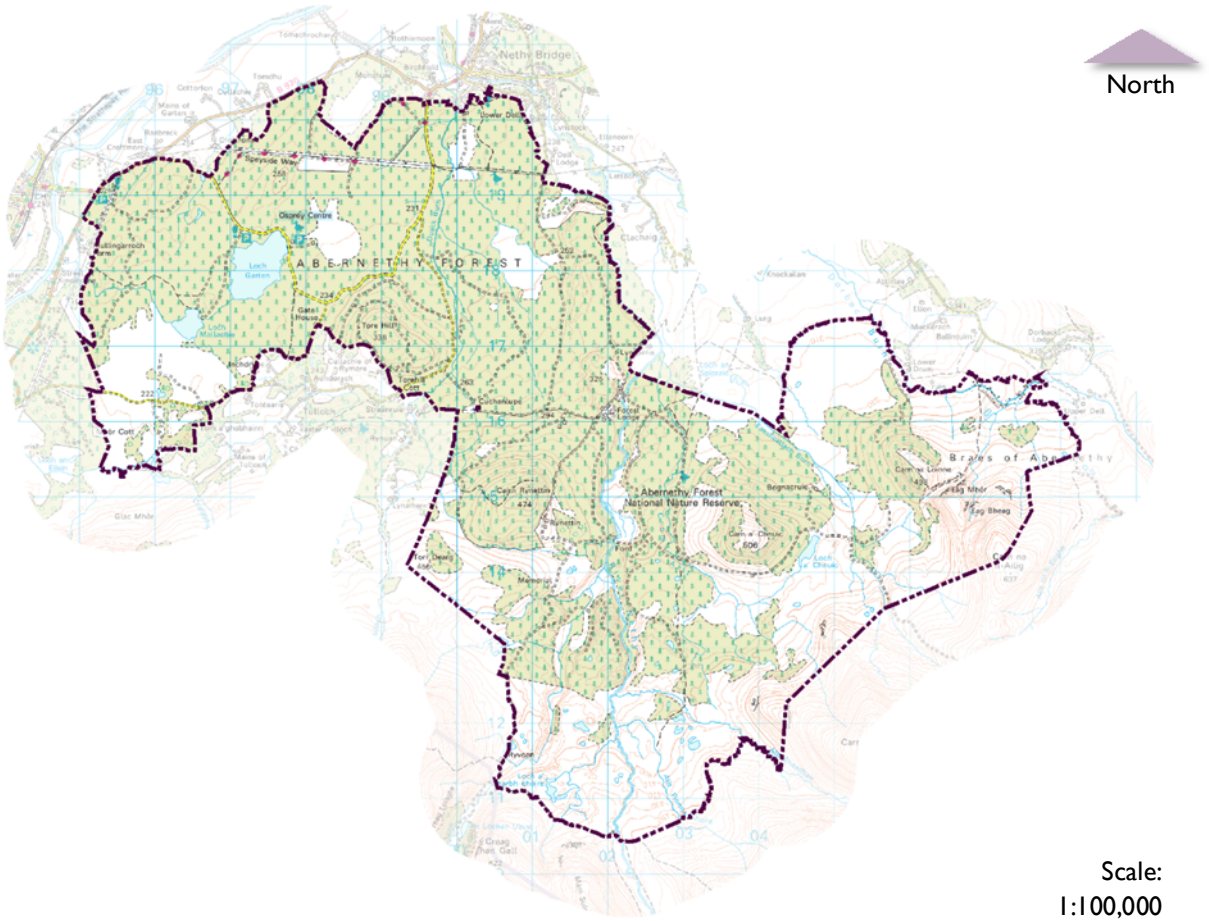

Figure 51 Abernethy Forest SPA.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site.
- Distribution of the species within site.
- Distribution and extent of habitats supporting the species.
- Structure, function and supporting processes of habitats supporting the species.
- No significant disturbance of the species.

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Capercaillie (*Tetrao urogallus*), breeding	Favourable Maintained	Under-grazing	28/04/2009
Osprey (*Pandion haliaetus*), breeding	Favourable Maintained	No negative pressures identified	31/05/2007
Scottish crossbill (*Loxia scotica*), breeding	Not monitored to date	No negative pressures identified	N/A

Anagach Woods SPA

Local Authority	Highland
SPA status	Classified 16/03/2006
Latitude	57 19 45 N
Longitude	03 34 30 W
SPA EU code	UK9020297
Area (ha)	392.78
Area (ha) in CNP	392.78 (100%)

General site character

Dry grassland. Steppes	0.8%
Coniferous woodland	95%
Mixed woodland	4%
Other land	0.2%

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

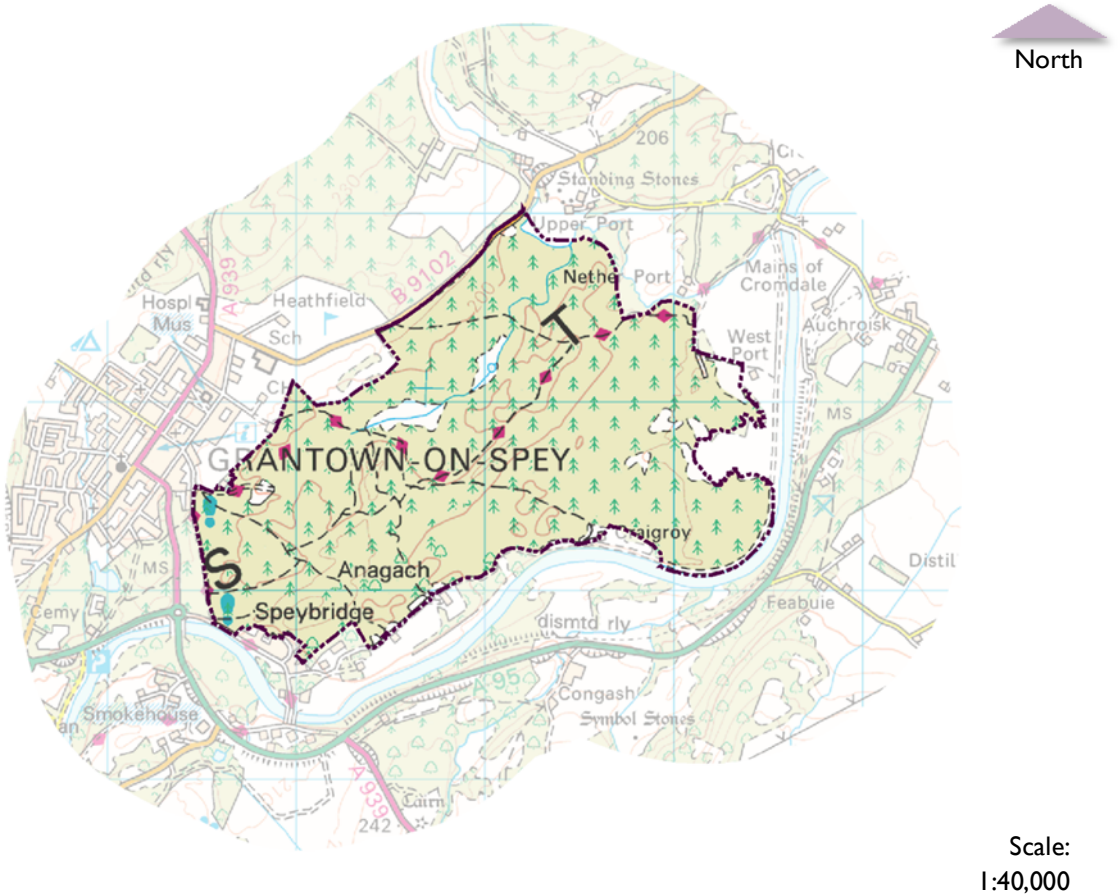

Figure 52 Anagach Woods SPA.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site.
- Distribution of the species within site.
- Distribution and extent of habitats supporting the species.
- Structure, function and supporting processes of habitats supporting the species.
- No significant disturbance of the species.

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Capercaillie (*Tetrao urogallus*), breeding	Favourable Maintained	Recreation / disturbance	25/04/2010

Cairngorms SPA

Local Authority	Highland, Aberdeenshire
SPA status	Classified 25/09/1997
Latitude	57 04 30 N
Longitude	03 38 30 W
SPA EU code	UK9002241
Area (ha)	50586.64
Area (ha) in CNP	50586.64 (100%)

General site character

Inland water bodies (standing water, running water)	2%
Bogs. Marshes. Water fringed vegetation. Fens	16%
Heath. Scrub. Maquis and garrigue. Phygrana	44%
Dry grassland. Steppes	2%
Humid grassland. Mesophile grassland	1%
Alpine and sub-alpine grassland	14%
Improved grassland	1%
Other arable land	1%
Broad-leaved deciduous woodland	1%
Coniferous woodland	6%
Mixed woodland	1 %
Inland rocks. Screes. Sands. Permanent snow and ice	5.3%
Other land	1%

