Cairngorms National Park Forest Strategy 2018

Strategic Environmental Assessment
Environmental Report

January 2018

Cover Note

PART 1

To: SEA.gateway@scotland.gsi.gov.uk
or
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PART 2

An SEA Environmental Report is attached for the plan, programme or strategy (PPS) entitled:

The Cairngorms National Park Forest Strategy 2018

The Responsible Authority is:

The Cairngorms National Park Authority

PART 3

Please tick the appropriate box

☑ The PPS falls under the scope of Section 5(3) of the Act and requires an SEA under the Environmental Assessment (Scotland) Act 2005. ***or***

☐ The PPS falls under the scope of Section 5(4) of the Act and requires an SEA under the Environmental Assessment (Scotland) Act 2005. ***or***

☐ The PPS does not require an SEA under the Environmental Assessment (Scotland) Act 2005. However, we wish to carry out an SEA on a voluntary basis. We accept that, as this SEA is voluntary, the statutory 5 week timescale for views from the Consultation Authorities cannot be guaranteed.

PART 4

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PART 5

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Date

31/01/2018

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List of Abbreviations

2000 Act	National Parks (Scotland) Act 2000
2005 Act	Environmental Assessment (Scotland) Act 2005
ABD	Aberdeenshire
AQMA	Air Quality Management Area
BARR	Buildings at Risk Register
BGS	British Geological Society
CA	Consultation Authority
CNAP	Cairngorms Nature Action Plan
CNP	Cairngorms National Park
CNPA	Cairngorms National Park Authority
EC	European Commission
EEC	European Economic Community
EIA	Environmental Impact Assessment
EU	European Union
FWPM	Freshwater Pearl Mussel
GCR	Geological Conservation Review
GHG	Greenhouse Gas
GP	General Practitioner
Ha	Hectares
HES	Historic Environment Scotland
JSA	Job Seekers Allowance
LA	Local Authority
LDP	Local Development Plan
LPA	Local Planning Authority
MW	Megawatts
NH_3	Ammonia
NFM	Natural Flood Management
NMVOC	Non-methane volatile organic compound
NNR	National Nature Reserve
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPF	National Planning Framework
NPPP	National Park Partnership Plan
NRS	National Records of Scotland
NSA	National Scenic Area
O_3	Ground-level ozone
ODPM	Office of the Deputy Prime Minister
PIP	Pearls in Peril
PKC	Perth and Kinross Council
$PM_{2.5}$	Particulate matter with particles with a diameter of 2.5 micrometres or less
PM_{10}	Particulate matter with particles with a diameter of 10

	micrometres or less
PPS	Plans, Programmes and Strategies
pSPA	Potential Special Protection Area
PVA	Potentially Vulnerable Area
RCAHMS	Royal Commission on the Ancient and Historical Monuments of Scotland
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SEP	Socio Economic Performance (Index)
SIMD	Scottish Index of Multiple Deprivations
SM	Scheduled Monument
SNH	Scottish Natural Heritage
SO_2	Sulphur dioxide
SPA	Special Protection Area
SPP	Scottish Planning Policy
SPRI	Scottish Pollutant Release Inventory
SSSI	Site of Special Scientific Interest
SW	Scottish Water
SWWI	Strathspey Wetlands and Waders Initiative
TTWA	Travel To Work Area
WFD	Water Framework Directive
UK	United Kingdom
UK GAP	United Kingdom Geodiversity Action Plan
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural

Non-Technical Summary

Introduction

Strategic Environmental Assessment (SEA) of the Cairngorms National Park Forest Strategy (CFS) is a statutory requirement under the Environmental Assessment (Scotland) Act 2005. SEA is a systematic process developed to ensure that potential environmental impacts of Plans, Programmes and Strategies (PPS) (both positive and negative) are assessed and considered during the course of their preparation.

Summary of the CFS Process

The CFS will provide the framework for the expansion and management of forests within the Cairngorms National Park

In particular, the CFS 2018-2038 will:

- Set out the vision for forests in the Park;
- Provide the strategic objectives for Forests to deliver the greatest benefit to biodiversity, rural development, local communities and visitors to the Park;
- Identify the Priorities required to meet the objectives in particular: native woodland creation and expansion; restoration and enhancement of existing woodland; creation and management of productive forests; diversification in forest use; increase local community benefit, and; increase recreation and access opportunities.
- Show how the aims of the National Park can be achieved together, benefiting people, nature and place.

Summary of the SEA Process

The SEA aims to:

- integrate environmental factors into CFS preparation and decision making;
- improve the CFS and enhance environmental protection;
- increase public participation in decision making; and
- facilitate openness and transparency of decision making.

The SEA process is divided into five main stages which are:

- Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope;
- Stage B: Developing and refining alternatives and assessing effects;
- Stage C: Preparing the Environmental Report.
- Stage D: Consulting on the draft CFS and its Environmental Report; and
- Stage E: Monitoring implementation of the CFS.

Summary of SEA Objectives

SEA Objectives have been developed as a result of the review of PPS (**Policy Context** and baseline information Identifying objectives is an important part of the SEA process as these will be used as the primary tool for testing the emerging Cairngorms National Park Forest Strategy to ensure it will not result in any significant environmental effects.

The SEA Objectives have been separated into 'main' and 'sub' objectives. It is important that the assessment process is proportional, practical and manageable. Consequently, the assessment process will utilise the 'main' SEA Objectives, but take account of the SEA Sub-Objectives. This distinction is important to ensure the assessment work is practical and achievable. The Objectives for the SEA of the Cairngorms National Park Forest Strategy are shown in **Table 3**.

Summary of the Assessment of Cairngorms National Park Partnership Plan

Generally, the CFS's outcomes and preferred policy options scored well in the assessment with some such as the 'improvement of woodland management' and the 'sustainable use of natural assets' assessed as providing only positive benefit

Less than 1% of assessments predicted potentially adverse effects, none of which were considered to be significant in nature if mitigation measures were put in place. For example issues relating to landscape can be mitigated by using deer fencing in less visible locations. Planting should only take place within designated sites where there is no risk of adverse effect on site integrity and for every new scheme risks of wildfire, non-native introduction and disease spread are factored in and mitigated.

Summary of Next Steps

The CFS will be out for public consultation between February-April 2018 and its Environmental Report will be submitted to the Scottish Government for approval.

Once the CFS has been approved a Post-adoption Statement will be published. The Post-adoption Statement will summarise how the CNPA took the findings of the SEA process into account and how environmental considerations more generally have been integrated into the CFS. It will also be stated within the Post-adoption Statement if any changes have been made to the CFS as a result of the SEA process and following responses to consultation. If changes have been rejected this will also be explained.

It will also be necessary for the CNPA to monitor significant effects following the adoption of the CFS in accordance with the Scottish Government's SEA Guidance (2013). This monitoring framework will be finalised in the Post-adoption Statement.

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Introduction

> "*The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.*"
>
> Directive 2001/42/EC

What is a Strategic Environmental Assessment?[1]

As part of the preparation of the Cairngorms National Park Forest Strategy (CFS) the Cairngorms National Park Authority (CNPA) is required under the Environmental Assessment (Scotland) Act 2005 to carry out a Strategic Environmental Assessment (SEA). SEA is a systematic method for considering the likely environmental effects of certain Plans, Programmes or Strategies (PPS). SEA aims to:

- integrate environmental factors into PPS preparation and decision making;
- improve PPS and enhance environmental protection;
- increase public participation in decision making; and
- facilitate openness and transparency of decision making.

The SEA process is divided into five main stages which are:

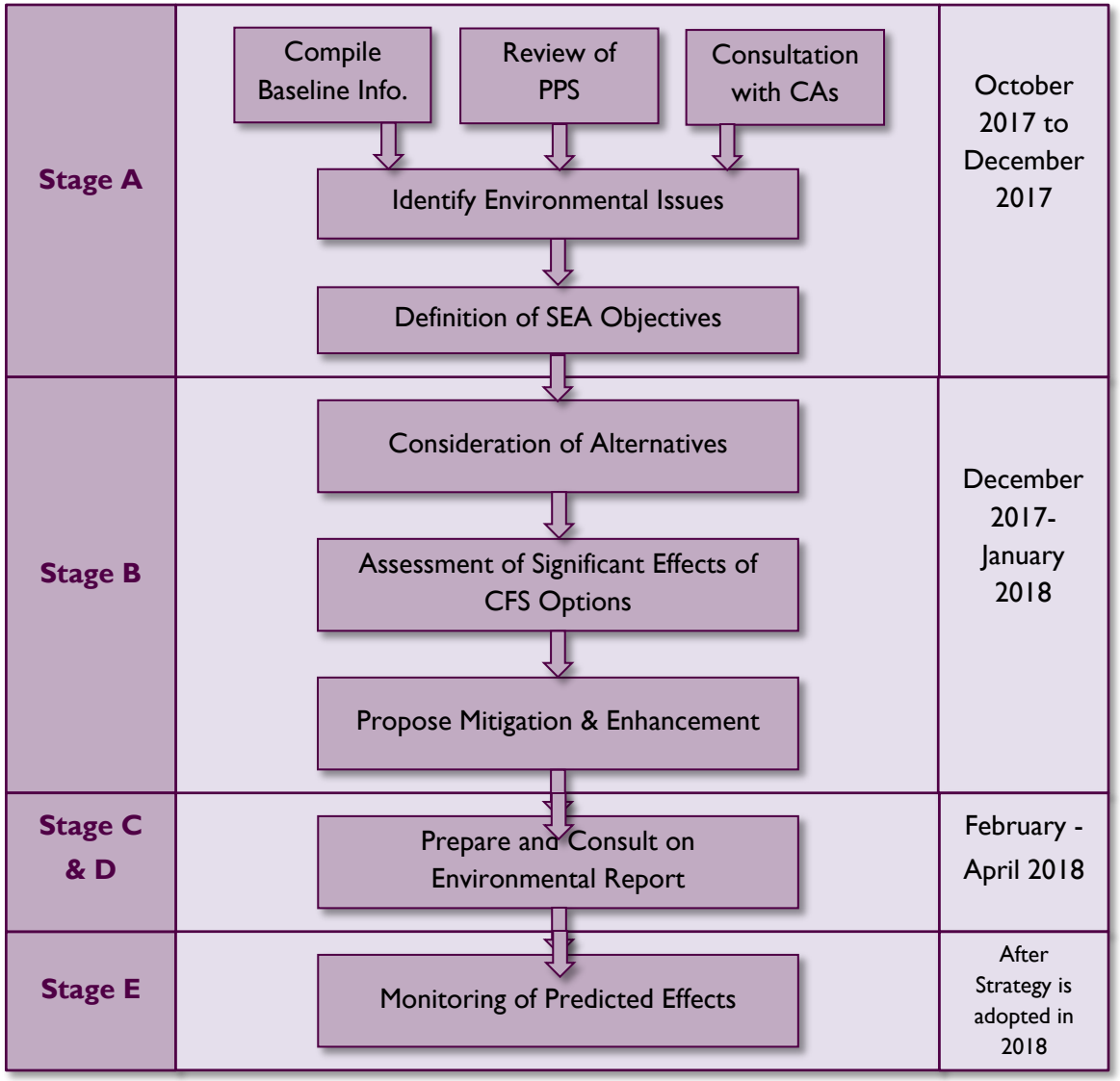
- Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope;
- Stage B: Developing and refining alternatives and assessing effects;
- Stage C: Preparing the Environmental Report.
- Stage D: Consulting on the draft CFS and its Environmental Report; and
- Stage E: Monitoring implementation of the CFS.

What is an Environmental Report?

This is the first 'Environmental Report' for the SEA of the CFS. This report represents **Stages C** and **D** of the SEA process (see Figure 1)

[1] A glossary of terms used in this report is provided in Appendix 5.

Figure 1 Stages of the SEA of the Cairngorms National Park NPPP and its indicative timetable.



The Cairngorms National Park

The Cairngorms National Park was designated in 2003 by the Scottish Parliament because it satisfied the conditions for a National Park as set out in the National Parks (Scotland) Act 2000.

The National Park is the UK's largest, with a total land area of some 4,528km^2. Dominated by mountain plateau, it boasts extensive moorland, forest and straths and is home to around 25% of the UK's threatened bird, animal and plant species. Approximately 18,000 people live in the National Park and it welcomes around 1.6 million visitors each year.