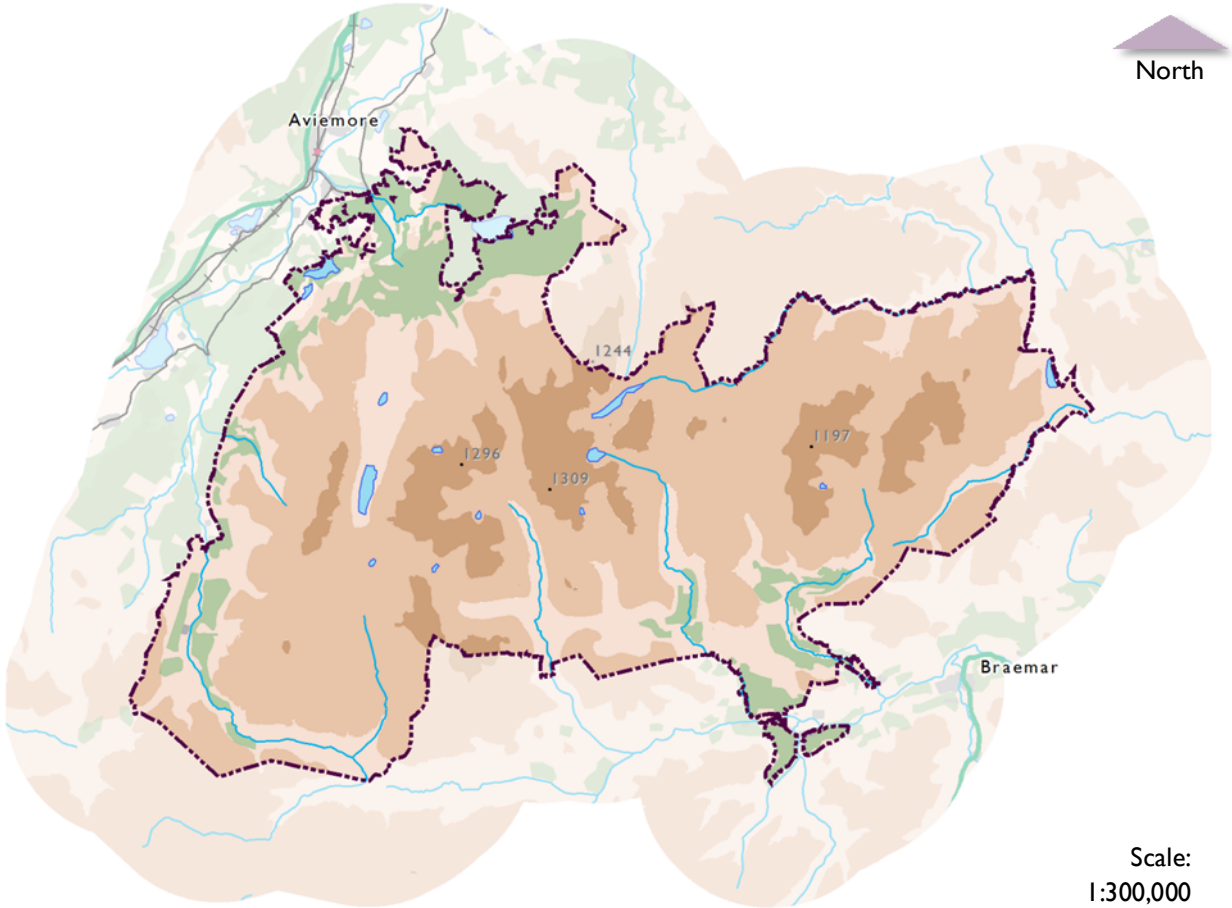

Figure 53 Cairngorms SPA.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Capercaillie (*Tetrao urogallus*), breeding	Favourable Maintained	No negative pressures identified	25/04/2011
Merlin (*Falco columbarius*), breeding	Not monitored to date	No negative pressures identified	N/A
Osprey (*Pandion haliaetus*), breeding	Favourable Maintained	No negative pressures identified	01/06/2006
Golden eagle (*Aquila chrysaetos*), breeding	Favourable Maintained	Game / fisheries management	31/07/2009
Dotterel (*Charadrius morinellus*), breeding	Unfavourable Declining	Recreation / disturbance; over-grazing	01/07/2011
Scottish crossbill (*Loxia scotica*), breeding	Not monitored to date	No negative pressures identified	N/A
Peregrine (*Falco peregrinus*), breeding	Favourable Maintained	Recreation / disturbance	30/06/2002

Cairngorms Massif SPA

Local Authority	Aberdeenshire, Angus, Highland, Moray, Perth and Kinross
SPA status	Classified 28/10/2010
Latitude	56 58 08 N
Longitude	03 29 29 W
SPA EU code	UK9020308
Area (ha)	187504.06
Area (ha) in CNP	173254.64 (92.4%)

General site character

Inland water bodies (standing water, running water)	0.2%
Bogs. Marshes. Water fringed vegetation. Fens	27.6%
Heath. Scrub. Maquis and garrigue. Phygrana	45.3%
Humid grassland. Mesophile grassland	5.9%
Alpine and sub-alpine grassland	17.8%
Improved grassland	0.1%
Broad-leaved deciduous woodland	0.1%
Coniferous woodland	0.8%
Mixed woodland	1.5%
Inland rocks. Screes. Sands. Permanent snow and ice	0.7%

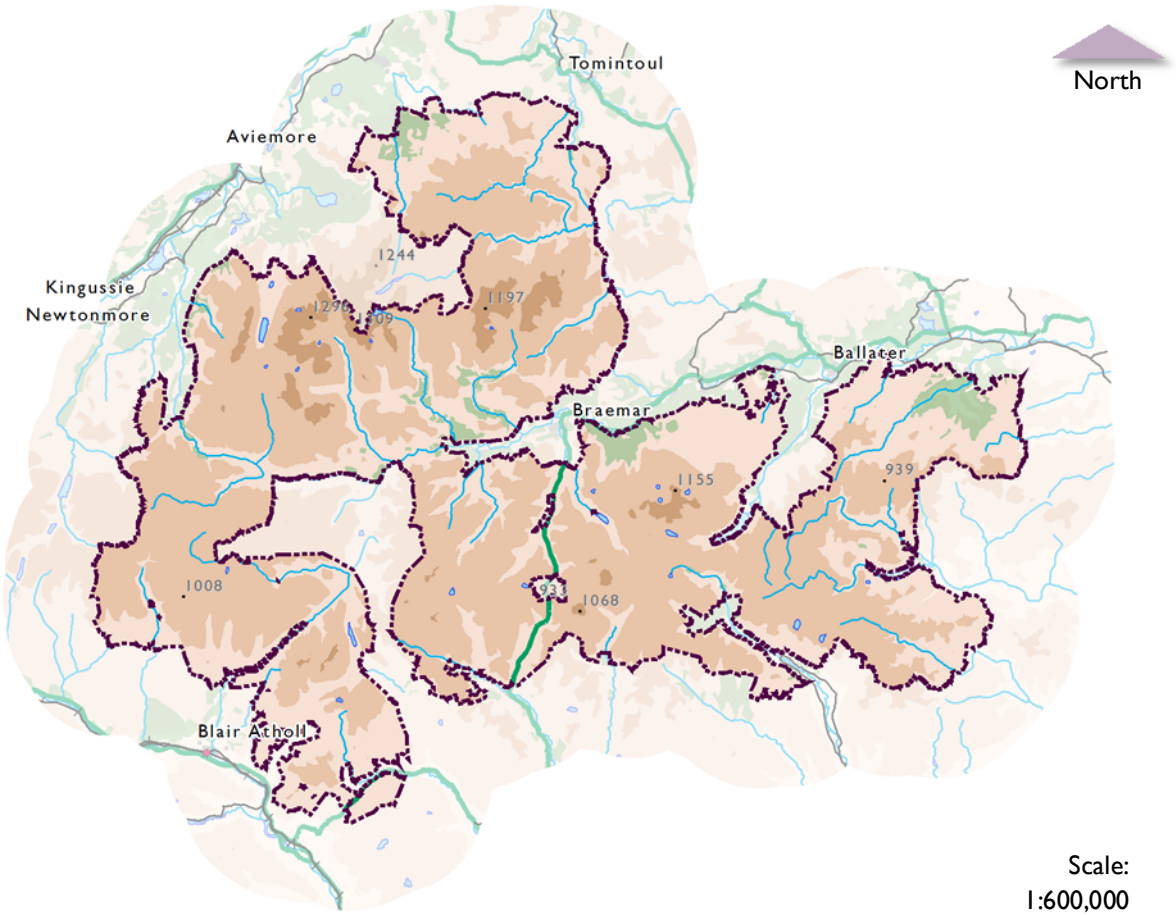

Figure 54 Cairngorms Massif SPA.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Golden eagle (*Aquila chrysaetos*), breeding	Not monitored to date	Plant pests & diseases; proactive onsite management	N/A

Craigmore Wood SPA

Local Authority	Highland
SPA status	Classified 30/10/2001
Latitude	57 17 00 N
Longitude	03 37 00 W
SPA EU code	UK9001801
Area (ha)	654.09
Area (ha) in CNP	654.09 (100%)

General site character

Bogs. Marshes. Water fringed vegetation. Fens	0.5%
Heath. Scrub. Maquis and garrigue. Phygrana	3%
Humid grassland. Mesophile grassland	0.5%
Broad-leaved deciduous woodland	10%
Coniferous woodland	85%
Other land	1%