The general purpose of the National Park Authority (NPA), as set out in the 2000 Act, is to ensure that the National Park aims are collectively achieved in a co-ordinated way. The CNPA is therefore an enabling organisation that must work with and through other bodies to bring added value to the management of the National Park, to achieve the four aims.

The aims of the National Park are:

- to conserve and enhance the natural and cultural heritage of the area;
- to promote sustainable use of the natural resources of the area;
- to promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public;
- to promote sustainable economic and social development of the area's communities.

If it appears to the authority that there is conflict between the first aim and the others, the first aim must be given greater weight.

The Cairngorms National Park Forest Strategy

The Cairngorms National Park Forest Strategy is to replace the existing Cairngorms Forest and Woodland Framework which is now ten years old. The Strategy will be the key document providing strategic direction on future forest management and the creation/restoration of woodlands in the National Park. Local Authorities no longer include the National Park in their Forest Strategies, it is important that we fill that gap.

The CFS falls under the scope of Section 5(3) of the Environmental Assessment (Scotland) Act 2005. It has potential to generate significant environmental effects and so a Strategic Environmental Assessment (SEA) is being undertaken.

The key facts relating to the proposed CFS are set out in **Table 1**.

Table 1 Key Facts about the CFS.

Responsible Authority	Cairngorms National Park Authority
Title of PPS	Cairngorms National Park Forest Strategy
Purpose of PPS	Cairngorms National Park Forest Strategy (CFS) 2018 will provide the framework for the expansion and management of forests within the Cairngorms National Park It is a Strategy for all those with an interest in and responsibility for managing forests. This includes public bodies, private and voluntary sectors including businesses, land managers and communities. In particular, the CFS 2018 will: ➢ Set out the vision for forests in the Park; ➢ Provide the strategic objectives for Forests to deliver the greatest benefit to biodiversity, rural development, local communities and visitors to the Park; ➢ Identify the Priorities required to meet the objectives in particular: native woodland creation and expansion; restoration and enhancement of existing woodland; creation and management of productive forests; diversification in forest use; increase local community benefit, and; increase recreation and access opportunities. ➢ Show how the aims of the National Park can be achieved together, benefiting people, nature and place.
What prompted the PPS?	The Cairngorms National Park Forest Strategy is to replace the existing Cairngorms Forest and Woodland Framework which is now ten years old. The Strategy will be the key document providing strategic direction on future forest management and the creation/restoration of woodlands in the National Park. Local Authorities no longer include the National Park in their Forest Strategies, it is important that we fill that gap.
Subject (e.g. Planning, transport etc)	The strategic nature of the CFS means that it will have influence over a wide range of subjects, including: ➢ Natural Heritage; ➢ Spatial Planning; ➢ The economy; ➢ Historic and cultural heritage; ➢ Tourism; ➢ Education and research.
Summary of the nature / content of PPS	The Cairngorms National Park Forest Strategy, guided by the National Park Partnership Plan, will sit alongside the Cairngorms Nature Action Strategy, Active Cairngorms, the Cairngorms Economic Strategy and the Local Development Plan. The intention is for it to be a useful and readable guide that will help land managers and agents to

	plan new woodland creation schemes and to manage existing woodlands in ways that are appropriate for a National Park.
Period Covered by PPS	20 years
Frequency of Updates	Document reviewed every 5 years.
Area covered by PPS	4,528 km^2
Map included?	A map of the Cairngorms National Park is provided on page 10.
Are there any proposed PPS objectives	PPS objectives are at draft stage and have been used to inform this scoping report: a) Promote the creation of new woodlands that complement other land use b) Enhance the condition of existing forests c) Restore lost or vulnerable forest ecosystems d) Encourage natural regeneration of native forests e) Promote the creation and enhancement of productive forests f) Protect forests from disease and invasive species g) Increase employment in the forestry sector h) Encourage innovation in the use and marketing of native forest products i) Promote responsible access and active enjoyment of forests j) Promote community involvement in forest management.

Map of PPS Area

Legend

- Land greater than1,250m
- 1,000m to 1,250m
- 600 to 1,000m
- 300 to 600m
- Land less than 300m
- River
- Loch
- Woodland
- Built up area
- Main Road
- Minor Road
- Railway
- Railway station

Scale: 1:600,000

Figure 2 Area covered by the PPS.

Policy Context

> "*A plan or programme may be influenced in various ways by other plans or programmes, or by external environmental protection objectives such as those laid down in policies or legislation. These relationships enable the Responsible Authority to take advantage of potential synergies and to deal with any inconsistencies and constraints.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

The CFS must have appropriate regard to a wide range of national and international laws, policy and strategy. A review of Plans, Programmes and Strategies (PPS) has therefore been conducted in accordance with the Scottish Government's SEA Guidance (2013) and the ODPM Guidance on SEA (2005). This is an important part of the SEA process as it ensures the work is consistent with up to date policy, is informed by robust information and also helps in the process of identifying environmental issues, which are discussed further under the Baseline section of this report (p. 19).

Review Findings

A preliminary review of all the PPSs considered is presented in **Appendix 1**. The PPSs are categorised according to their international, national and local scales and are accompanied by information on their purpose, relationship with the CFS and the SEA Issue they relate to.

The SEA Environmental Report will need to consider the PPSs that are active at the time of writing and therefore this aspect of the SEA process will be kept under continual review.

Baseline

> "*Baseline information provides the basis for predicting and monitoring environmental effects and helps to identify environmental problems and alternative ways of dealing with them.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

The Environmental Assessment (Scotland) Act 2005 requires that information should be provided on the "relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the Strategy or programme" and "the environmental characteristics of areas likely to be significantly affected". This section aims to describe the environmental context within which the CFS operates and the constraints and targets that this context imposes on the CFS.

Baseline information serves two purposes, it helps to identify the issues on which the SEA should focus, and provides a benchmark against which the performance of the Plan (and the accuracy of any predictions) can be assessed. As well as showing the current situation the baseline data shows where possible the situation in the past and projections for the future, in order to indicate trends. It is important to recognise that where information on trends is available, the extrapolation of trends into the future can change in response to changes in legislation or other interventions.

An environmental baseline for the Cairngorms National Park is presented in **Appendix 2** of this report. The baseline is presented using a topic based approach, which reflects the Issues set out within Schedule 3 of the 2005 Act:

- Topic 1: Climatic Factors;
- Topic 2: Air
- Topic 3: Water
- Topic 4: Soil;
-

- Topic 5: Material Assets;
- Topic 6: Biodiversity, Fauna and Flora;
-

- Topic 7: Landscape and Cultural Heritage; and
- Topic 8: Population and Human Health .

While it is recognised that all topics will inter-relate to some degree, it is beyond the scope of this assessment to describe them all in full detail. However, the report does highlight important inter-relationships where they exist and describes their effects under the most relevant topic.

A summary of the baseline may be found in **Table 2**.

Summary of the Environmental Baseline and Main Issues

Table 2 Summary of baseline information and main issues; see Appendix 2 for full details.

SEA Topic	Summary of environmental baseline
Climatic Factors	➢ Historic trends show an increase in minimum and maximum temperatures and rainfall and a reduction in the number of days of frost. ➢ Climate change projections offer a central estimate of a: ➢ 2.4°C increase in mean annual temperature, ➢ 2.7°C increase in mean summer temperature, ➢ 2.1°C increase in mean winter temperature, ➢ 0.07% increase in mean annual precipitation, but with a ➢ 13.5% decrease in mean summer precipitation, and a ➢ 2% decrease in mean winter precipitation. ➢ Per capita carbon emissions in the form of CO_2 are estimated to have decreased from 10.8 tonnes in 2006 to 8.9 tonnes to 2012.
Air	➢ Air quality is relatively high within the National Park. ➢ No Air Quality Management Areas within National Park. ➢ Most air pollution associated with transport, with emissions of PM_{10} and NO_2 highest along the National Park's main roads, with the A9 being the greatest contributor.
Water	➢ Water quality is relatively high within the National Park with all SEPA monitoring sites passing in terms of water chemistry. ➢ Freshwater Pearl Mussels in the River Spey have shown a 50% decline in abundance since monitoring was undertaken in 2004, they are known to be particularly sensitive to elevations in nutrients and metals and may require water quality conditions which are better than present. ➢ Data from the Spey and Dee indicates a general trend for higher annual maximum instantaneous peak flows.

SEA Topic	Summary of environmental baseline
	➢ Flood risk: there are nine Potentially Vulnerable Areas (PVAs) within the National Park. The estimated total average annual cost of damage in these areas is £1,071,000.
Soil	➢ The Cairngorms National Park does not contain any mapped areas of Prime Agricultural Land. ➢ Around 1,700km^2 of peat soils within the National Park. ➢ Soil erosion represents a risk to soils with high organic content (such as peat) over large areas of the National Park.
Material Assets (Natural Assets)	➢ The area of native woodland in the CNP is 42,947ha, which is 69% of the total woodland area or 9.5% of the total land area, the majority are native pinewoods and upland birchwoods. ➢ Less than half of the native woods in the Cairngorms National Park are highly semi-natural in their present structure and composition, with 44% of the total area in the 80-100% semi-natural category (67% of the native woodlands in the Cairngorms National Park are native pinewoods, many of which will be Scots pine of plantation origin). ➢ 63% of native woodland is in good health for biodiversity, based on analysis of four key condition measures. ➢ There are 18,391ha of woodland now present on ancient woodland sites, of which 86% is native woodland. Sitka spruce and lodgepole pine are the main components (26% and 24% respectively of the non-native. ➢ Aspen dominated woodland is concentrated in Strathspey and Deeside, stands are small and total around 350ha. ➢ Around 160 km^2 of this has also been identified as being semi-natural. ➢ Community owned woodland at Laggan Forest Trust and Anagach Community Woodland ➢ The CNP has a rich geological diversity including features such as the Rouchee Moutonee, glacial valleys and morain deposits.
Biodiversity, Fauna and Flora	➢ National Park contains six woodland dominated NNR habitats. ➢ Caledonian Pinewood is a notified feature of 12 SSSI' and a Qualifying Interest of four SAC's – Ballochbuie, Cairngorm, Glen Tanar & Kinveachy ➢ Caledonian Pinewood is at threat from lack of regeneration, limited deadwood and poor structural diversity. ➢ Montane willow scrub is a Qualifying Feature of four SAC's: Caenlochan, Cairngorm, Creag Meagaidh & Drumochter

SEA Topic	Summary of environmental baseline
	Hills covering 4.2ha, around 20% of habitat present in Scotland ➢ Montane scrub is under threat from overgrazing and burning. ➢ Woodlands are the main habitat for 39% of nationally important and 45% (446 species) of those largely /or restricted to the Cairngorms despite covering only 17% of the land area. ➢ Wooded habitats in the Cairngorms are 13 times richer than moorland and 11 times richer than grassland in terms of nationally important species. ➢ Many species are dependent on dead timber. ➢ 26 species have been identified in the Cairngorms Nature Action Plan as priority for action, 50% of these depend on woodland habitats and include mammals, birds, invertebrates, fungi, lichens and plants. ➢ The Cairngorms National Park holds a significant proportion of the national Capercaillie population – at least 75% of the national number of lekking males, with the majority in Strathspey, they are at risk from recreational disturbance. ➢ The Cairngorms National Park is a stronghold for red squirrel and Scottish Wildcat in the UK. Grey squirrels are found on the fringes of the national park at Blair Atholl and in Aberdeenshire. ➢ Aspen stands are a feature of Strathspey, supporting the Aspen Hoverfly and bracket fungus ➢ Four species of wood ant are found within the woodlands of the CNP, the narrow –headed ant is almost entirely restricted to the CNP. ➢ Pine hoverfly *Blera fellax* is restricted to a handful of sites within Strathspey, requiring rotting pine stumps as part of its lifecycle. ➢ Abernethy forest is the richest of any eastern forest in terms of its native pinewood lichen indicators ➢ Tree pathogens can be a threat to woodland health and function, single species stands are especially vulnerable. Current pathogens include *Phytophthora austrocedri* which causes Juniper Die-back. ➢ Strathspey has nationally important numbers of breeding waders which depend upon the open highnature value, low intensity mixed farming practices.
Landscape and Cultural Heritage	➢ At 4,528 square kilometres, and comprising 6% of Scotland's land area, the Cairngorms National Park is the UK's largest protected landscape. ➢ Contains 3 National Scenic Areas (NSA), with two, namely the Cairngorm Mountains NSA and Deeside and Lochnagar NSA, located entirely within the National Park's boundary. ➢ Combined, the two main NSAs cover an area of around 1,072 km^2, which equates to just under 25% of the National

SEA Topic	Summary of environmental baseline

	Park's land area.
	➢ Around 2,100 km^2 (46%) of the Cairngorms National Park has been identified as 'wild land'.
	➢ There are 110 Scheduled Monuments recorded within the National Park.
	➢ 'The Inventory of Gardens and Designed Landscapes in Scotland' lists 11 gardens and designed landscapes within the National Park.
	➢ There are 2 Inventory Battlefields within the National Park.
	➢ There are 5 historic planned towns within the National Park.
	➢ There are 6 Conservation Areas within the National Park.
	➢ There are around 753 Listed buildings or structures within the National Park, with:
	  ➢ 56 in Category A,
	  ➢ 341 in Category B, and
	  ➢ 356 in Category C.