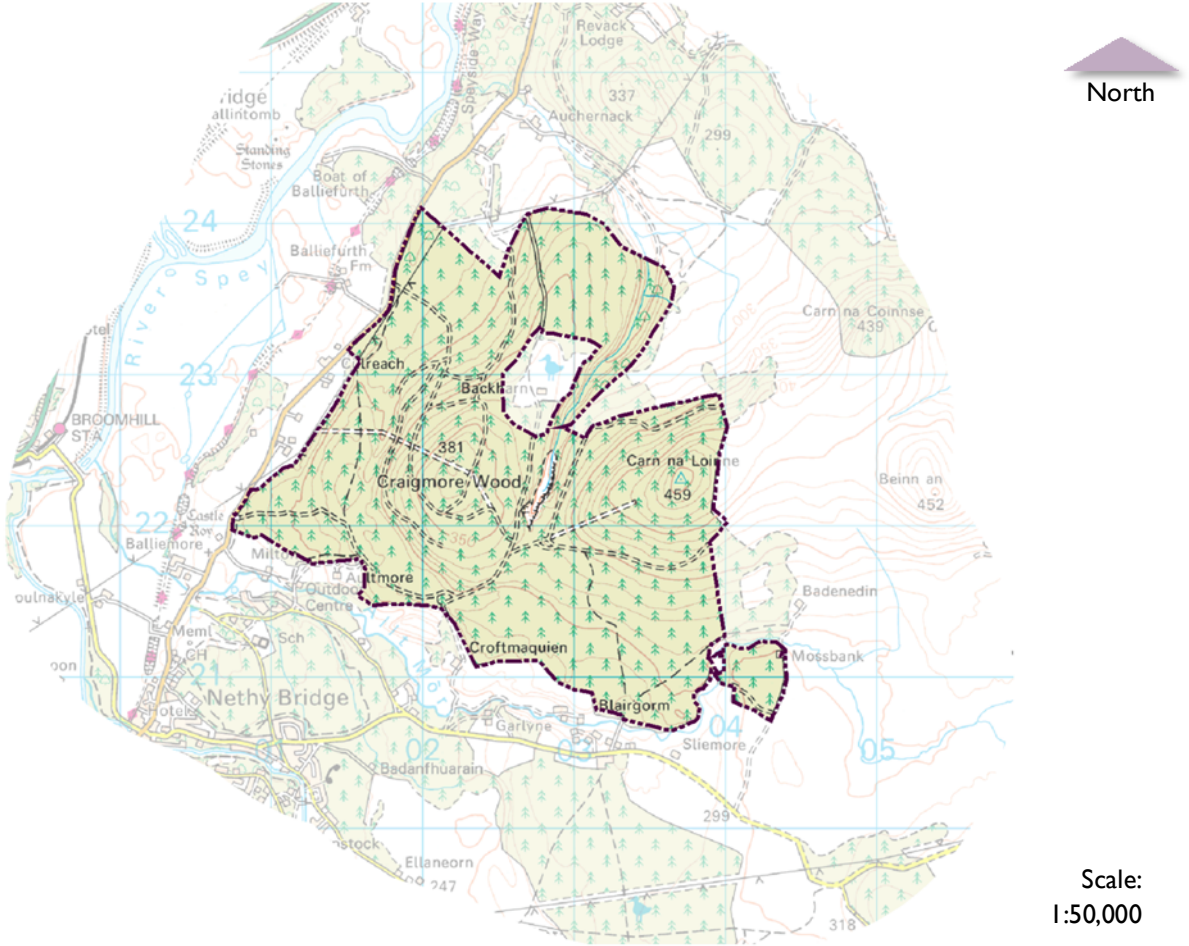

Figure 55 Craigmore Woods SPA.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Capercaillie (*Tetrao urogallus*), breeding	Unfavourable No change	No onsite activities identified	28/04/2009

Kinveachy Forest SPA

Local Authority	Highland
SPA status	Classified 02/02/2000
Latitude	57 14 15 N
Longitude	03 54 00 W
SPA EU code	UK9002581
Area (ha)	2849.36
Area (ha) in CNP	2232.59 (78.4%)

General site character

Inland water bodies (standing water, running water)	1%
Bogs. Marshes. Water fringed vegetation. Fens	10%
Heath. Scrub. Maquis and garrigue. Phygrana	40%
Humid grassland. Mesophile grassland	10%
Broad-leaved deciduous woodland	5%
Coniferous woodland	25%
Mixed woodland	9%

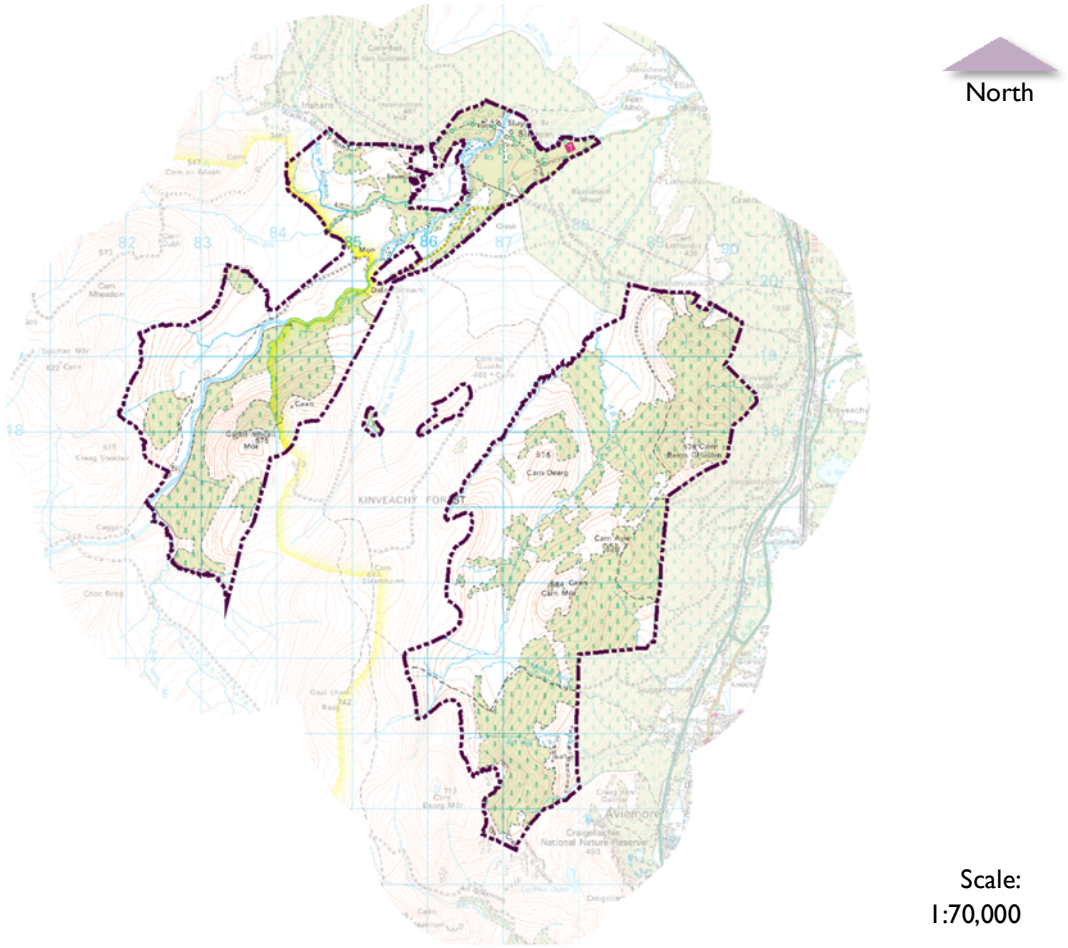

Figure 56 Kinveachy Forest SPA.

Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

Status of Qualifying Species

Qualifying Species	Current Condition	Pressures	Visit Date
Capercaillie (*Tetrao urogallus*), breeding	Favourable Maintained	No negative pressures identified	15/05/2008
Scottish crossbill (*Loxia scotica*), breeding	Not monitored to date	No negative pressures identified	N/A

Ramsar Convention

The National Park is also home to three wetlands of international importance that have been designated under the Ramsar Convention, namely, Cainrgorm Lochs, Muir of Dinnet and River Spey – Insh Marshes. The designation recognises the fundamental ecological functions of these areas as well as their economic, cultural, scientific, and recreational value. None are likely to be effected by the Cairngorm and Glenmore Strategy.

Non-Statutory Designations

The Loch Garten RSPB Reserve (**Figure 57**) is the only non-statutory designation in close proximity to Cairngorm and Glenmore. The reserve encompasses a number of statutory designations and is best known for its osprey, but is also an important site for capercaillie, crested tit, goldeneye and Scottish crossbill.

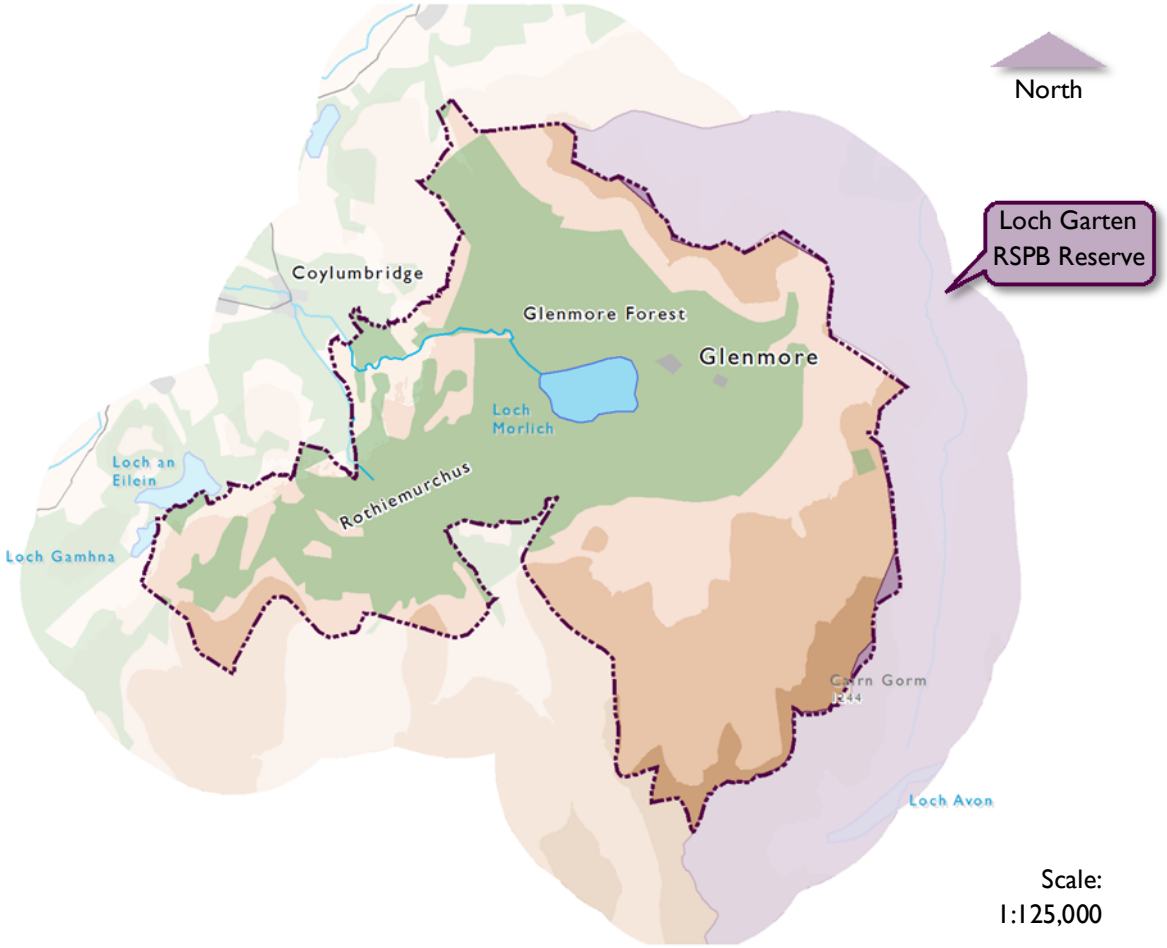

Figure 57 Relationship of Cairngorm and Glenmore Area with RSBP the Loch Garten RSPB Reserve.

Important Species and Habitats

There are around 1,200 species considered to be important for nature conservation within the National Park. Of these, 26 have been identified for priority action within the Cairngorms Nature Action Plan (CNAP) 2013-2018.

The CNAP also identifies the National Park's threatened habitats, which are broader than those afforded special protection as designated sites. Despite covering a relatively small area, Cairngorm and Glenmore are home to a number of these habitats. For the purpose of discussing them and the priority species that depend on them, they are described here under three headings, namely:

- Woodlands (p. 142),
- Freshwater, Wetlands & Wet Grassland (p. 149), and
- Uplands (p. 153).

Woodlands

The Cairngorms National Park contains the most extensive tracts of Caledonian forest in Britain, comprising pine, juniper and broadleaved species (**Figure 58**). It alsocontains the best examples in Scotland of bog woodland, montane willow scrub and stands of aspen. Native tree species comprise around 79% of these woodlands, representing a quarter of the entire Scottish native woodland resource.

Glenmore Forest lies on the north-west slopes of Cairn Gorm and is predominantly a Caledonian pine forest growing over a variety of glacial and fluvial-glacial deposits and landforms.

It has been notified as an SSSI for its geomorphological features, native pine woodland which includes bog woodland habitats, its associated assemblage of flowering plants and its populations of Capercaillie, Scottish crossbill and narrow-headed ant. The forest is an important and linking component of the chain of native pinewoods stretching from Glenfeshie to Abernethy which together form the largest expanse of native pinewood remaining in the UK. Combined, these pinewoods are thus of considerable national and European importance.

Much of the woods are self-sown native pinewood together with a similar area of planted Scots pine of local origin which is now being managed for conservation. The pinewoods are mainly of the more eastern type of Caledonian pine woodland, which is characterised by a well-developed moss layer of 'feather' mosses, and few if any Atlantic bryophytes. In damp microclimates, especially along the upper margins of the pinewoods, for example in Rothiemurchus Forest, sphagnum mosses become abundant in the moss layer.

The woods contain a complete range of variation in age class and individual growth form of trees, and in forest structure and density. Birch (*Betula pendula*) and juniper (*Juniperus communis*) are widespread and locally abundant, and there is also a good deal of rowan (*Sorbus aucuparia*), some aspen (*Populus tremula*), and, on damp, richer soils, especially alluvium, an abundance of alder (*Alnus glutinosa*), and a little holly (*Ilex aquifolium*).

The Cairngorm pinewoods' field layers are not floristically rich but they have a very characteristic flora, comprising widespread woodland species such as wavy hair-grass (*Deschampsia flexuosa*) and common cow-wheat (*Melampyrum pratense*) combined with a more distinctive northern element represented by species such as lesser twayblade (*Neottia cordata*), and ostrich feather-moss (*Ptilium crista-castrensis*), and more locally by twinflower (*Linnaea borealis*), Small cranberry (*Vaccinium microcarpum*) , One-flowered wintergreen (*Moneses uniflora*; Red Data book), Intermediate wintergreen (*Pyrola media*) and serrated wintergreen (*Orthilia secunda*). The pine woodland flora is diversified by the addition in the more open pine stands at higher altitudes of arctic-alpine species such as mountain crowberry and interrupted clubmoss.

The pine woodland shows interesting transitions to a wide range of peatland and heathland vegetation types, including bog woodland, which is home to willow (*Salix*)

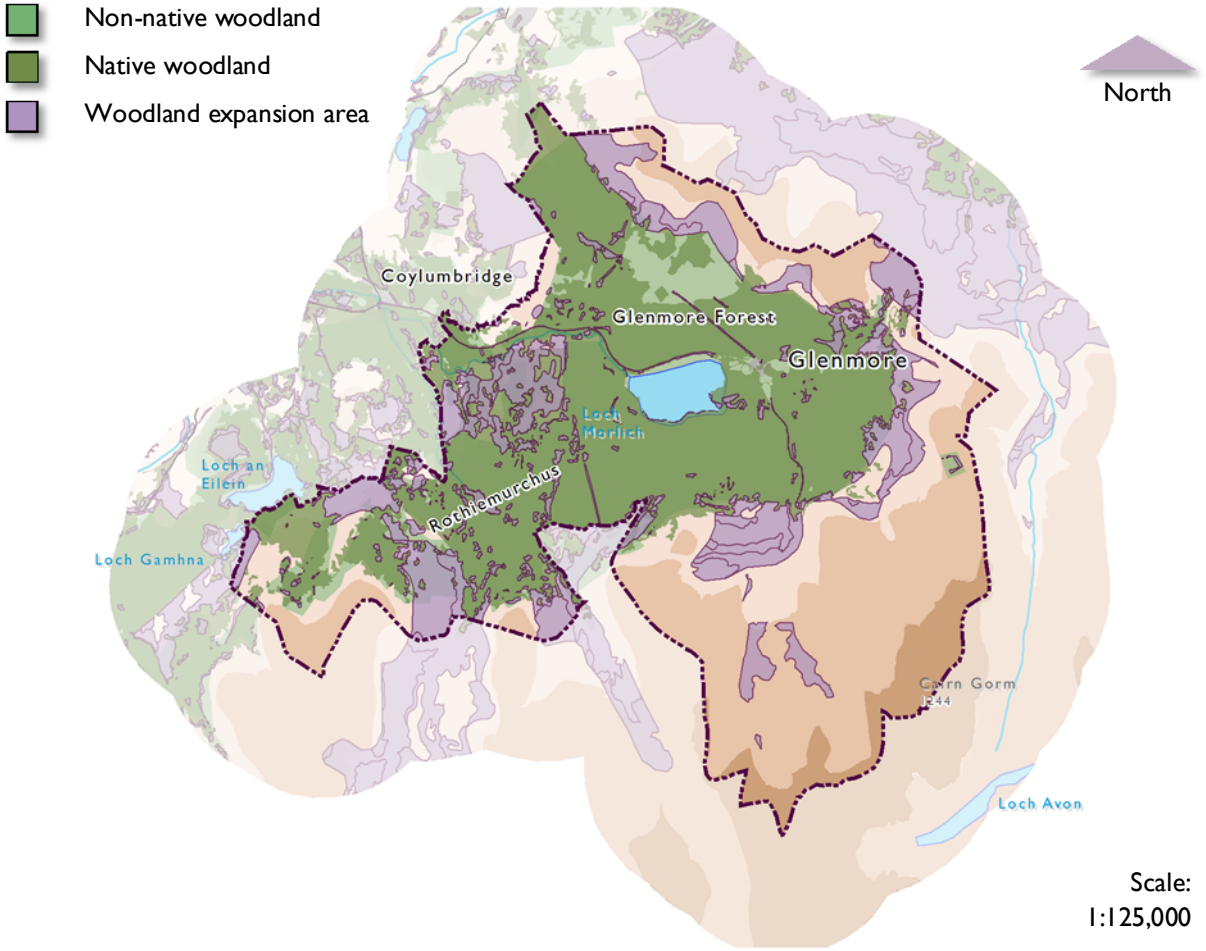

Figure 58 Areas of woodland and woodland expansion in the Cairngorm and Glenmore area.

species and Scots pine (*Pinus sylvestris*) , and subalpine scrub.

At lower altitudes scattered tree regeneration of birch, willow, rowan and Scots pine is expanding on to areas of open heath whilst at higher elevations a natural tree line is developing.

Juniper scrub is a feature of the Cairngorm pinewoods and some areas of grassland and moorland beyond the present extent of woodland, for example near Loch Avon. At higher altitudes, the juniper is progressively stunted, becoming transitional to the dwarfed subspecies (*nana*). The Cairngorms are of European importance for its juniper formations.