Population and Human Health	➢ In 2014, the population of the National population of the National Park was estimated to be 18,594, with 9,186 males and 9,408 females. ➢ The National Park has a relatively high proportion of people within the 10 to 29 and 55 to 74 age cohorts. ➢ Since 2001, the National Park has experienced a significant net increase in its resident population, rising by approximately 2,087 persons (a growth of 12.8%). ➢ Estimated life expectancy of the National Park is 79 for males and 82.3 for females. ➢ Low levels of people with long term health problems or disabilities and high levels of people with good health within the National Park. ➢ Extensive public footpath network, including 1,073km of Core Path.

Environmental Assessment

SEA Objectives

> "*The review of relevant environmental objectives can be used to construct a framework of objectives against which a plan can be assessed. This can identify whether a plan supports wider environmental objectives or whether there are any environmental gaps.*"
>
> SEA Guidance
> (Scottish Government, 2013)

This section of the Environmental Report sets out the CNPA's proposed approach to assessment of the CFS.

Proposed SEA Objectives have been developed as a result of the review of PPS (**Policy Context**) and baseline information (**Baseline**) as well as the responses to the consultation on the Scoping Report (**Appendix 5**). Identifying objectives is an important part of the SEA process as these will be used as the primary tool for testing the emerging CFS to ensure it will not result in any significant environmental effects.

Table 3, along with any associated sub objectives. The main objectives have been tested for their compatibility with one another, the findings of which can be found in the section on the **Compatibility of Objectives**. The framework in which they will be utilised is set out on page 38.

The SEA Objectives are thematically based and are designed to cover the environmental assets that the Strategy could potentially affect. It is important to recognise that environmental effects are rarely confined to a single issue, therefore it has been highlighted where significant inter-relationships occur. The SEA Objectives proposed here therefore represent the scope of the assessment that will be undertaken to identify potential environmental effects of the CFS.

It is important that the assessment process is proportional, practical and manageable. Consequently, the assessment process will utilise the 'main' SEA Objectives, but take account of the SEA Sub-Objectives. This distinction is important to ensure the assessment work is practical and achievable. It should also be noted that not all SEA Sub-Objectives will be relevant to every aspect of the Strategy. Therefore, in the interest of proportionality, where they are not relevant, they will not be considered as part of the assessment process.

The Objectives and their relationship with the SEA Issues identified for the National Park are outlined in

Table 3 SEA Objectives.

SEA Topic	No.	SEA Objective	SEA Sub-Objectives	Inter-relationships
Climatic Factors	1a	Reduce greenhouse gas emissions	➢ Increase woodland cover for more uptake of carbon dioxide, methane and nitrous oxide. ➢ Support the use of wood fuel over fossil fuel use to reduce emissions. ➢ Support the local production of wood for manufacture and wood craft to reduce transport emissions and as alternatives to fossil fuel derived alternatives.	➢ Air ➢ Water ➢ Soil ➢ Landscape and Cultural Heritage ➢ Biodiversity, Fauna and Flora ➢ Material Assets ➢ Population and Human health
	1b	Increase resilience to the effects of climate change	➢ Increase woodland planting to absorb more CO_2. ➢ Ameliorate flooding through woodland use in Natural Flood Management Schemes. ➢ Increase ecological permeability through the landscape through expansion of woodland cover and creation of Forest Habitat Networks. ➢ Increase species diversity within woodlands to increase resilience to climate change induced increase in pathogens ➢ Increase riparian planting to shade watercourses and reduce water temperature	➢ Water ➢ Soil ➢ Landscape and Cultural Heritage ➢ Biodiversity, Fauna and Flora ➢ Population and Human health

SEA Topic	No.	SEA Objective	SEA Sub-Objectives	Inter-relationships
Air	2	Protect and enhance air quality	➢ Reduce levels of the UK National Air Quality pollutants (e.g. NO_2, PM_{10}, SO_2). Wood hedges and shelter belts along roads and in agricultural landscapes take up more windborne pollutants than other types of land use. ➢ Reduce negative effects of industry and transport on local air quality through encouragement of local timber processing and use. ➢ Encourage appropriate cleaner wood fuel technology for power generation.	➢ Water ➢ Soil ➢ Landscape and Cultural Heritage ➢ Biodiversity, Fauna and Flora ➢ Population and Human health
Water	3a	Reduce flood risk	➢ Strategically plant native and non-native woodlands to target areas of high run-off to ameliorate flood risk through physical slowing of water and increased water uptake from trees ➢ Promote land uses and habitat changes that will help to decrease run-off, stabilise slopes, and attenuate flows. ➢ Reduce reliance on flood mitigation and hard engineered solutions. ➢ Encourage an increase in the use of trees within Suds schemes	➢ Climatic factors ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human health
	3b	Maintain and improve the quality of water resources	➢ Ensure the water quality of rivers, lochs and ground-water is maintained or improved to meet the objectives of the Water Framework Directive. ➢ Maintain and improve the ability of river catchments to store water. ➢ Conserve public water supply. ➢ Reduce diffuse pollution from urban and rural areas. ➢ Limit land use related pollution (particularly nitrates) on water resources.	➢ Climatic factors ➢ Soil ➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Population and Human health

SEA Topic	No.	SEA Objective	SEA Sub-Objectives	Inter-relationships
Soil	4	Minimise contamination and safeguard and improve soil and peat quality.	➢ Maintain or improve the productive capacity of soils. ➢ Protect and enhance soil quantity (including non-chemical soil functions and processes such as permeability) and quantity, especially of carbon rich soils. ➢ Avoid and reduce contamination of soils. ➢ Take account of soil function. ➢ Minimise soil erosion. ➢ Minimise soil sealing. ➢ Minimise soil compaction.	➢ Climatic factors ➢ Water ➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human health
Material Assets	5	Encourage the sustainable use and reuse of material assets	➢ Support innovation in local timber mills and encourage small-scale timber processing. ➢ Encourage the creation of new productive woodlands. ➢ Encourage new innovation in forest management promoting the use of native species and low impact silviculture systems ➢ Encourage sustainable use of timber within small business for the production of furniture and other crafts. ➢ Promote the waste hierarchy of reduce, reuse and recycle. ➢ Value, conserve and enhance geodiversity.	➢ Climatic factors ➢ Air ➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human Health
Biodiversity, Fauna and Flora	6a	Value, conserve and enhance biodiversity, distinctive native species and habitats	➢ Protect the integrity of European sites, proposed European sites and listed Ramsar sites, and to conserve or, where not at a favourable conservation status, enhance their qualifying features. ➢ Avoid damage or fragmentation of designated sites, habitats and protected species and encourage their enhancement and connection. ➢ Conserve and enhance the viability and diversity of distinctive species and habitats and their connectivity.	➢ Climatic factors ➢ Air ➢ Water ➢ Soil ➢ Material Assets ➢ Landscape and Cultural Heritage

SEA Topic	No.	SEA Objective	SEA Sub-Objectives	Inter-relationships
			➢ Avoid the introduction and spread of invasive non-native species and tree diseases. ➢ Conserve, enhance and create appropriate natural habitats and wider biodiversity within and out with settlements. ➢ Enable people to access and appreciate the Cairngorms National Park's woodland heritage more.	➢ Population and Human Health
	6b	Maintain and improve the sustainable management of woodland for multiple benefits	➢ Maintain or improve the capacity of woodland to sequester and store carbon. ➢ Enhance the ecological functioning of woodland at a landscape scale. ➢ Avoid the loss of ancient woodland and veteran trees. ➢ Protect and enhance the ecosystem services woodlands provide (e.g. flood alleviation and pollution mitigation). ➢ Protect and promote the recreational, cultural, landscape and economic value of woodland.	➢ Climatic factors ➢ Air ➢ Water ➢ Soil ➢ Material Assets ➢ Landscape and Cultural Heritage ➢ Population and Human Health
Landscape and Cultural Heritage	7	Protect and enhance the character, diversity and special qualities of the National Park's landscape and cultural heritage	➢ Protect and enhance the National Park's special landscape qualities. ➢ Work towards creating landscapes that are ecologically functional. ➢ Value, protect and enhance the historic and cultural environment and its assets.	➢ Climatic Factors ➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Population and Human health

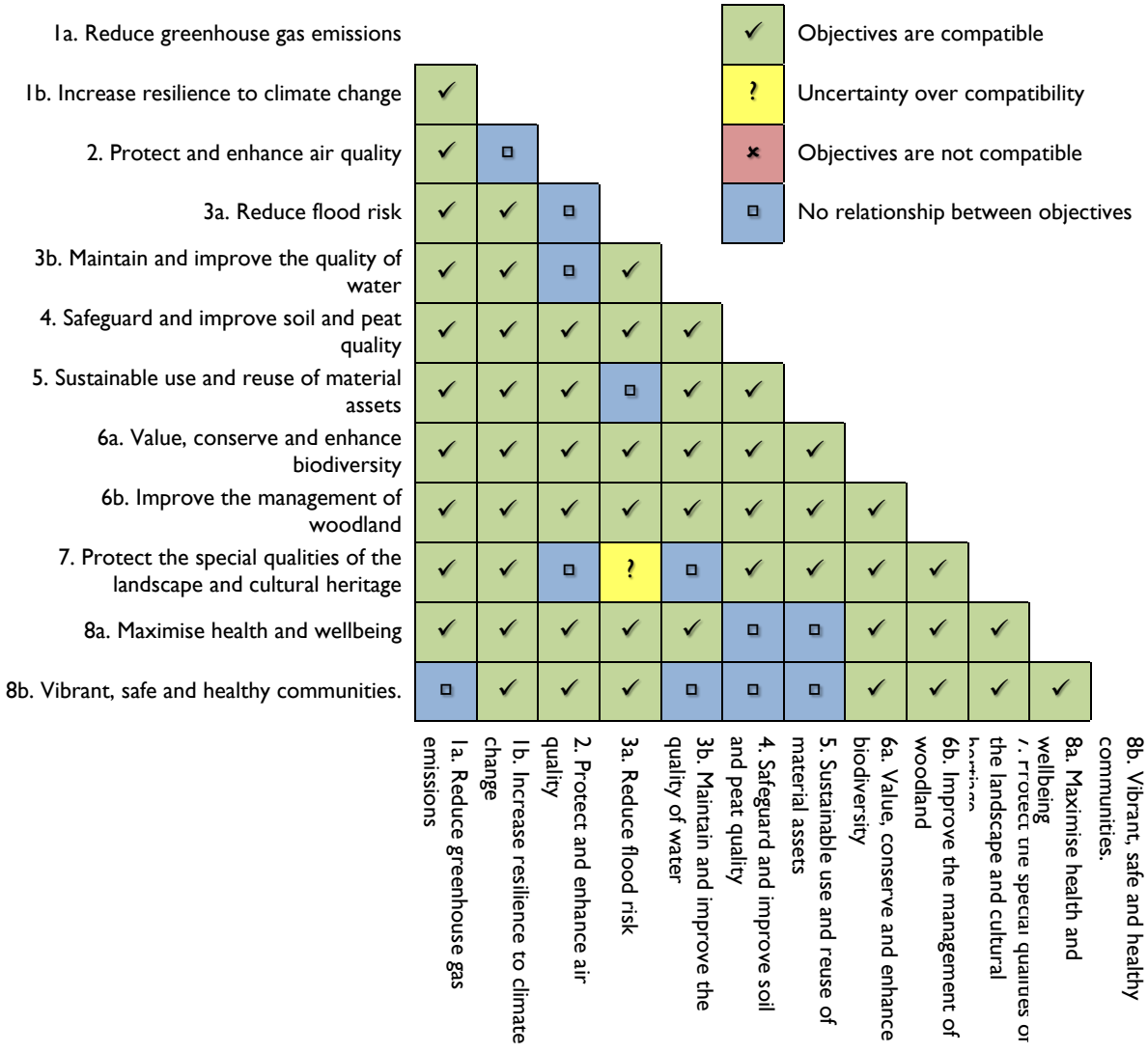
SEA Topic	No.	SEA Objective	SEA Sub-Objectives	Inter-relationships
Population and Human Health	8a	Promote opportunities that maximise the health and wellbeing of local people, visitors and communities.	➢ Maintain the recreational value of the Cairngorms National Park. ➢ Promote and maintain opportunities for people to enjoy physical recreation and lead healthy lifestyles. ➢ Improve health and wellbeing by ensuring woodlands are attractive places to be. ➢ Promote the improvement and maintenance of social and physical environments / facilities that provide opportunities to enhance health and wellbeing.	➢ Landscape and Cultural Heritage ➢ Population and Human Health
	8b	Support vibrant, safe and healthy communities.	➢ Promote a forest culture among communities through encouragement of ownership, management and involvement in local woods. ➢ Foster a life-long love of woodlands by supporting educational initiatives. ➢ Promote the inclusion of disadvantaged and minority groups. ➢ Redress imbalances of inequality, deprivation and exclusion. ➢ Reduce burden of ill-health in the population.	➢ Climatic factors ➢ Air ➢ Water ➢ Soil ➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human Health

Compatibility of SEA Objectives

> "*It may be useful to test the internal compatibility of the SEA objectives... There may be tensions between objectives that cannot be resolved: the compatibility assessment will clarify these so that subsequent decisions are well based, and mitigation or alternatives can be considered.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

The SEA Objectives identified in **Table 3** have been tested for compatibility in accordance with the guidance as set out by the ODPM. A matrix approach has been used which is consistent with this guidance. The results of the compatibility assessment are summarised in **Figure 3**. Only the 'main' objectives have been considered as part of the compatibility test, since the sub-objectives effectively feed into these.

Figure 3 Compatibility assessment of SEA objectives (abridged).



As can be seen from **Figure 3**, a large number of the SEA objectives are either compatible with each other, or there is no relationship between them. Where there is no relationship between objectives this means they can be achieved simultaneously without conflict. However, there is uncertainty between the compatibility of one objective, 3a reduce flood risk and protect the special landscape qualities. This uncertainty will be considered here in greater detail. Some refining of objectives may be required in the future, for example changes may be required to reflect the views of the Consultation Authorities.

Likely changes to the environment in the absence of a Strategy

> "*It is important to be aware that baselines will change over time under 'no plan or programme' and 'business as usual' alternatives, as well as under new plans or programmes.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

In forecasting the 'business as usual', or 'without the plan' scenario it is first necessary to determine what that means. In the case of the CFS, the absence of a Strategy is taken to mean the continued implementation of the CNPA's overarching Plans such as the current NPPP 2016 and Local Development Plan (LDP) 2015 as well as the international and national PPS listed in **Appendix 1** (p. 65).

The Environmental effects of this interpretation are forecast in the context of the SEA Objectives (**Table 3**). The SEA Objectives have been chosen as a context for this exercise because:

- They provide the context against which the likely effects of the CFS have been assessed; and
- They provide the proposed framework for SEA monitoring.

Table 4 Likely environmental changes in the absence of a Strategy.

SEA Objective	Business as Usual Scenario
1a Reduce greenhouse gas emissions	In the absence of the Strategy, statutory plans such as the Scottish Forest Strategy will continue to promote increased woodland cover in Scotland with an aim of 10,000 ha per year. However, the CFS aims for an increase in 1000 ha within the CNP alone which would increase uptake of carbon dioxide, methane and nitrous oxide. The CFS will actively promote the use of local wood production for timber and fuel, reducing transport emissions and providing alternatives to fossil fuels. It is likely therefore, that in the absence of a CFS, a reduction in local greenhouse gas emissions would be harder to achieve.
1b Increase resilience to the effects of climate change	Climate change is likely to result in the need of species to move through the landscape to adapt to increasing temperatures and alteration of hydrological regimes, to do this they require good habitat connectivity. It is anticipated that pathogen prevalence will increase with large monoculture woodlands being especially vulnerable. We are already experiencing an increase in the frequency and duration of large storm events, exacerbating flooding issues. The CFS promotes measures in response to these issues, however, the absence of a CFS would make increasing resilience harder to achieve. For example, the implementation of woodland based natural flood management techniques, particularly those relating to landscape scale habitat management, require a strategic approach to implementation, which will be provided within the woodland creation target maps within the CFS. It is likely therefore, that in the absence of a CFS, opportunities to develop comprehensive adaptation measures to climate change will be reduced.
2a Protect and enhance air quality	With a growing population, increasing visitor numbers and high levels of private motor vehicle use, there is likely to be a minor negative impact on air quality. Increased planting of hedgerows and woodlands around and within settlements and major road routes has been demonstrated to take up more windborne pollutants than other types of land use. The CFS will also encourage appropriate cleaner wood fuel technology for power generation to improve air quality. The CFS is likely to result in a slight increase in air quality especially in more densely populated areas close to roads.
3a Reduce flood risk	The CFS will actively promote strategically planting native and non-native woodlands to target areas of high

SEA Objective	Business as Usual Scenario
	run-off to ameliorate flood risk through physical slowing of trees and increased uptake of water. The CFS will provide a strategic framework to deliver the greatest benefit through the use of woodland target maps that are linked to NFM opportunities. Without the CFS there is no overall strategy within the CNP and it is likely that significant opportunities for reducing flood risk would be missed.
3b Maintain and improve the quality of water resources	Water quality within the National Park is generally good and the LDP (2015) has policies that aim to protect with respect to new development. However, land management activities that fall outside spatial planning's remit, such as those related to forestry or moorland, can also have a negative effect on water quality. The use of strategically planted woodlands and good management during harvesting to prevent pollution from run-off and erosion can therefore play a significant role in improving water quality. The CFS has specific policies based on good management practices to protect water quality, in its absence therefore, there is a greater likelihood of existing problems remaining and further negative effects occurring.
4 Minimise contamination and safeguard and improve soil and peat quality.	The CFS will safeguard areas of deep peat from being planted with trees, no grants or premium payments are available. The CFS provides a framework for the coordinated and sustainable management of forestry and moorland to minimise soil erosion, soil compaction and peatland degradation which all lead to a loss of soil functioning. In its absence therefore, there is a greater likelihood of existing problems remaining and further negative effects occurring.
5 Encourage the sustainable use and reuse of material assets	The CFS will support innovation in local timber production and use, encourage sustainable use of timber within small businesses for the production of furniture and other crafts and encourage the creation of new productive woodlands. There is likely to be more sustainable use of material assets with the CFS in place.
6a Value, conserve and enhance biodiversity, distinctive wild species and habitats	The National Park is protected by many tiers of protected sites and even in the absence of the CFS, land management practices would still have to meet the requirements of Natura legislation. However, biodiversity is more than just protected sites and the National Park is home to many important yet undesignated habitats, many of which are important to the protected sites themselves. Native plantations on ancient woodland sites often retain the rare and varied ground flora such as Twinflower (A CNAP species), and rare toothwort fungi for example, sensitive management as promoted within the CFS will act to retain these areas. Working within the remit of Natura designation the CFS will not promote woodland creation on sites designated for other habitats. The CFS as a park wide strategy aims to enhance the woodland network across the Cairngorms

SEA Objective	Business as Usual Scenario
	National park area which will bring habitat gain and increase connectivity, this is central to the conservation of species such as Capercaillie but also to woodland invertebrates, including Aspen Hoverfly and Pearl- bordered Fritillary which have limited dispersal distances. Gains through landscape scale habitat management would not easily be achieved without the direction provided by the CFS.
6b Maintain and improve the sustainable management of woodland for multiple benefits	The National Park contains the most extensive tract of Caledonian forest in Britain. It has around 340 km^2 of ancient woodland, of which around 160 km^2 is semi-natural. Woodland is therefore an important habitat and resource of interest to many of the national Park's partners. The CFS will promote and enhance the multiple benefits provided by woodland. Without the CFS, priorities such as woodland expansion and other landscape scale habitat management principles related to woodland, would be harder to realise.
7 Protect and enhance the character, diversity and special qualities of the National Park's landscape and cultural and historic heritage	The Cairngorms National Park represents the UK's largest protected landscape. The CFS promotes landscape scale woodland change while incorporating the requirements of people living in and visitors to the park to be able to view and appreciate the landscape. Woodlands within the landscape can enhance the special Wildland qualities the CNP is famed for. The CFS highlights the cultural and historic aspects of woodland and its value. Without the CFS and its park wide strategy there is a risk that the greater landscape aims and benefits that would bring would not be realised to their full potential.
8a Promote opportunities that maximise the health and wellbeing of local people, visitors and communities	One of the aims of the National Park is "*to promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public*". The CFS offers a framework for increased opportunity for woodland enjoyment. Initiatives such as Woodland Schools, Health Walks and Forest bathing will be encouraged and supported in a co-ordinated manner. Without the CFS there is a risk that these opportunities are not maximised.
8b Support vibrant, safe and healthy communities	One of the aims of the CFS is to promote a forest culture among communities through encouragement of ownership, management and involvement woodlands whether it be playing a part in active management or just enjoying a walk. The strategy aims to reach as many people as possible and promote inclusion of disadvantaged and minority groups. The CFS provides a means for a co-ordinated approach to strengthening community connection to their woodlands throughout the CNP.

Development of the CFS Outcomes and Policies

> "[Reasonable alternatives] *can be used to achieve environmental benefits and, where well executed, can be an opportunity for the SEA to add value to the planning process by encouraging lateral or creative thinking. Alternatives must be realistic and are likely to emerge from the plan-making process. However, the SEA can encourage further thinking around alternatives, and highlight where environmentally preferable options exist.*"
>
> SEA Guidance
> (Scottish Government, 2013)

The CFS identifies ten key priorities to be addressed:

- Creation of new woodland;
- Enhance condition of existing forest resource;
- Restore lost or vulnerable woodland ecosystems;
- Natural regeneration of native forests;
- Creation & enhancement of productive forests;
- Resilience to disease and invasive species;
- Employment;
- Innovation in use and marketing
- Responsible access and recreation; and
- Community Involvement.

The Environmental Assessment (Scotland) 2005 requires that reasonable alternatives to the Plan be considered as part of the SEA.

This however presented a challenge for the CFS, as many of the objectives are long term priorities which are longer than the life of the strategy. The CFS is intended to co-ordinate and focus the delivery of a wide range of other work through targeted indicative maps and spatially other areas have been excluded after objective analysis. Therefore there are no reasonable alternatives to the location for opportunity. However, within the CFS there have been reasonable alternative objective and policy options identified reflecting the type of woodland and management practices undertaken to maximise benefit, these will be assessed fully along with the preferred options.

Remit of the Environmental Report

This environmental report presents the assessment of the draft CFS. It is likely that some of the assessments may change or be refined after public consultation.

Compatibility of CFS Objectives with SEA Objectives

> *"The objectives of the plan or programme will need to be tested against the SEA objectives to identify both potential synergies and inconsistencies. This information may help in developing alternatives during the development of the plan or programme, and may in some cases help to refine the objectives of the plan or programme itself. Where a plan or programme has several objectives it may also be helpful to test them against each other, as inconsistencies may give rise to adverse environmental effects."*
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

The CFS objectives, were assessed for their compatibility with the SEA Objectives (**Table 5**). That is to say, are the steps necessary to **Table 3**.

Generally the CFS Outcomes were found to be compatible with the SEA Objectives; the few exceptions usually reflect an uncertainty on how the objective /outcome might be expressed in particular concerning community development.

pursue the CFS Objectives likely to be the same as those that would arrive at the SEA Objectives? Unlike the SEA compatability assessment (Figure 3), which assesses whether the CFS's Outcomes will contribute (or not) to meeting the SEA Objective, this assessment also allows the reverse consideration, i.e. will pursuing the SEA's Objective help in pursuing the CFS's Outcome.