The forest is home to populations of Scottish crossbill (*Loxia scotica*), Capercaillie (*Tetrao urogallus*), and narrow-headed ant (*Formica exsecta*). Raptors such as Osprey (*Pandion haliaetus*) regularly hunt over Loch Morlich, while Peregrine falcon (*Falco peregrinus*) and Merlin (*Falco columbarius*) are intermittent breeders and regular hunters over the site. On rare occasions,

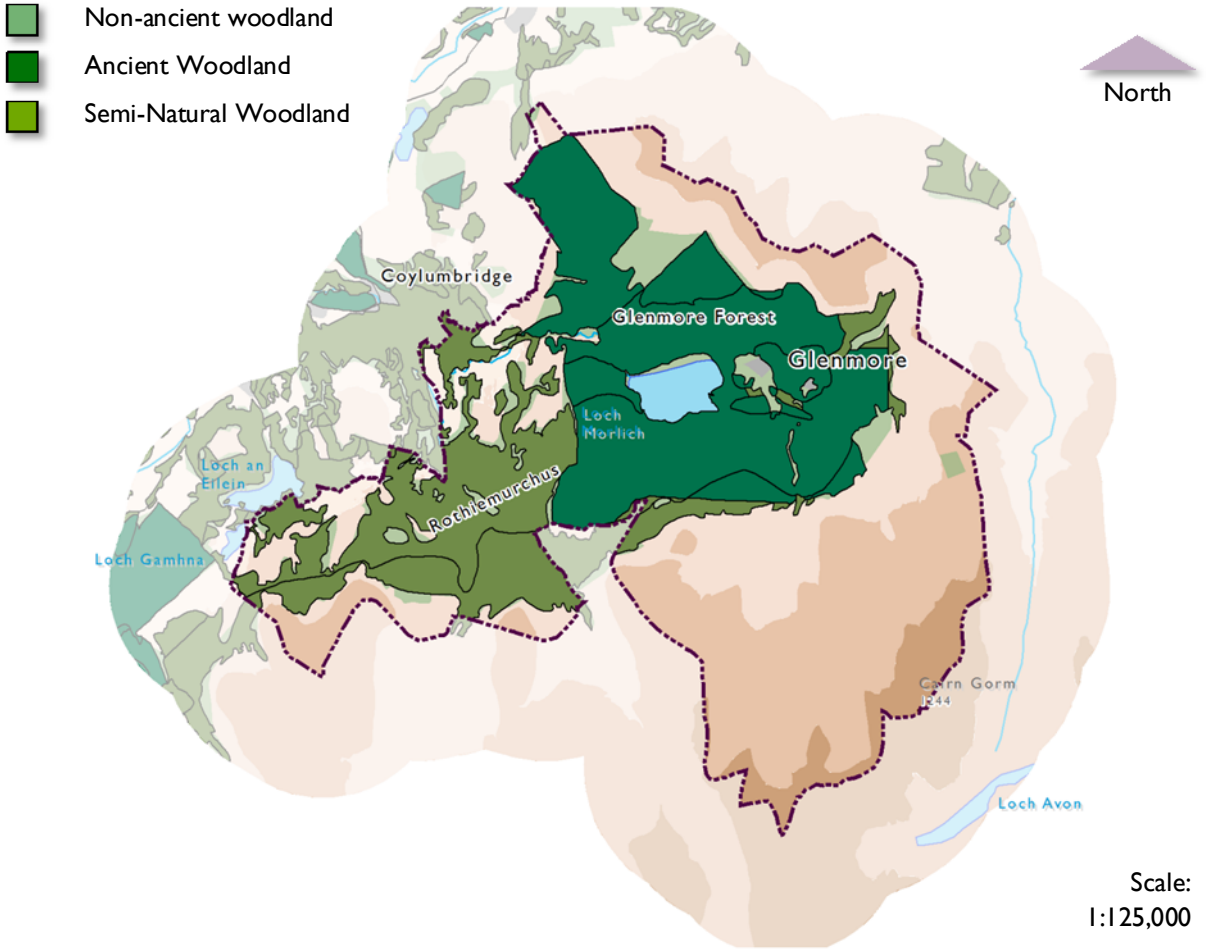

Figure 59 Areas of ancient woodland in the Cairngorm and Glenmore area.

Dotterel (*Charadrius morinellus*) use the upper parts of the forest, usually when snow forces them to lower levels in spring.

Around 32 km^2 of the woodland within the Cairngorm and Glenmore area has been identified on SNH's Ancient Woodland Inventory (**Figure 59**). Of this, around 12km^2 has been identified as being semi-natural. Ancient woodland is defined as land that is currently wooded and has been continually wooded, at least since 1750. This type of woodland has important biodiversity and cultural values by virtue of its antiquity.

Improved connectivity through woodland expansion combined with good management is crucial to enhance habitat that supports species of high conservation value. The CNPA Woodlands Expansion programme (Cairngorms National Park Authority, 2008) actively promotes this and in combination with the Cairngorms Deer Management Framework (Cairngorms National Park Authority, 2011) aims to ensure greater connectivity and management.

Table 14 Woodland species selected for targeted action in CNAP (Cairngorms National Park Authority, 2013).

Species	Status in the CNP
Capercaillie *Tetrao urogallus*	Capercaillie are found almost exclusively in Caledonian Pine Forest. Including Anagach, Rothiemurchas and Abernethy woods. Capercaillie chicks feed on moth caterpillars feeding on blueberry plants, adults and older chicks feed on leaves and berries, during winter they feed on pine needles.
Scottish Wildcat *Felix sylvestris*	The Scottish wildcat is a rare, elusive and largely nocturnal species confined to the most thinly populated parts of the UK. Main threats to the survival of the species in Scotland were: hybridisation with feral or domestic cats, being inadvertently killed during feral cat control operation and disease.
One-flowered Wintergreen *Moneses uniflora*	This plant used to be called St Olaf's Candlestick. It has a single nodding white flower at the top of a stem, and a rosette of leaves at the base. Key threats are the loss of the old Caledonian Forest and the harvesting of commercial forests.
Twinflower *Linnea borealis*	Twinflower is an Artic-alpine flower which is a relic of the ice age it has a stronghold in Strathspey. It is dependent on the open canopy of Caledonian Pinewoods.
Green Shield-moss *Buxbaumia viridis*	The Green Shield-moss is a rare and endangered species which grows on decaying wood. The loss of woodland cover over the centuries and, more recently, the intense management of woodland areas has led to a significant loss of habitat for this bryophyte species.
Pine Hoverfly *Blera fallax*	The Pine Hoverfly is found in only two locations in the UK in Strathspey. It needs rotten tree stumps that are more than 40 cm in diameter to breed. The lack of these large stumps in pinewoods – especially stumps with the necessary rot conditions – has been the cause of the decline.

Key Woodland Species

The CNAP species which have been selected for targeted action and are dependent on woodland habitat are listed in **Table 14**. Glenmore Forest is a key site in supporting these species.

Working in partnership, the CNPA is involved in projects aimed directly at improving the status of woodland habitats and associated species, some of which were listed in **Table 14**, within the Cairngorms National Park, these include:

Capercaillie Framework

Capercaillie populations in Scotland have declined significantly from an estimated 20,000 birds in 1970 to around 1,285 at the most recent national winter survey in 2009/10 (Ewing *et al*. 2012).

The Cairngorms National Park holds a significant proportion of the national population – at least 75% of the national number of lekking males, with the majority in Strathspey (Eaton *et al*. 2007; Poole, 2010) (**Figure 60**).

Species	Status in the CNP
Pearl-bordered fritillary *Boloria euphrosyne*	Changes in woodland management over recent years have led to the decline of the species. Woodland practices such as coppicing and thinning are in decline, and many areas have been planted with conifers. Woodland rides and clearings have become increasingly shady and overgrown. Bracken habitats are no longer managed through grazing
Dark bordered beauty *Epione vespertaria*	A small yellow- orange moth with brown bordered wings. The caterpillar feeds on young suckering aspen, which requires particular levels of grazing. Only found in a handful of locations in the CNP.
Scarlet splash fungus *Cytidia salicina*	This fungus appears as a bright red splash on the underside of dead willow branches, especially those lying close to the ground. It has only been recorded 14 times in Scotland most of these records are in the CNP,
Kentish Glory *Endronis versicolora*	Kentish Glory, a large day flying moth is found in open birch woodlands. Both sexes are brown with white markings on the forewings.
Wood Ants	There are four species considered for action: *Formica aquilonia*, *F. lugubis, F. exsecta* and *Formicoxensus nitidulus.* They perform a number of important roles in the forest ecosystem, earning them the status of "keystone" species, these are species which play critical roles in the structure of their ecological community. Changes in woodland management, deforestation, inappropriate afforestation, urban expansion, human disturbance and agriculture are all linked to the loss of suitable habitat for woodland ant species.

Although capercaillie numbers have held up in Strathspey in recent years, the population is now extremely vulnerable elsewhere. Capercaillie persist in other areas (Deeside, Donside, Easter Ross, Moray and Perthshire) but these populations are smaller and more fragmented.

The Strathspey capercaillie population is crucial to the long-term survival of the species in the UK. The Capercaillie Framework (Cairngorms National Park Authority, 2015) aims to improve conservation for Capercaillie by the introduction of landscape scale measures to target the main threats of disturbance, predation, collision with deer fences, unsympathetic woodland management, habitat loss and fragmentation.

Increased disturbance resulting from development and recreation can have a significant effect on Capercaillie usage of habitat for example Capercaillie have been shown to avoid habitat close to tracks,