The compatibility of the objectives was assessed using the following criteria:

✓	Objectives / outcomes are compatible
?	Uncertainty over compatibility
×	Objectives / outcomes are not compatible
□	No relationship between objectives / outcomes

For the purposes of legibility, abridged versions of the objectives have been used in the assessment. Full versions of the SEA Objectives may be found in

Key Messages from the Compatibility Appraisal

The CFS's Long Term Outcomes generally scored well in the appraisal and although a number of uncertainties were identified, none of the outcomes were found to be incompatible with the SEA Objectives.

Objective	SEA Objectives

Table 5 Compatibility assessment between SEA Objectives (top) and CFS Objectives (left) (abridged).

	1a Reduce greenhouse gas emissions	1b. Increase resilience to climate change	2. Protect and enhance air quality	3a. Reduce flood risk	3b. Maintain and improve the quality of water	4. Safeguard and improve soil and peat quality	5. Sustainable use and reuse of material assets	6a. Value, conserve and enhance biodiversity	6b. Improve the management of woodland	7. Protect the special qualities of the landscape	8a. Maximise health and wellbeing	8b. Vibrant, safe and healthy communities.
Vision: The forests and woodlands of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat for wildlife, more diverse and enhanced landscapes, outstanding recreation experiences, and greater opportunities for enterprise, innovation and business development.	+	+	+	++	+	+	++	++	++	++	++	++
Promte the creation of new woodlands that complement other landuse	++	++	++	++	++	++	++	++	++	++	++	++

Enhance the condition of existing forests	++	++	+	++	++	++	++	++	++	++	++	++
Restore lost or vulnerable forest ecosystems	++	++	+	+	++	+	++	++	++	++	++	++
Encourage natural regeneration of native forests	++	++	++	++	++	++	++	++	++	++	++	++
Promote the creation and enhancement of productive forests	++	++	++	++	++	++	++	++	++	+	++	++
Protects forests from disease and invasive species	+	++	+	+	+	+	+	++	++	++	+	+
Increase employment in the forestry sector	+	+	+	+	+	+	++	++	++	++	++	++
Encourage innovation in the use and marketing of native forest products	+	+	+	+	+	+	++	++	++	++	++	++
Promote responsible access and active enjoyment of forests	+	+	+	+	+	+	++	++	++	++	++	++
Promote community involvement in forest management	?	?	□	+	?	□	++	++	++	++	++	++

Assessing the effects of the Outcomes and Options

> "*Evaluation involves forming a judgement on whether or not a predicted effect will be environmentally significant.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

The outcomes and options for the CFS were assessed for their likely effects in relation to the SEA Objectives. That is to say, are the steps necessary to pursue the CFS likely to have an effect on the aims of the SEA Objective?

This stage of the SEA involves:

- Predicting the effects of the plan or programme, including alternatives;
- Evaluating the effects of the draft plan or programme, including alternatives;
- Considering ways of mitigating adverse effects; and
- Proposing measures to monitor the environmental and sustainability effects of plan or programme implementation.

A summary of the assessment of the outcomes and preferred options is shown in

Table 6. The full appraisal matrices are included in **Appendix 6**.

The assessment was carried out using the following criteria:

++	Option would have a major positive effect.
+	Option would have a minor positive effect.
?	Effect of Option is uncertain.
▫	Option would have no predicted effects or no site specific effects**.**
-	Option would have a minor adverse effect.
--	The Option would have a major adverse effect.

A full outline of the assessment criteria can be found in **Appendix 5**.

Table 6 Summary of the SEA of the CFS's's Outcomes and Policies. (Abridged)

Outcome	Policies												
	1a Reduce greenhouse gas emissions	1b. Increase resilience to climate change	2. Protect and enhance air quality	3a. Reduce flood risk	3b. Maintain and improve the quality of water	4. Safeguard and improve soil and peat quality	5. Sustainable use and reuse of material assets	6a. Value, conserve and enhance biodiversity	6b. Improve the management of woodland	7. Protect the special qualities of the landscape	8a. Maximise health and wellbeing	8b. Vibrant, safe and healthy communities.	
Vision: The forests and woodlands of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat for wildlife, more diverse and enhanced landscapes, outstanding recreation experiences, and greater opportunities for enterprise, innovation and business development.	+	++	+	++	++	++	++	++	++	++	++	++	
Creation of new woodlands that complement other land-use	++	++	+	++	++	++	++	++	++	++	++	++	
Enhance the condition of existing forests	+	++	□	+	+	++	++	++	++	++	++	++	

Restore lost or vulnerable forest ecosystems	+	++	+	+	+	++	++	++	++	++	++	++	
Encourage natural regeneration of native forests	++	++	+	+	+	++	++	++	++	++	++	++	
Promote the creation and enhancement of productive forests	++	++	+	+	+	+	++	++	++	++	++	++	
Protect forests from disease and invasive species	+	+	□	□	□	□	++	++	++	++	++	++	
Increase employment in the forestry sector	□	□	□	□	□	□	++	□	++	□	□	++	
Encourage innovation in the use and marketing of native forest products	□	+	□	□	□	□	++	+	++	++	++	++	
Promote responsible access and active enjoyment of forests	-	□	-	□	□	□	++	+	++	++	++	++	
Promote community involvement in forest management	□	□	□	□	□	□	++	□	++	++	++	++	
Policies	□	□	□	□	□	□	□	□		□			
Managed Moorland	+	+	□	++	++	++	++	++	++	++	++	+	
In-bye agricultural land	+	+	+	+	+	++	++	++	++	++	++	+	
Peatlands	+	++	□	++	++	++	++	++	++	++	++	++	
Deer management	++	+	□	+	+	+	++	++	++	++	++	++	
Deer Fencing	+	+	□	+	+	+	++	++	++	-	-	?	

Landscape & Wild land	□	++	□	□	□	+	++	++	++	++	++	++	
Designated Sites	+	++	□	□	□	□	++	++	++	++	++	++	
Forest Habitat Networks	++	+	+	++	++	++	++	++	++	++	++	++	
Montane Woodland	+	++	□	++	++	++	++	++	++	++	++	□	
Riparian Woodland	+	++	□	++	++	++	++	++	++	++	++	□	
Aspen	+	++	□	□	□	□	++	++	++	++	++	□	
Woodland Remnants	+	+	+	+	+	+	++	++	++	++	++	++	
Ancient & Semi-natural Woodlands	□	□	□		□	++	++	++	++	++	++	++	
Harvesting	++	+	□	++	++	++	++	++	++	++	++	++	
Biosecurity, invasive species & wildfire	++	+	□	□	□	□	++	++	++	++	++	++	
Rural development	?	+	-	□	□	□	++	++	++	++	++	++	
Employment	□	□	□	□	□	□	++	++	++	□	□	++	
Productive Woodland	+	++	+	++	++	++	++	++	++	++	++	++	
Natural Flood Management	+	++	+	++	++	++	++	++	++	++	++	++	
Low carbon and carbon trading	++	++	□	□	□	□	++	++	++	++	++	++	
Responsible Access	-	+	□	□	□	□	++	+	++	++	++	++	
Health	□	+	□	□	□	□	++	+	++	++	++	++	

Assessing Cumulative Effects

> "*Many environmental problems result from the accumulation of multiple small and often indirect effects, rather than a few large and obvious ones.*"
>
> A Practical Guide to the SEA Directive (ODPM, 2005)

It is a requirement of the SEA Directive that the effects of Strategy's objectives and spatial options are assessed in combination with other Strategy elements (as opposed to in isolation). These combined effects are called cumulative effects; effects that arise due to the addition of the effects of a number of elements to produce a greater effect; and synergistic effects; those that arise from an interaction of the effects of objectives, and can be thought of as effects that are greater than the sum of the parts.

It is important to note that in isolation, no significant adverse effects were identified by the assessment. However, consideration must be given to minor adverse effects.

The adverse effects cluster around certain Strategy outcomes / policies and certain SEA Objectives. SEA Objective 1a to Reduce GHG emissions and Objective 2 to protect and enhance air quality returned the greatest number of minor adverse effects (2 in each).

Most of these are associated with increased travel for recreation and increases in woodland economic growth.

Where the effects of SEA Objectives 1a and 2 meet is with the emissions caused by private motor vehicles. The SEA predicts that a growth in visitor numbers is likely to result in a concurrent rise in the use of private motor vehicles.

These effects also need to be considered in combination with an □ increase in the forestry economy and resulting transport.

In terms of GHG emissions, it is not considered that the number of additional journeys created is likely to result in significant harm as the growth in car journeys is unlikely to be high.

In terms of the effect on air quality, the fact that no air quality objectives are currently failing within the National Park and the effects are unlikely to become significant.

A number of minor negative effects have also been identified around SEA Objective 7 and 8a which are concerned with landscape quality and recreation. This relates to the negative visual and barrier to access created by deer fencing. Since many of these effects are mitigatable, cumulative effects are not considered likely. Deer fencing is necessary in some locations and its use can bring many positive results for increased tree cover, biodiversity and flood risk reduction.

Overall, the Strategy's cumulative effects are likely to be positive in nature, with strong environmental outcomes encouraging the conservation and enhancement of the National Park's important habitats and species and progressive economic and recreational outcomes generating positive effects on human health and wellbeing.

Evaluation of Uncertainties and Risks

Although some objectives and options score negatively against one or more SEA Objective, the implementation of mitigation measures can help alleviate, if not neutralise some of these effects. It is worth noting that the vast majority of potential adverse effects are only minor in nature. There were two uncertainties identified within the evaluation. The first, the outcome of deer fencing in relation to Objective 8b healthy, vibrant communities, the use of deer fencing can bring many positives in terms of woodland expansion but can have negative impacts on access unless each scheme ensures that access is retained. The second concerns rural development and potential effects on climatic factors and air quality and relate to the fact that effects could be both positive and negative depending on the balance and extent of policy implementation. While it is not predicted that any of these uncertainties will develop into significant adverse effects, as a precautionary measure mitigation measures have been identified in relation to them. These are described in **Table** .

Evaluation of Reasonable Alternative and Preferred Options

Within this assessment a number of Reasonable Alternative Options were identified (**Table a)** and been reviewed against SEA objectives and are presented in **Table b**. All of the Reasonable Alternative Options were assessed as having greater negative impacts for SEA Objective outcomes compared to the Preferred Options. For example encouraging the use of more non-native species instead of native will have negative outcomes for both biodiversity and landscape objectives. Conversely having a policy of no deer fencing will benefit landscape and access but was assessed as having negative outcomes on all other SEA objective outcomes. **Table** . Shows a summary of predicted outcomes from Reasonable Alternative and preferred Options.

Long Term Significance	Preferred Option	Reasonable Alternative
++	34	2
+	13	4
□	10	23
?	1	2
-	2	29
--	0	0

Table 9 Summary of the SEA of the CFS's's Preferred and Reasonable Alternative Options.

Vision	Reasonable Alternative
The forests and woodlands of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat for wildlife, more diverse and enhanced landscapes, outstanding recreation experiences, and greater opportunities for enterprise, innovation and business development.	No reasonable alternative
Objective	
The creation of new woodlands that complement other land-use	No reasonable alternative
Enhance the condition of existing forests	No reasonable alternative
Restore lost or vulnerable forest ecosystems	No reasonable alternative
Encourage natural regeneration of native forests	No reasonable alternative
Promote the creation and enhancement of productive forests	No reasonable alternative
Protect forests from disease and invasive species	No reasonable alternative
Increase employment in the forestry sector	No reasonable alternative
Encourage innovation in the use and marketing of native forest products	Encourage innovation in the use and marketing of native forest products
Promote responsible access and active enjoyment of forests	No reasonable alternative
Promote community involvement in forest management	No reasonable alternative
Policy	
Managed Moorland	No reasonable alternative
In-bye agricultural land	No reasonable alternative
New woodland creation schemes must be designed to avoid planting on	New woodland schemes must be designed to avoid planting on any peat

deep peat or damaging the adjoining peatland hydrology	soils or damaging the adjoining peatland hydrology
Deer management	No reasonable alternative
Deer fencing: Fencing is an important tool for woodland creation, but it should be regarded as a last option when all other options for tree establishment have been considered; If fencing is necessary, it is important to allow space for open ground and a more 'feathered' or 'fuzzy' woodland edge within the fence line	There should be no deer fencing for woodland creation schemes
Landscape & Wild land	No reasonable alternative
Designated sites-Extra caution is required when considering woodland creation in designated sites, however the wider benefits of woodland creation, encouraging natural processes and the enhancement of landscape scale habitat networks must also be fully considered and implemented where possible	Designated Sites: There should be no new woodland creation on woodland sites
Forest Habitat Networks	No reasonable alternative
Montane Woodland	No reasonable alternative
Riparian Woodland	No reasonable alternative
Aspen	No reasonable alternative
Woodland Remnants	No reasonable alternative
Ancient & Semi-natural Woodlands	No reasonable alternative
Harvesting: Minimise clearfelling and retain seed bearing native trees.	Clearfelling- no specific limits for clearfelling
Biosecurity, invasive species & wildfire	No reasonable alternative
Rural development	No reasonable alternative
Employment	No reasonable alternative
Productive Woodland	No reasonable alternative
Natural Flood Management	No reasonable alternative
Low carbon and carbon trading	No reasonable alternative
Responsible Access	No reasonable alternative
Health	No reasonable alternative

Table 8b Summary of the SEA of the CFS's's Preferred and Reasonable Alternative Options.