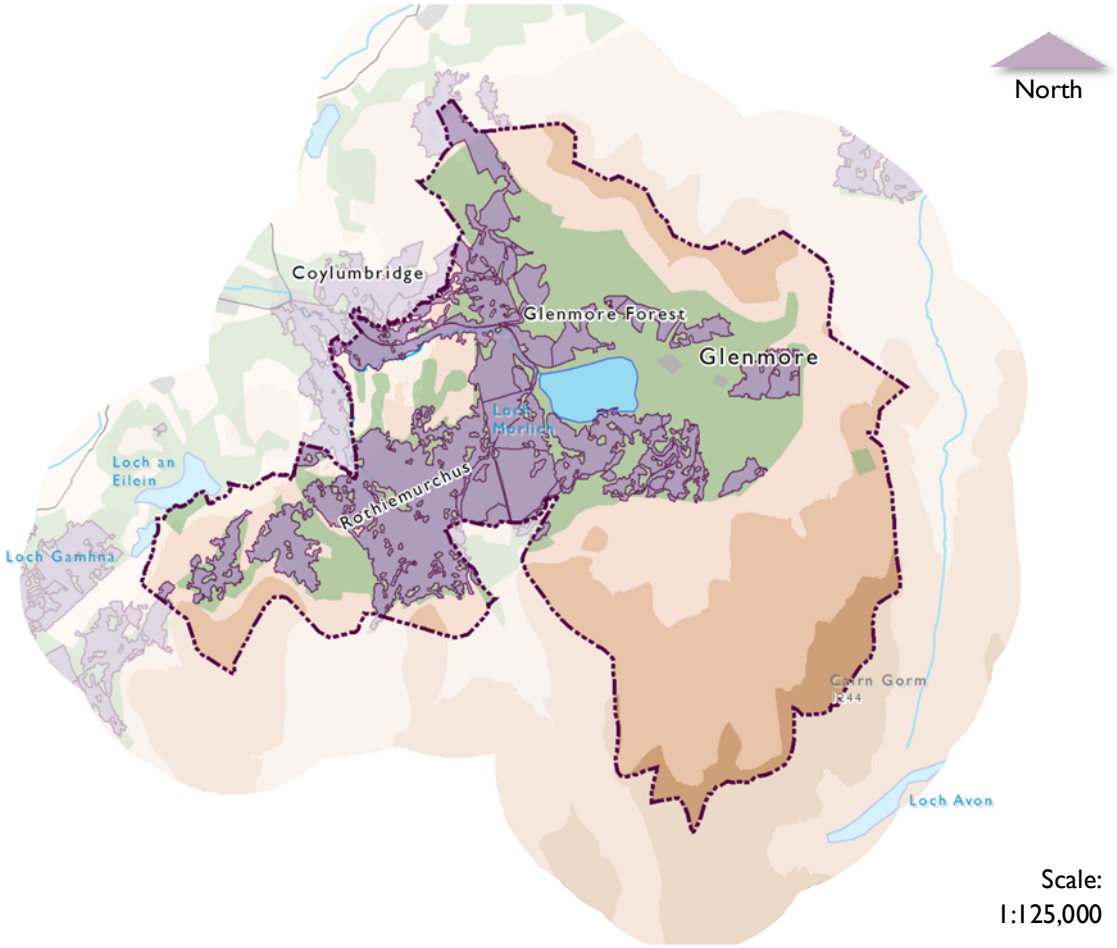

Figure 60 Areas where Capercaillie have been sighted in the Cairngorm and Glenmore area since 2007.

which may reduce overall carrying capacity in forests with a high density of tracks (Rosner *et al*. 2013). A study at Abernethy forest estimated that 21-41% of suitable woodland habitat could be lost due to avoidance of tracks (Summers *et* al. 2007). To ensure these factors are considered the framework integrates habitat management, recreation and development plans as outlined in the Cairngorms Nature Strategy (2012-2018), Active Cairngorms (2015) and the Local Development Plan (2015) and suggests mitigation packages be developed to ensure no impact on Capercaillie.

Red Squirrel of the Highlands

The Cairngorms National Park is one of the last strongholds for Red Squirrel in the UK. Grey Squirrels are larger than the native reds and were introduced to the UK from America and Canada in the early 1900's. They pose a serious threat to the survival of the red squirrel population through transmission of the deadly squirrel pox virus that the grey squirrel carries. Grey squirrels are occasionally seen moving up the River Dee from Aboyne or moving up the River Garry from Pitlochry. The Red Squirrels of the Highlands Project is working to monitor and conserve Red Squirrels in the National Park.

Wildcat - Tiger of the Highlands

The project raised awareness of the wildcat's plight using a campaign branded '*Highland Tiger*'. It worked with a range of partners and interest groups to safeguard surviving Scottish wildcat populations and create favourable conditions for the species to thrive in the future. Part of the project was aimed at assisting gamekeepers to confidently identify wildcats to ensure they are not inadvertently culled through otherwise legal predator control activities. The project also worked with vets and cat welfare charities to encourage responsible cat ownership and the expansion of feral cat trapping and neutering. SNH have produced the Scottish Wildcat Conservation Action Plan 2013-2018, which details three wildcat conservation areas within the National Park.

Deer

There are four species of deer found within the Cairngorms National Park, all contributing to different extents to the biodiversity and economy of the area. The UK's largest wild land mammal, Red deer are common in most areas of the National Park and have long been central to the cultural and natural heritage of the Highlands. Their economic importance and significant positive and negative impacts on the land means that their careful management is critical, and at times causes controversy.

Roe Deer are also numerous in the National Park and are a common sight on lower ground in and around woodlands. Although less high profile, they are popular with wildlife spotters and are valued for venison, but can cause damage to young trees and crops.

Non-native Sika Deer are present in much smaller numbers and are of concern because of their potential to interbreed with Red Deer.

The unique herd of semi-domestic Reindeer in the National Park are important mainly as a tourist attraction. The Cairngorms Deer Advisory Group is a forum to promote and advise on best practice deer management within the Cairngorms and is formed from local deer group members. In partnership with the CNPA they have produced The Cairngorms Deer Management Framework (Cairngorms National Park Authority, 2011).

Freshwater, Wetlands & Wet Grassland

A mosaic of wetland habitats with fens, bogs, woods, wet grassland and open water provides a home to a rich array of wildlife. The National Park is one of the most important sites for breeding waders due to the combination of wetlands, wet grassland and low-intensity mixed farming. Even so, birds such as lapwing and redshank have seen dramatic declines in numbers in recent years.

The Cairngorms has the largest extent of wet-heath in north-east Scotland, mainly of the more heathy eastern type characterised by *Sphagnum compactum*, with the more herbaceous western type on some of the more strongly flushed soils. The occurrence of undisturbed lichen-rich wet-heath alongside sub-alpine and alpine heath on high altitude, windswept slopes is of particular importance. Wet-heath is also present alongside bog and dry heath in open areas within the upper parts of the pine forest, giving a variety of ecological transitions.

There are a wide range of bog types from basin, valley and terrace mires to high level watershed mires, and the full range of bog vegetation types characteristic of the Eastern Highlands, and also small areas of mire very closely resembling Western blanket bog. The bogs at lower altitudes, in basins and valleys and on terraces within the forest, are mainly dominated by or rich in sphagnum species. Above the forest, in the glens, on some of the valley sides, and on the watersheds, the blanket bog is generally dominated by various dwarf shrubs and cotton grasses with a lower diversity of sphagnum mosses. Ling heather and to a lesser degree cross-leaved heath are the most abundant dwarf-shrubs in the glens and on the lower watersheds, with blaeberry and common cowberry becoming abundant in some areas, particularly on the valley sides. On the highest watersheds which have any significant development of peat, these latter species become dominant as ling heather fades, forming another distinctive sub-type, often referred to as high-level blanket mire.

Notable species on the blanket bogs include dwarf birch and small cranberry, which are both scattered above 450m, and northern bilberry, which is frequent on many of the high-level bogs.

The Cairngorms supports a wide range of soft-water spring vegetation types. At moderate to high altitudes these springs are generally dominated by either the moss *Philontis fontana*, or, more locally, especially at higher altitudes in the western corries, by dense cushions of the liverwort *Anthelia julacea*. At high altitudes, where the snow-lie is longest, and the irrigating waters from

the snow beds are the coldest, the spring-heads are dominated by spongy carpets of the moss *Pohlia wahlenbergii* var. *glacialis*. Arctic-alpines herbs associated with these springs include chickweed willow herb, alpine foxtail and alpine timothy grass. Rare bryophytes include the mosses *Pohlia ludwigii*, *Haplomitrium hookeri* and *Hygrohypnum molle*.

The area also supports the full range of mires associated with base-poor flushes at medium and high altitudes and rare species such as rare-flowering sedge and the moss *Sphagnum lindbergii*.

Due to the local occurrence of suitable rocks, base-rich flushes are not widespread in the Cairngorms. Despite their restricted distribution, these base-rich flushes are well developed, supporting vegetation types and species associated with both low to moderate and particularly high altitudes. These communities support arctic-alpine species such as Scottish asphodel, three-flowered and alpine rushes and are of national and European importance.

The waterbodies of area form part of the Spey River Catchment Area, which supports regular use by otters (*Lutra lutra*) and is an important spawning river for Atlantic salmon (*Salmo salar*). The River Spey also represents the northern part of the Sea lamprey's (*Petromyzon marinus*) range in the UK. Perhaps the most important feature of the Spey and its tributaries however is its outstanding freshwater pearl mussel population (*Margaritifera margaritifera*), which is considered to be of great international significance.

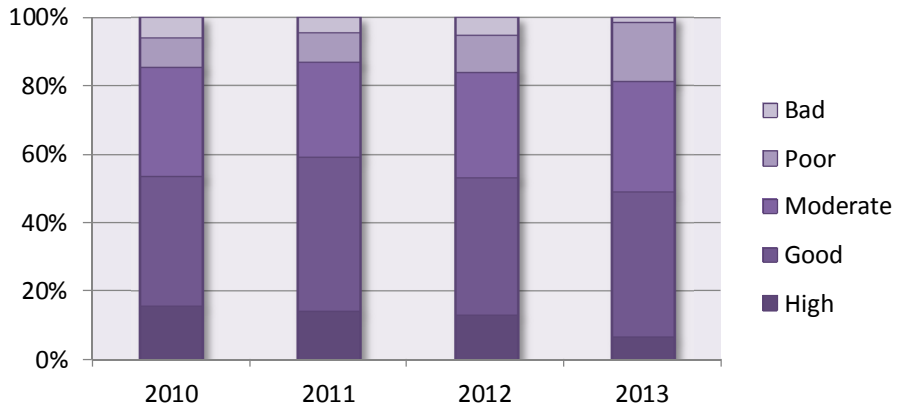

Figure 61 Ecological status of Spey Catchment Area waterbodies within and overlapping the Cairngorms National Park.
Source: http://www.sepa.org.uk/data-visualisation/rbmp-interim-planning-tool/

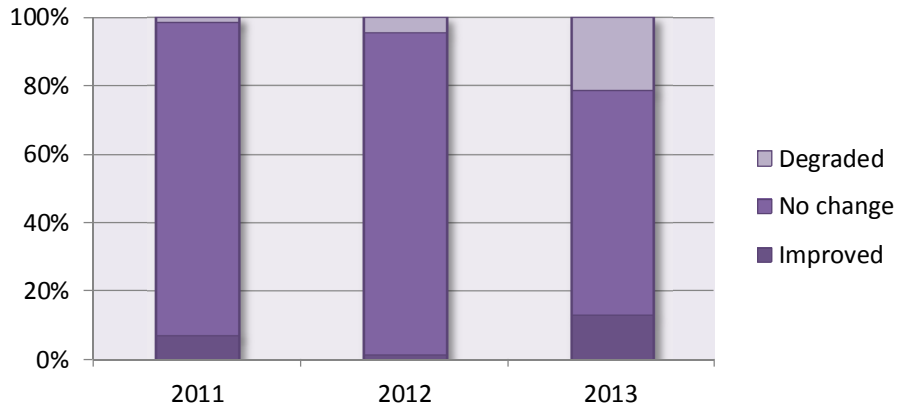

Figure 62 Change from previous year in the ecological status of Spey Catchment Area waterbodies within or overlapping the Cairngorms National Park

Within the forest, Allt Coire Chondiaich forms an interesting feature with native ferns and deciduous trees (birch, aspen and rowan) lining the incised banks. The rocky bed is a good habitat for aquatic invertebrates and this stream discharges into Loch Morlich.

The WFD Classification places a requirement on SEPA to monitor the ecological status of waterbodies and its ability to continue to function as such. Within the Spey Catchment Area around 50% of waterbodies are classified as being at good or better ecological status (**Figure 61**), however, recently the ecological status of many waterbodies within the area has been on the wane (**Figure 62**). See **Topic 3: Water** (p. 85) for further information on the quality of waterbodies in the National Park.

Key species for focused action

The CNAP species which have been selected for targeted action and are dependent on Freshwater, Wetlands & Wet Grassland habitat are listed in **Table 15**.

Table 15 Freshwater, Wetlands & Wet Grassland species selected for targeted action in CNAP (Cairngorms National Park Authority, 2013).

Species	Status in the CNP
Lapwing *Vanellus vanellus*	Breeding lapwings are in decline in Strathspey, the Waders and Wetlands Project aims to research reasons for the decline and work with landowners to encourage sympathetic land management.
Northern damselfly *Coenagrion hastulatum*	This a very rare and localised species with almost all known lochan locations within the CNP, it is very similar to Common blue damselfly but has a distinctive 'ace of spades' marking.
Northern silver-stiletto fly *Spiriverpa lunulata*	Stiletto larvae are long, thin, white and worm-like. They are ferocious predators with a glossy hard skin that lets them slither through dry sand as they chase their insect prey. Habitat needs – exposed sand and shingle on river banks
Freshwater pearl mussel *Margaritifera margaritifera*	The freshwater pearl mussel *Margaritifera margaritifera* grows to 140 mm in length, and burrows into sandy substrates, often between boulders and pebbles, in fast-flowing rivers and streams. It is sensitive to heavy siltation and requires high water quality.
Northern February red stonefly *Brachyptera putata*	The Northern February red is a freshwater species endemic to Britain, found mainly in Scottish upland streams. Due to its rarity and decline in numbers this insect has been made a Priority Species on the UK Biodiversity Action Plan (BAP).

The Cairngorm and Glenmore area has a role to play in supporting these species.

Working in partnership, the CNPA is involved in projects aimed directly at improving the status of wetland habitats and their associated species within the Cairngorms National Park, these include:

River Spey Catchment Initiative

The River Spey Catchment Initiative aims to co-ordinate partnerships to deliver

integrated catchment management. The main objective of the Initiative is to meet WFD good status within the catchment and to address barriers to fish, tackle diffuse pollution and improve river morphology.

Strathspey Wetland and Waders Initiative

The Strathspey Wetlands and Waders Initiative (SWWI) was set up to work with farmers and other landowners to safeguard wetland habitats and the future of the nationally important wader population in Badenoch and Strathspey - the largest of its kind in mainland Britain.

Pearls in Peril

'Pearls in Peril' (PIP) is a UK wide LIFE funded nature project with 22 partners working together to restore river habitats benefiting freshwater pearl mussel and salmonids. A total of 48 actions will be delivered across 21 rivers designated as SACs for freshwater pearl mussel. The freshwater pearl mussel (M*argaritifera margaritifera*) is declining dramatically throughout its range. Mussel populations have been affected by multiple issues, including wildlife crime – pearl fishing was legal until 1992, habitat degradation and declining water quality. This project will help to safeguard the future of the most important pearl mussel populations in the UK by tackling these threats and implementing best practice conservation methods.

A recent survey of FWPM sites in the River Spey highlighted a 50% decline in the population (Sime, 2014), meaning the status of FWPM in the River Spey SAC is currently classified as unfavourable and declining. The reasons for this are still under investigation but are attributed to water quality, especially nutrient levels; an increase in the abundance of water crowfoot (*Ranunculus* spp.) in the middle and lower Spey; low river levels in the middle and lower reaches which have killed established mussel beds; illegal fishing and no recruitment of juveniles in the middle to upper reaches which means the distribution will gradually contract as older mussels die.

Uplands

The Cairngorms are considered to be one of the most spectacular mountain areas in Britain and support a rich arctic montane flora. Upland heath is the most extensive habitat due mainly to human activities such as felling, burning and grazing which prevents natural tree regeneration and drainage to allow grouse and red deer hunting. Blanket bog is the second most extensive habitat and is mainly *Calluna-Eriophorum* dominated blanket mire (**Figure 63**).

Montante scrub is where dwarf trees and shrubs grow above the natural tree line. Dwarf willows, birches and juniper grow in a low twisted, wind-pruned form together with a variety of flowering plants, fungi, lichen and insects. The best example of a continuous treeline in Britain is at Creag Fhialach above Inshriach where a complex of Juniper and birch scrub grows at 550-650m.

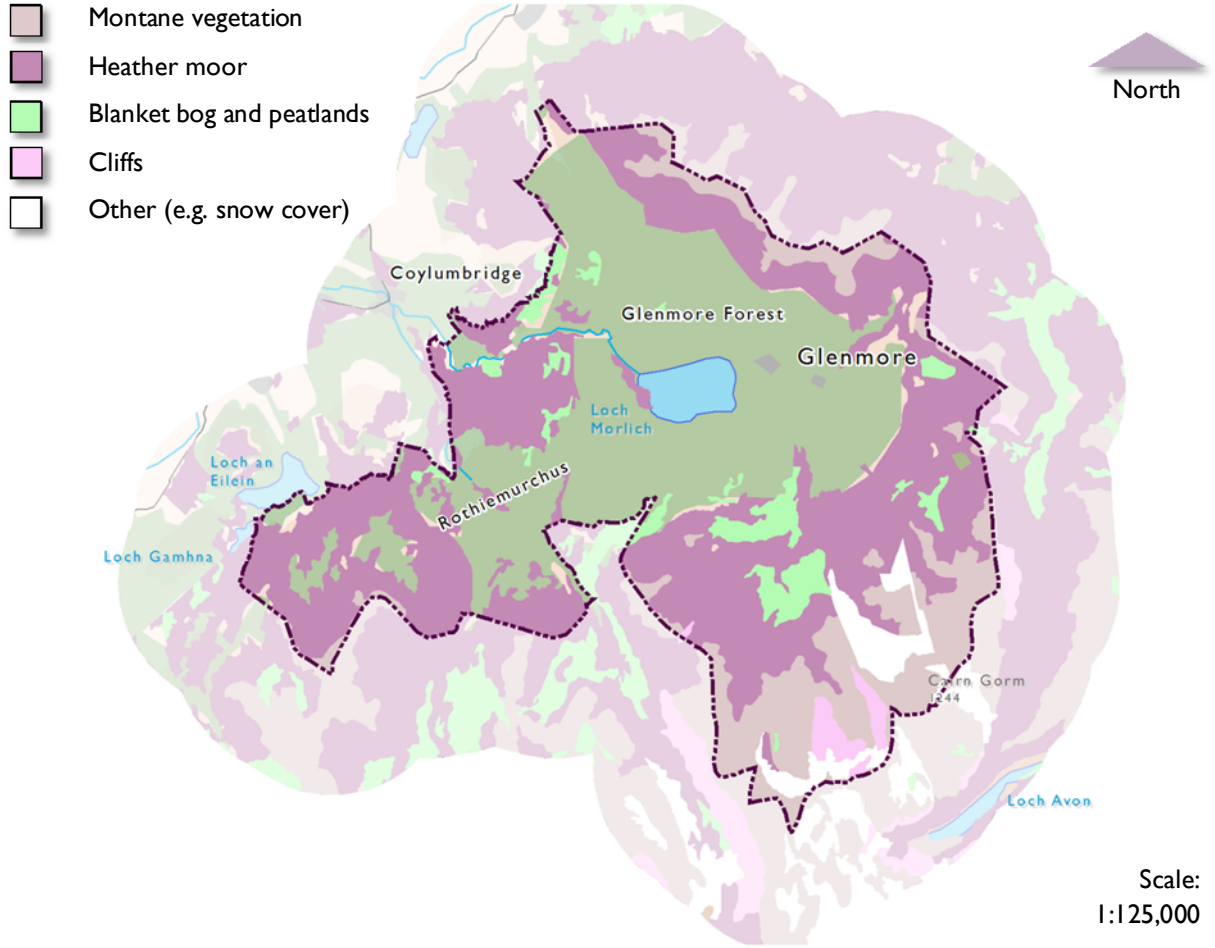

Figure 63 Upland land cover types within the Cairngorm and Glenmore area (Scottish Soil Survey Staff, 1981).

The Cairngorms are the most important mountain area in Britain for biological and geological/geomorphological conservation.

The Cairngorms include the greatest area of high land in Britain, and this, combined with their relatively continental position, make low winter temperatures, cool summers and a short growing season notable features of the environment. As such the Cairngorms may be regarded, climatically, geomorphologically and biologically, as the most extensively 'arctic' area in Britain. A wide range of habitats and animal and plant species are found here, including many which are rare or scarce in Britain or Europe as a whole.