Preferred and Reasonable Alternative (RA) Options	1a Reduce greenhouse gas emissions	1b. Increase resilience to climate change	2. Protect and enhance air quality	3a. Reduce flood risk	3b. Maintain and improve the quality of water	4. Safeguard and improve soil and peat quality	5. Sustainable use and reuse of material assets	6a. Value, conserve and enhance biodiversity	6b. Improve the management of woodland	7. Protect the special qualities of the landscape	8a. Maximise health and wellbeing	8b. Vibrant, safe and healthy communities.
Encourage innovation in use of Native forest products	0	+	+	0	0	0	++	+	++	++	++	++
RA: Encourage innovation in use of ***non-native*** forest products	0	+	+	0	0	0	++	-	+	-	-	-
Deer Fencing	+	+	0	+	+	+	++	++	++	-	-	?
RA: No deer fencing	-	-	0	-	-	-	-	-	-	+	?	?
Designated Sites	+	+	0	0	0	0	++	++	++	++	++	++
RA: No planting on designated sites	0	0	0	0	0	0	++	-	-	-	-	-
Forest habitat networks	++	+	+	++	++	++	++	++	++	++	++	++
RA: No forest habitat networks	0	0	0	0	0	0	0	-	0	0	0	0
Harvesting -limiting clear-fell	++	+	0	++	++	++	++	++	++	++	++	++
RA: harvesting no-limits on clear fell	-	-	0	-	0	-	-	-	-	-	-	-

Key Messages from Assessment

Generally, the CFS's outcomes and policies scored well in the assessment with 77% scoring positively (**Error! Reference source not found. 9)**. 22% of the proposed objectives and policies were assessed as having no predicted outcome against SEA objectives. No likely significant adverse effects were identified. Less than 2% were predicted as having minor adverse effects, these being linked to economic growth, an increase in population and visitors and landscape impacts. Mitigation measures have been identified that address all potential negative effects (**Table**).

Overall, it is considered that the CFS will result in significant positive effects that would not be realised under 'no plan' scenario.

Long Term Significance	Count	%
++	240	60.6%
+	63	15.9%
□	86	21.7%
?	2	0.5%
-	5	1.26%
--	0	0.0%

Table 9 Summary of SEA's conclusions.

Mitigation

Table 10 Summary of measures proposed to mitigate any negative effects arising from the implementation of the CFS and provide enhancement.

SEA Objective	Issue / Impact Identified	Mitigation/ Enhancement Measure	Lead Authority	Proposed Timescale
1a Reduce greenhouse gas emissions	Economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it is likely to result in an increase in GHG emissions. Increases in recreational opportunity and attractiveness are likely to result in more car visits within the CNP. With mitigation measures in place within the CFS this will not be a significant increase.	Mitigation measures are already built into the CFS. The overall strategy outcome has a target for 1000ha of new woodland every year, this will more than compensate for a slight increase in GCG emissions. Furthermore the strategy promotes an increase in the capacity of local processing facilities and local timber business reducing the need to transport timber out of the Park The policy on low carbon and carbon trading which promotes wood fuel over fossil fuel will reduce GHG emissions New woodlands will be designed to avoid planting on deep peat or damaging the adjoining peatland hydrology.	CNPA and partners	The Strategy – 20yrs
2 Protect and enhance air quality	Economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it could result in localised reductions in air quality. Increases in recreational opportunity and attractiveness are likely to result in more car visits within the CNP and potential for localised	Mitigation measures are already built into the CFS. The overall strategy outcome has a target for 1000ha of new woodland every year, this will more than compensate for a slight increase in GCG emissions. Furthermore the strategy promotes an increase in the capacity of	CNPA and partners	The Strategy – 20yrs

SEA Objective	Issue / Impact Identified	Mitigation/ Enhancement Measure	Lead Authority	Proposed Timescale
	reductions in air quality. With mitigation measures in place within the CFS this will not be a significant increase.	local processing facilities and local timber business reducing the need to transport timber out of the Park The policy on low carbon and carbon trading which promotes wood fuel over fossil fuel will improve air quality. Woodland planting can help to ameliorate air pollution by trapping VOC's and nitrates eg woodland planting along main roads.		
3. Protect and enhance water quality	The CFS has the potential to improve water quality and bank morphology within the river catchments in the CNP through targeted riparian planting and meet the objectives of the WFD.	Riparian planting is encouraged within the CFS, working with the Catchment partnerships, riparian planting can target areas where there are particular issues from diffuse pollution or eroding banks. The riparian zone of all burns and rivers is included in the preferred areas within the woodland creation map of the CFS.	CNPA and partners	The Strategy – 20yrs
6. Biodiversity, Fauna and Flora	Planting or allowing regeneration in Designated Sites	No tree planting or regeneration will be promoted in areas where there could be a negative effect on designated site integrity.	CNPA and partners	The Strategy – 20yrs
6. Biodiversity, Fauna and Flora	An increase in forest networks will increase the ecological permeability of the landscape for many species potentially including invasive non-natives	Increasing ecological permeability is a positive outcome for allowing adaptation to climate change, preventing genetic	CNPA and partners	The Strategy – 20yrs

SEA Objective	Issue / Impact Identified	Mitigation/ Enhancement Measure	Lead Authority	Proposed Timescale
	and disease	isolation and increasing species range and strengthening population viability however, care must be taken that permeability is not at the same time increased for invasive non-native species for example grey squirrel, which at present is prevented from accessing Speyside from the south because of the lack of suitable woodlands. Conversely increasing ecological permeability and habitat cover will also increase abundance of predators eg pine marten.		
6. Biodiversity, Fauna and Flora	An increase in recreation has the potential to disturb sensitive species (capercaillie)	The strategy advocates the use of Recreational Management Plans which aim to balance the needs of timber producers, visitors, conservation and sporting interests. Any new proposal for the construction of a new pathway, activity centre or access track within core capercaillie areas will be subject to a Habitats Regulations Appraisal to assess impacts on capercaillie. The Capercaillie Framework will provide a strategic framework for effective mitigation. Ultimately the objectives of the CFS will result in increased capercaillie habitat.	CNPA and partners	The Strategy – 20yrs

SEA Objective	Issue / Impact Identified	Mitigation/ Enhancement Measure	Lead Authority	Proposed Timescale
6. Biodiversity, Fauna and Flora	An increase in woodland cover close to important sites for breeding waders will reduce suitability of the site	New woodland creation schemes should avoid priority sites for wading birds	CNPA, SWWI, RSPB and partners	The Strategy – 20yrs
7 Protect and enhance the character, diversity and special qualities of the National Park's landscape and cultural and historic heritage	Deer fencing can have negative landscape effects	Deer fencing will still be used where there is no alternative but its use will be carefully assessed and used in those areas where it will have less negative impact on landscape qualities	CNPA and partners	The Strategy – 20yrs
8 Population & Human Health	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit landscape qualities, however fencing can have negative impacts on access	Ensure there are gates in deer fencing to retain access through areas of planted woodland	CNPA and partners	The Strategy – 20yrs

Monitoring

> "…*focusing monitoring on the significant environmental effects identified in the assessment is likely to encourage the creation of new monitoring regimes. It is therefore practical to make a clear link between the significant effects predicted within an assessment and the indicators selected to monitor the likely environmental effects.*"
>
> SEA Guidance
> (Scottish Government, 2013)

It is a requirement of the Environmental Assessment (Scotland) Act 2005 that the significant environmental effects of implementing a plan or program are monitored. This environmental monitoring may in turn form part of the monitoring framework for the CFS itself.

SEA monitoring should be undertaken for the following reasons:

- to identify whether the SEA's predictions of environmental effects were accurate;
- to identify unforeseen adverse effects and to enable appropriate remedial action to be taken;
- to identify whether the plan is contributing to the achievement of SEA Objectives;
- to identify whether mitigation measures are performing as well as expected;
- to identify whether any adverse effects are within acceptable limits or whether remedial action is required;
- to help compile a baseline for future plans and programmes; and
- to provide information for the EIAs of projects.

The 2005 Act does not require bespoke monitoring arrangements or timelines to be set out for SEA. Furthermore SEA monitoring should be based around the significant environmental effects identified during the assessment. The potential for significantly adverse effects has not been identified by the assessment and therefore there is not a duty under the act to establish a monitoring framework. However there are indicators which can form the basis of monitoring success and influence including:

- % change in woodland cover: target for 1000ha p.a.
- % change in native woodland cover: riparian, montane, aspen
- Increase in woodland condition: SSSI condition monitoring
- Improvements in WFD status (SEPA monitoring)

The Environmental Report is not the conclusion of the SEA process and the proposed monitoring framework will be refined following its publication. A finalised set of indicators will be set out in the Post-adoption Statement, which will be published following the CFS's final approval.

Next Steps

> "*Consultation with the Consultation Authorities at screening and scoping stages has a statutory duration period of 28 days and five weeks respectively.*"
>
> SEA of Development Plans
> (Scottish Government, 2010)

The draft CFS will go out to public consultation in February 2018 for a period of three months during which time the SEA Environmental Report will also be consulted on. The final CFS and its Environmental Report will be submitted for approval in June/July 2018.

Once the CFS has been approved a Post-adoption Statement will be published. The Post-adoption Statement will summarise how the CNPA took the findings of the SEA process into account and how environmental considerations more generally have been integrated into the CFS. It will also be stated within the Post-adoption Statement if any changes have been made to the CFS as a result of the SEA process and following responses to consultation. If changes have been rejected this will also be explained.

It will also be necessary for the CNPA to monitor significant effects following the adoption of the CFS in accordance with the Scottish Government's SEA Guidance (2013). This monitoring framework will be finalised in the Post-adoption Statement.

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Appendices

Appendix 1: Plans, Policies and Strategies

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
International Directives and Policies			
The Clean Air Policy Package (EC, 2013)	The package consists of a Clean Air Programme for Europe with air quality objectives for the period up to 2030, a revised National Emission Ceilings Directive (currently under review) with stricter national emission ceilings for the six main pollutants, and a proposal for a new Directive to reduce pollution from medium-sized combustion installations.	➢ Air ➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Population and Human Health	The Proposals of the Strategy should not adversely affect air quality.
Directive 91/676/EEC: Nitrates Directive	Requires member states to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution.	➢ Water ➢ Biodiversity, Fauna and Flora	Strategy should not increase water pollution caused or induced by nitrates from agricultural sources.
Directive 92/42/EC: The Conservation of Natural Habitats of Wild Fauna and Flora	Requires member states to sustain populations of naturally occurring flora and fauna by sustaining areas of habitats to maintain ecologically and scientifically sound levels.	➢ Water ➢ Biodiversity, Fauna and Fauna ➢ Landscape and Cultural Heritage	Strategy must ensure protection and enhancement of Natura Sites and protection of European Protected Species.
Directive 2000/60/EC: The Water Framework	Requires member states to achieve good ecological status of inland water bodies, and develop integrated	➢ Water ➢ Biodiversity, Fauna	Strategy should support protection and enhancement of

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Directive	catchment management and river basin management plans.	and Flora ➢ Landscape and Cultural Heritage	the water environment.
Directive 2001/42/EC: Strategic Environmental Assessment Directive	Requires Strategic Environmental Assessments to be undertaken for Plans, programmes and strategies with significant environmental effects.	➢ All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Enables significant environmental effects of the Strategy to be identified and addressed.
Directive 2001/81/EC (NECD): National Emissions Ceiling Directive	Sets ceilings for each member state for emissions of ammonia, oxides of nitrogen, sulphur dioxide and volatile organic compounds.	➢ Air ➢ Population and Human health	Strategy should reflect the purpose of the Directive and should not adversely affect air quality.
Directive 2002/49/EC: Environmental Noise Directive	Aims to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to the exposure to environmental noise	➢ Population and Human health	Strategy should seek to ensure policies and developments do not result in negative health and wellbeing effects resulting from noise.
Directive 2006/7/EC: Bathing Water Directive	Aims to protect the public and the environment from faecal pollution at waters used for bathing by a large number of visitors.	➢ Water ➢ Population and Human health	Strategy should consider the contribution that actions could make towards the attainment of bathing water quality standards.
Directive 2006/113/EC: The Shellfish Waters	Aims to protect or improve shellfish waters in order to support shellfish life and growth. It is designed to protect the aquatic habitat of bivalve and gastropod	➢ Water ➢ Biodiversity, Fauna and Flora	Strategy should seek to avoid negative effects on shellfish waters, which in the National

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Directive	molluscs, which include oysters, mussels, cockles, scallops and clams.		Park context include Freshwater Pearl Mussel.
Directive 2006/118/EC: Groundwater Daughter Directive	Made under the Water Framework Directive, the Daughter Directive aims to prevent and limit inputs of pollutants to groundwater.	➢ Water ➢ Soil ➢ Population and Human health	Strategy should where possible contribute to the protection of groundwater resources.
Directive 2007/60/EC: Floods Directive	Requires member states to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk	➢ Climatic Factors ➢ Water ➢ Population and Human health	Strategy should reduce and manage flood risk encouraging natural flood management approaches.
Directive 2008/50/EC: Ambient Air Quality and Cleaner Air for Europe	Establishes standards for air quality and sets limits for various pollutants.	➢ Air ➢ Population and Human health	Strategy should support measures that would improve air quality.
Directive 2009/28/EC: Promotion of the use of energy from renewable sources	Establishes a common framework for the production of energy from renewable sources and the promotion of its use.	➢ Climatic factors	Strategy should seek to promote the development and use of appropriate renewable energy sources.
Directive 2009/147/EC on the Conservation of Wild Birds	Requires member states to sustain populations of naturally occurring wild birds by sustaining areas of habitats to maintain ecologically and scientifically sounds levels.	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support protection and enhancement of bird habitat through policies and targets.
European Framework for	Promotes quality of life, coherent and cost effective	All SEA Issues listed in	The Strategy should support

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Sustainable Development (2001)	policy making, technological innovation, stronger involvement of civil society and business in policy formulation. Strategies for sustainable economic growth should support social progress and respect the local environment.	Schedule 2 of the Environmental Assessment (Scotland) Act 2005	social progress and respect the local environment.
European Landscape Convention (2000)	Promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues	➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural heritage ➢ Population and Human health	Strategy should be a tool for the maintenance and restoration of landscapes and their natural habitats.
European Union Biodiversity Strategy to 2020 (2011)	Strategy aims to halt the loss of biodiversity and ecosystem services in the EU by 2020.	➢ Biodiversity, Fauna and Flora	Strategy should support conservation and enhancement of biodiversity.
European Union Climate Change Agreement 2007	EU member states agreed to cut greenhouse gas emissions by 20 per cent by 2020.	➢ Climatic Factors	Strategy should seek to promote the development and use of appropriate renewable energy sources and contribute to climate change mitigation.
European Union Common Agricultural Policy	Sets policy for agricultural support with increased emphasis on rural development support.	➢ Landscape and Cultural Heritage ➢ Population and Human Health	Strategy should recognise and provide for rural diversification of economic activities.
European Union Policy	A framework for EU climate and energy policies in the	➢ Climatic Factors	Strategy should seek to promote

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Framework for Climate and Energy (2020 to 2030)	period from 2020 to 2030. At the heart of the 2030 framework is a 40 % reduction in greenhouse gas emissions by 2030.		the development and use of appropriate renewable energy sources and contribute to climate change mitigation.
Kyoto Protocol (UNFCCC, 1997)	Protocol to the international Framework Convention on Climate Change Framework with the objective of reducing the Greenhouse gases that cause climate change.	➢ Climatic factors	Strategy should support measures that will reduce greenhouse gas emissions.
The Pan-European Biological and Landscape Diversity Strategy (Council of Europe, 1995)	The Strategy aims to reverse the decline of landscape and biological diversity, by promoting innovation and proactive policy making.	➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human health	Strategy should support the Strategy by considering the contribution that actions could make to protecting biodiversity and landscapes.
Ramsar Convention on Wetlands of International Importance 1971	Requires conservation and wise use of wetlands.	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should ensure the protection and enhancement of wetlands.
Sixth Environmental Action Programme of the European Community 1600/2002/EEC	Promotes Clean Air for Europe (CAFÉ), supports sustainable use of pesticides, conservation of the marine environment, soil protection, waste prevention and recycling as well as the sustainable use of natural	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland)	The Strategy should promote all forms of sustainable development.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
	resources.	Act 2005	
Taking Sustainable Use of Resources Forward: A thematic Strategy on the prevention and recycling of waste (EU 2005)	A sector based strategy produced under the Environmental Action Programme.	➢ Climatic factors ➢ Air ➢ Material assets	Strategy should seek to minimise waste and promote recycling.
Thematic Strategy for Soil Protection (EU 2006)	The Soil Thematic Strategy is seeking to establish common principles for the protection and sustainable use of soils.	➢ Soil	Strategy should contribute towards the protection and improvement of soil.
UN Convention on Biological Diversity (1992)	Key objective of the Convention is to develop national strategies for the conservation and sustainable use of biological diversity, which should be integrated across other policy sectors.	➢ Biodiversity, Fauna and Flora	Strategy should look for opportunities to conserve, and where possible restore, biodiversity.
UN Framework Convention on Climate Change (the Rio Earth Summit) 1992	Treaty aimed at reducing global emissions of greenhouse gases to combat global warming.	➢ Climatic factors	Strategy should assist in the reduction of greenhouse gas emissions.
National Legislation (UK and Scotland)			
Air Quality (Scotland) Regulations 2000 and Amendment 2002	Establishes standards for air quality and sets limits for various pollutants in Scotland.	➢ Air ➢ Population and Human health	Strategy should support measures that would improve air quality.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Climate Change Act 2008	The Act sets a statutory target for the UK as a whole to reduce greenhouse gas emissions by at least 80 per cent by 2050 and provides a framework for shared action. In Scotland, its targets are subsumed by the Climate Change (Scotland) Act 2009	➢ Climatic factors	Strategy should support and include climate change adaptation and mitigation measures.
Climate Change (Scotland) Act 2009	Outlines emission reduction targets, adaptation measures, and establishes duties on public bodies.	➢ Climatic factors	The Strategy should support and include climate change adaptation and mitigation measures.
Conservation (Natural Habitats, &c) Regulations 1994 (as amended for Scotland)	These regulations relate to the designation of Natura sites, and provision of protection to various plant and animal species.	➢ Biodiversity, Fauna and ➢ Flora	Strategy should ensure that Natura 2000 sites are protected from loss or damage.
Environment Act 1995	The Act sets new standards for environmental management by National Parks and other statutory bodies.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	The CNPA must adhere to the standards set out in the Act.
Environmental Assessment (Scotland) Act 2005	Requires Strategic Environmental Assessments to be completed for Plans, programmes and strategies likely to have significant environmental effects.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Enables the significant environmental effects of the Strategy to be identified and addressed.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999	Requires environmental impact assessments for certain forestry projects.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	The Strategy will be required to be compatible with Environmental Impact Assessments legislation.
Environmental Impact Assessment (Scotland) Regulations 2011	Requires environmental impact assessment of site specific projects and specifically requires consideration of Sensitive Areas including National Parks.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	The Strategy will be required to be compatible with Environmental Impact Assessments legislation.
Equality Act 2010	The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society.	➢ Population and Human health	The Strategy should ensure that it does not result in individuals or groups with protected characteristics being discriminated against.
Flood Risk Management (Scotland) Act 2009	Establishes roles, responsibilities and requirements for sustainable flood management.	➢ Climatic Factors ➢ Water ➢ Population and Human health	Strategy should support flood management, particularly natural flood management.
Gaelic Language (Scotland) Act 2005	The Act aims to secure Gaelic as an official language of Scotland, "commanding equal respect" with English	➢ Landscape and Cultural heritage ➢ Population and Human health	In its production the Strategy should meet the requirements of the Act and enable and other partners, including those not covered by the Act, to do the

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
			same.
Historic Environment Scotland Act 2014	Has the general function of investigating, caring for and promoting Scotland's historic environment.	➢ Landscape and Cultural heritage	Strategy should support the protection and preservation of the historic environment.
Land Reform (Scotland) Act 2003	Establishes right of responsible access to land and water.	➢ Water ➢ Landscape and Cultural Heritage ➢ Biodiversity, Fauna and Flora ➢ Population and Human health	Strategy can provide for and support responsible access.
National Parks (Scotland) Act 2000	Specifies what a Park Authority can do and how it should be run, including a requirement to produce a National Park Strategy.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Establishes the aims of National Parks. Provides direction on the functions and role of the National Park Authority.
Nature Conservation Act (Scotland) 2004	Act places duties on public bodies for conserving biodiversity, increases protection for Sites of Special Scientific Interest (SSSI), amends legislation on Nature Conservation Orders, provides for Land Management Orders for SSSIs and associated land, strengthens wildlife enforcement legislation, and requires the preparation of a Scottish Fossil Code.	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support conservation and enhancement of biodiversity.
Our Place in Time –the	The key outcome is to ensure that the cultural, social,	➢ Landscape and	Strategy should support the

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Historic Environment Strategy for Scotland 2014	environmental and economic value of Scotland's historic environment continues to make a strong contribution to the wellbeing of the nation and its people.	Cultural Heritage	protection and preservation of the historic environment.
Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997	Prescribes the approach to be taken in Planning for listed buildings, conservation areas and designed landscapes and gardens.	➢ Material Assets ➢ Landscape and Cultural heritage	Strategy should ensure that listed buildings, conservation areas and designed landscapes and gardens are not adversely affected by new development.
Protection of Badgers Act 1992 (as amended)	Protects badgers	➢ Biodiversity, Fauna and Flora	Strategy should seek to protect badgers.
Water Environment and Water Services (Scotland) Act 2003	Transposes the Water Framework Directive into Scots law.	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human health	Strategy should encourage improvements to the water environment and support measures for more efficient use of water.
Wildlife and Countryside Act 1981	Requires certain species to be protected.	➢ Biodiversity, Fauna and Flora	Strategy should support protected species.
Wildlife and Natural Environment (Scotland)	Amends Wildlife and Countryside Act 1981, and seeks to modernise game law; abolish the designation 'areas of special protection'; improve snaring practice; regulate	➢ Biodiversity, Fauna and Flora	Strategy should support provisions of the Act.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Act 2011	invasive non-native species; change the licensing system for protected species; amend current arrangements for deer management and deer stalking; strengthen protection of badgers; change how muirburn can be practised; and make operational changes to the management of Sites of Scientific Interest; game law, use of shores, and invasive species legislation.		
National Policy (UK and Scotland)			
Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)	Sets out objectives for eight air pollutants.	➢ Air ➢ Population and Human health	Strategy should encourage reductions in emissions through a range of measures.
Changing Our Ways: Scotland's Climate Change Programme	Demonstrates how Scotland will deliver carbon savings from devolved policy measures and reduce its vulnerability to the changing climate.	➢ Climatic factors ➢ Population and Human health	Strategy should encourage reductions in emissions through a range of measures.
Choosing our future: Scotland's Sustainable Development Strategy	Outlines a strategic framework for the Scottish Government's strategies on climate change, transport, renewable energy, energy efficiency, green jobs and biodiversity.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Strategy should help deliver sustainable development.
Cleaner Air for Scotland – The Road to a Healthier	The national cross-government strategy that sets out how the Scottish Government and its partner	➢ Air ➢ Population and	Strategy should encourage reductions in emissions through