Ranging from 260 – 1,309 metres above sea level, the mountains are home to a full range of submontane and montane habitats characteristic of the eastern Highlands, from native Scots pine woodland to subalpine and alpine heathland and grassland habitats. In addition, the massive summit plateaux and broad watersheds, with a considerable land mass above 1,100 metres, allow prolonged snow cover in a variety of situations and in turn give rise to a greater range and extent of late snow-influenced vegetation than in any other mountain system in Britain. Examples of some of the most natural plant habitats in Britain are found on the mountains. Individual habitats and species are of national and/or European importance in their own right, but the value of the Cairngorms is accentuated by the range of habitats associated with the range of altitude, aspect, soils etc.

As the bedrock is primarily acidic granite, and as the glacial drift which covers many of the lower hillsides is derived from such, the Cairngorms' vegetation is dominated mainly by acid-tolerant plant species.

Montane habitats

The Cairngorms has the most extensive tracts of sub-alpine and alpine heath in Britain and the full range of sub-alpine and alpine heaths characteristic of the Eastern Highlands. Snow-bed heaths are better developed than on any other site and there is superlative development of wind-pruned and patterned lichen-rich heath, including fine examples of "wave vegetation". An unusual feature of the lichen-rich heath is the large area in which bearberry is co dominant with ling heather. Lichen-rich heather-dominated heath is more extensively developed on the Cairngorms than anywhere else in Britain.

Heaths dominated by blaeberry and/or cowberry and rich in lichens and/or woolly hair-moss are also extensive, reaching the highest altitude of heathland in Britain. The lichen-rich heaths dominated by blaeberry and cowberry feature unusually abundant trailing azalea. Damp heath associated with snow beds or other damp micro-climates, such as the upper margins of pinewoods, and dominated by either heather or blaeberry, is more extensive than on any other site in Britain. Other snow-bed types of blaeberry heath are also well developed. There is an extensive development of heath on solifluction terracing. In addition, there are extensive transitions to lichen-poor heather-dominated heath types, and to wet-heath, blanket bog, montane acid grassland,

late snow-bed vegetation and, more locally, to juniper scrub.

The heath of windswept slopes and summits above 750 m supports the majority of the British population of the lichen *Alectoria ochroleuca* (alpine sulphur tresses), a characteristic species of Scandinavian lichen heaths, which is rare and declining in Britain, possibly as a result of climate change.

The Cairngorms has the largest tracts of alpine communities dominated by combinations of grasses, sedges, rushes and mosses in Britain. These alpine communities, developed largely on granite, and to a lesser extent, on base-poor schists, comprise the full range of montane acid grassland communities, their combined extent being greater than that of any other site in Britain.

The three-leaved rush community is particularly well developed, with the full range of subtypes varying from co-dominant woolly fringe-moss to open tussocky, lichen-rich areas. The extent of this community on the Cairngorm mountains far exceeds that any other area in Britain.

Extensive areas of the plateau are dominated by stiff sedge and woolly fringe-moss, particularly on the western spurs and ridges. Due to the predominance of base-poor granites and schists, this community is largely species poor and overwhelmingly dominated by woolly hair-moss, but locally, on more base-rich outcrops, as at the head of the Slochd Mor and at Glean Einich, there are also small areas of moss-heath which are rich in dwarf herbs, principally alpine lady's mantle and dwarf campion. The rare lichen *Cladonia pleurota* is found in moss-heath.

In areas of the plateau where snow lies a little deeper there are beds of dense, short matt-grass. These support two very rare lichen species, *Cladonia maxima* and *C. sticta*, the latter of which is restricted to the Cairngorms in Britain. The rare lichen *Cetraria delisei* is also present in these snow-bed grasslands, particularly in areas of sedge-heath dominated by stiff sedge, where the snow lies later into the summer.

Dwarf-willow and moss-dominated communities of late snow-beds are the most extensive and well-developed in Britain. Rare arctic-alpine herbs found here include starwort mouse-ear and drooping woodrush. The areas of late snow-lie also support rare bryophytes such as the mosses *Polytrichum sexangulare* (*norvegicum*) and *Andreaea nivalis*, and the liverworts *Moerckia blyttii* and *Pleuroclada albescens* and the very rare *Marsupella arctica* and *Gymnomitrion apiculatum*. Some northern Atlantic bryophytes are also found in this habitat, including rare species such as the liverworts *Scapania umbrosa* and *Anastrophyllum donnianum*.

Wet ground and melt-water streams associated with areas of late snow lie support a number of very rare bryophytes and lichens, including the moss *Hygrohypnum molle*, the liverwort *Marsupella sparsifolia*, and the lichens *Staurothele areolata* and *Bellemerea alpina*, the latter in its only British station.

Herb-dominated vegetation of slopes irrigated by melt waters, characterised by

alpine lady's-mantle and least cinquefoil, is also finely developed.

Dwarf-shrub heath and grassland

The Cairngorms has the largest extent of dry heathland in Britain and the full range of sub-montane heaths characteristic of the Eastern Highlands, characterised by ling heather, blaeberry and bearberry, including some of the largest areas of bearberry-rich sub-montane heath in Britain, and the most extensive snow-bed forms of blaeberry heath in the Eastern Highlands.

The calcareous schists in Glen Feshie support species-rich calcareous grassland. Both of the two main types of this habitat, characterised by wild thyme and alpine ladies'-mantle, are present, and there are interesting transitions to alpine calcareous grassland at high altitudes.

Species which thrive on lime-rich soils (calcicoles) include a number of arctic-alpines such as alpine cinquefoil, yellow mountain saxifrage, hair sedge and alpine meadow rue.

Areas of alpine calcareous grassland characterised by mountain avens are found locally along Glen Feshie including on the steep crags and ledges of Coire Garbhlach, with very small areas are also present at the head of Glen Einich. Glen Feshie supports a number of rare arctic-alpine herbs, including rock whitlow grass, alpine saxifrage, alpine mouse-ear, rock speedwell, rock sedge and black alpine sedge. A number of montane willow species are also found here, including whortle-leaved, downy and the rare woolly willow. The calcicolous bryophyte flora of Coire Garbhlach is very rich with several very rare species are present, including the mosses *Saelania glaucescens*, *Ctenidium procerrimum*, *Schistidium artofuscum* and *Weissia controversa* var. *wimmerana*. *S. glaucescens* is an especially protected species, as listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).

Scree and rocks

There are extensive areas of scree on granite at a range of altitudes in the Cairngorms and these support diverse and representative examples of high-altitude acidic scree communities which are characteristic of the Eastern Highlands of Scotland. Of particular interest is the flora of high-altitude screes in the snowy corries, with parsley fern, alpine lady-fern and wavy meadow-grass.

Rare bryophyte species, on rocks and in and around snow-beds, are well represented and include the moss *Dicranum glaciale* and the liverworts *Tetralophozia setiformis* and *Marsupella adusta*.

High-altitude crevice habitats occur widely on the acidic granites of the Cairngorms and support an abundance of characteristic species. Rare species found here include Highland cudweed, spiked wood-rush and hare's-foot sedge.

Key species for focused action

Those Cairngorms Nature Action Plan species dependent upon upland habitat are listed in **Table 16**. Working in partnership, the CNPA is involved in projects aimed directly at improving the status of upland

habitats and their associated species within the Cairngorms National Park, these include: The Cairngorm and Glenmore area has a role to play in supporting these species.

Table 16 Upland species selected for targeted action in CNAP (Cairngorms National Park Authority, 2013).

Species	Status in the CNP
Golden eagle *Aquila chrysaetos*	Breeds in high altitude areas of the CNP. At threat from persecution and disturbance.
Alpine blue sow thistle *Cicerbita alpina*	Alpine blue-sow-thistle is a very rare plant in the UK; it grows on only four rocky ledges sites on the Cairngorm Massif. It was once part of a more widely distributed mountain flora that is today restricted by changing land management practices and increased levels of grazing.
Tufted saxifrage *Saxifraga cespitosa*	A cushion-forming, perennial herb of well-drained base-rich rocks. It is found on mossy ledges, in crevices and on boulder-scree slopes, it is in decline in the Cairngorms.
Powdered sunshine lichen *Vulpicida pinastri*	Records exist for the Eastern and Southern Cairngorms.

Golden Eagle

North East Scotland Raptor Watch began in 2006. It's a partnership project that aims to address the problem of declining populations of rare or endangered species of birds of prey that breed in the uplands of North East Scotland. The Raptortrack project is into its fifth year of satellite tracking specific raptors in the Cairngorms National Park. Three golden eagles are presently being followed.

Montane Scrub Expansion

High altitude birches, willows and junipers would have been much more prevalent in the Cairngorms in the past. Centuries of burning and heavy grazing by livestock and deer have taken their toll on trees and shrubs which grow only slowly amid the poor soils and exposed conditions found high in the Cairngorms. Cairngorms Nature is bringing landowners in the core of the national park together to help identify where all the remnants are and the condition they're in, and explore ways of enhancing and expanding them.

The Cairngorms SAC/SPA is a key site in the effort to expand mountain scrub. Some of the best cliff and scree flora in the Cairngorms is found high up in the cliff buttresses, ridges and deeply indented gullies of the Northern Corries. A number of rare species grow here including alpine saxifrage, Highland saxifrage, hare's-foot sedge, curved wood-rush and green shield-moss above the treeline in Creag Fhiaclach is one of the best areas for montane scrub in Britain.

Key Messages

The Cairngorms National Park is considered to be one of the richest and biodiverse places in the UK, being home to 25% of the UK's rare animal, insect, lichen, fungi and insect species. Consequently, large areas have are protected by various types of national and international nature designation.

Cairngorm and Glenmore are home to some of the National Park's richest habitats and consequently most of the area is protected by some form of designation, including NNR, SSSI, SAC and SPA. Many of the habitats are of broader importance owing to their connectivity with other areas.

The area is home to a number of important species that are currently at risk. Significantly, the woodlands around Glenmore are home to Capercaillie, a species that is particularly sensitive to disturbance from recreational activity.

The area falls within the River Spey Catchment Area, a river that provides habitat for an internationally important population of Freshwater Pearl Mussel. This species has been under particular pressure in recent years so careful consideration will need to be given to the potential off-site effects of the Strategy.

Inter-relationships with other topics