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
Future (2015)	organisations propose to reduce air pollution further to protect human health and fulfil Scotland's legal responsibilities as soon as possible.	Human health	a range of measures.
Climate Change: The UK Programme	Goal to reduce carbon emissions in the UK by 60% by 2050.	➢ Climatic factors ➢ Air	Strategy should encourage reductions in emissions through a range of measures.
Groundwater Protection Policy for Scotland (SEPA, 2009)	This policy aims to provide a sustainable future for Scotland's groundwater resources by protecting legitimate uses of groundwater and providing a common SEPA framework.	➢ Water ➢ Soil	Strategy should aim, where possible, to manage significant flood risk to groundwater from flooding related pollution.
Designations Three Year Strategy 2016 - 2019	This document sets out the three year Strategy for Historic Environment Scotland's work on designations. Find the aims and priorities for the organisation until 2019	➢ Landscape and Cultural heritage	Strategy should follow the guidance when considering designated sites and structures.
Historic Environment Circular 1	This circular covers the requirements of the secondary legislation ('the Regulations') relating to the Historic Environment Scotland Act 2014 ('the 2014 Act').	➢ Landscape and Cultural heritage	Strategy should follow the guidance for policy development on the management of the historic environment.
Historic Environment Policy Statement (2016)	Document to which planning authorities are directed in their consideration of applications for conservation area consent, listed building consent for buildings of all three categories and their consideration of planning applications affecting the historic environment and the setting of	➢ Landscape and Cultural heritage	Strategy should follow the guidance for policy development on the management of the historic environment.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
	individual elements of the historic environment.		
Land Use Strategy for Scotland (2011)	Outlines strategy for achieving sustainable land use across Scotland and getting the best from the land of Scotland.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Strategy can provide more specific direction on the National Land Use Strategy and can be implemented at a regional level.
Managing Change in the Historic Environment Guidance Notes	Series of guidance notes which are designed to support the Scottish Historic Environment Policy (SHEP) and Scottish Planning Policy.	➢ Landscape and Cultural heritage	Guidance for policy development on the management of the historic environment.
National Planning Framework 3 (2014)	A long term strategy for Scotland that provides the spatial expression of the Government's Economic Strategy and plans for the development and investment in infrastructure.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Provides strategic context for future regional change around the Park.
Scotland Policy on Control of Woodland Removal	Sets out Scottish Ministers policy on woodland removal	➢ Climatic Factors ➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support the policy
The River Basin Management Strategy for	Fulfils a requirement under the EU Water Framework	➢ Water ➢ Soil	Includes management objectives for water bodies in the National

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
the Scotland River Basin District: 2015–2027	Directive.	➢ Biodiversity, Fauna and Flora	Park which the Strategy should take account of.
Scotland Rural Development Programme	Sets goals for sustainable rural development and the types of support available.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Strategy can provide more specific direction on how rural development and diversification should be supported in the Park.
Scotland's Climate Change Adaptation Framework (2009)	The framework plays a central role in building Scotland's resilience to the changing climate, by setting the strategic direction for Scottish Government actions and providing specific actions for different sectors	➢ Climatic factors ➢ Population and Human health	Strategy should support and include climate change adaptation and mitigation measures.
Scotland's Economic Strategy	Reaffirms the Scottish Government's commitment to creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.	➢ Material assets ➢ Population and Human Health	Strategy should encourage economic development that does not adversely affect the special qualities of the Park.
Scotland's National Transport Strategy (2006)	Scottish Government's National Strategy for reducing transport emissions by 80%.	➢ Climatic Factors ➢ Air ➢ Population and Human health	Strategy should support reductions in emissions from transport.
Scottish Biodiversity Strategy	Comprises of two documents: • Scotland's Biodiversity – It's in Your Hands. A strategy for the conservation and enhancement of biodiversity in Scotland (2004) • 2020 Challenge for Scotland's Biodiversity - A Strategy	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should reflect the purpose of the Strategy through support for the Cairngorms Nature Action Strategy 2013 -

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
	for the conservation and enhancement of biodiversity in Scotland (2013) Identifies Scottish biodiversity priorities and lead partners for taking action.		2018.
Scottish Forestry Strategy (2006)	Outlines strategic priorities for forestry including management, planning and environmental stewardship.	➢ Water ➢ Soils ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should provide a strategic direction for forestry policy within the National Park.
Scottish Geodiversity Charter 2012-2017	Charter sets out why geodiversity is important, and presents a vision that geodiversity is recognised as an integral and vital part of our environment, economy, heritage and future sustainability to be safeguarded for existing and future generations in Scotland.	➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	The CNPA is a signatory to the Charter and therefore the Strategy should include actions to help meet its objectives.
Scottish Government's National Outcomes	The Scottish Government has 15 National Outcomes that the public sector must collectively deliver.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	The Strategy should identify and contribute to delivery of the outcomes that are most appropriate in the Park.
Scottish Government Purpose	The Scottish Government's purpose is to secure sustainable economic growth for Scotland. All the public sector should be working to the purpose.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland)	The Strategy should support the delivery of sustainable economic growth in the context of the Park and its special qualities and

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
		Act 2005	management needs.
Scottish Soil Framework 2009	Ministers policies and objectives for the conservation and use of soils.	➢ Climatic Factors ➢ Water ➢ Soil ➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage ➢ Population and Human health	Strategy should promote soil conservation.
Scottish Water Business Strategy 2015 - 2021	The business Strategy sets out how Scottish Water will deliver improvements to drinking water quality, the environment and customer service required by Scottish Ministers.	➢ Water ➢ Population and Human health	Strategy should be developed with regard to the objectives and actions proposed in the Business Strategy.
Tourism Scotland 2020 – A Strategy for Leadership and Growth	The strategy targets those markets that offer Scotland the greatest growth potential, provides collaboration within and across Scotland's tourism destinations and develops the authentic memorable experiences tourists seek.	➢ Landscape and Cultural Heritage ➢ Population and Human health	Strategy should support development of sustainable tourism to contribute to national targets for tourism growth.
UK Geodiversity Action Strategy	The Action Strategy provides a framework in which actions for geodiversity can be captured in one place, allowing a range of organisations, groups and individuals to demonstrate their achievements in a UK-wide	➢ Material Assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	The CNPA is a signatory to the Scottish Geodiversity Charter and therefore the Strategy should include actions to help

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
	context		promote and protect the National Park's geodiversity.
UK Post-2010 Biodiversity Framework 2011 – 2020	The Framework sets out the common purpose and shared priorities of the UK and Scotland for the management of the environment as a whole.	➢ Water ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should reflect the purpose of the Framework through support for the Cairngorms Nature Action Strategy 2013 - 2018.
Local Strategies			
A9 Dualling Strategy	The project involves the upgrade of 80 miles of single carriageway along the A9 between Perth and Inverness by 2025.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	The Strategy will need to consider the effects of the duelling on the aims of the National Park and how this will influence the spatial priorities of the CNPA.
Cairngorms National Park Capercaillie Framework 2015	Provides a set of working data, analysis and recommendations that will inform implementation across a wide spectrum of work, from habitat and species management, to recreation management and development planning.	➢ Biodiversity, Fauna and Flora	Strategy should support the aims of the Framework and ensure that Capercaillie and their habitat are not adversely affected by management and planning decisions.
Cairngorms National Park Core Paths Strategy 2015	Identifies a network of core paths throughout the National Park.	➢ Biodiversity, Fauna and Flora ➢ Population and	Strategy should support the promotion and development of

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
		Human health	core paths.
Cairngorms National Park Economic Strategy 2015-2018	The purpose of the Strategy for the Cairngorms National Park is to identify the priorities that are specifically relevant to the area and to ensure that partners are working together to address them.	➢ Population and Human Health	Strategy should support the National Park's aim to promote sustainable economic and social development of the area's communities.
Cairngorms National Park Landscape Framework	A framework for managing landscape change in the Cairngorms to maintain and enhance the special landscape qualities and character.	➢ Landscape and Cultural heritage	Strategy will use this to guide appropriate development to the right location.
Cairngorms National Park Gaelic Language Strategy 2013	A Strategy that aims to enhance the Gaelic Language and culture within the National Park.	➢ Landscape and Cultural Heritage ➢ Population and Human health	Strategy can support the Gaelic language through good design and placemaking.
Cairngorms National Park Local Development Strategy 2015	Establishes development and settlement strategy for the Park, allocates specific development sites, and provides policies for managing development in the Park.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	This is the current framework for development within the National Park. The Strategy will need to take account of its contents.
Cairngorms Nature Action Strategy 2013-2018	Priorities and actions for biodiversity in the National Park.	➢ Water ➢ Biodiversity, Fauna and Flora	Strategy should support the implementation and review of Cairngorms Action Strategy
Active Cairngorms (2015)	Provides a framework for managing outdoor access in the Park.	➢ Biodiversity, Fauna and Flora	Strategy can support and promote responsible outdoor

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
		➢ Landscape and Cultural Heritage ➢ Population and Human health	access.
Community Strategies	Strategies set out how public services will be delivered, through consultation and co-operation.	All SEA Issues listed in Schedule 2 of the Environmental Assessment (Scotland) Act 2005	Strategy can support parts of Community Strategies.
Community Visions and Local Community Action or development Strategies	Statements from communities in the Park about how they would like to change or develop in future, sometimes with Strategies on how to get there.	➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural heritage ➢ Population and Human health	Strategy can support communities in developing their own Strategies and capacity.
Economic Development Strategies	Priority areas for economic development.	➢ Soil ➢ Material assets ➢ Population and human health	Strategy should encourage economic development that does not adversely affect the special qualities of the Park.
Local Authority Single Outcome Agreements	Strategic documents outlining priorities across communities in the National Park.	All SEA issues listed in Schedule 2 of the Environmental Assessment (Scotland)	Strategy can help deliver community priorities.

Relevant PPS	Relevant Objectives/Purpose	SEA Issue / Topic	Relationship between the PPS and the CFS
		Act 2005	
River Dee Catchment Management Strategy (2016)	Aims to promote sustainable use of natural resources, to improve water quality and biodiversity.	➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural heritage	Strategy should support integrated catchment management as a way of improving water quality and the health of natural systems.
River Spey Catchment Management Strategy (2016)	Aims to promote sustainable use of natural resources, to improve water quality and biodiversity.	➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support integrated catchment management as a way of improving water quality and the health of natural systems.
South Esk River Catchment Management Strategy (2009)	Aims to promote sustainable use of natural resources, to improve water quality and biodiversity.	➢ Water ➢ Soil ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support integrated catchment management as a way of improving water quality and the health of natural systems.
Strategy and Action Strategy for Sustainable Tourism in the Cairngorms 2011-2016	Identifies measures to support and develop sustainable management of tourism in the Park in line with the Europarc Federation of Protected Areas Charter.	➢ Air ➢ Water ➢ Material assets ➢ Biodiversity, Fauna and Flora ➢ Landscape and Cultural Heritage	Strategy should support the implementation of the Sustainable Tourism Strategy.

Appendix 2: Environmental Baseline

Topic 1: Climatic Factors

> "*In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans.*"
>
> Inter-governmental Panel on Climate Change (2014).

Scotland has a temperate climate with cool summers and mild winters. As a whole it is influenced by predominantly westerly depressions alternating with less frequent settled periods. A range of factors, including topography, latitude and altitude, affect these weather systems at a more local level.

Rainfall is spread throughout the year but there are regional differences. For example, the easterly position of the Cairngorms massif results in a climate that is less oceanic, and therefore drier, than the west of Scotland. The mountains exert a noticeable rain shadow effect that reduced the amount of rainfall on the eastern side of the country.

Scotland is currently experiencing climate change, which owing to the global emission of greenhouse gasses, is likely to continue into the future. The effects of this are likely to include:

- hotter, drier summers;
- milder, wetter autumns and winters.
- increased frequency and intensity of extreme rainfall; and
- reduced snowfall.

Past Trends

The 20th and 21st centuries have already seen a rise in average maximum and minimum temperatures throughout Scotland. This trend is reflected in the Cairngorms National Park, as demonstrated by historical data provided by the Braemar weather station (**Figure**). Records from the weather station also indicate that the National Park is experiencing a decrease in the number of days of air frost and an increase in annual rainfall (**Figure** and **Figure**). This is consistent with broader trends across Scotland.

Climate Projections

Climate Change projections are available from The UK Climate Projections (UKCP09) website, which is the leading source of climate information for the UK and its regions. Probabilistic projections are available for high, medium and low emission scenarios at resolutions as fine as 25km^2. It is possible therefore to analyse data for the area in which Braemar sits (Grid Box No. 612) (see **Figure** and **Figure**).

It is recognised that this is a blunt proxy for the National Park as a whole, however it is useful in when taken together with the historic climate data taken from the Braemar Weather Station. How this change relates to the UK as a whole is presented in **Figure** , **Figure** and **Figure** .

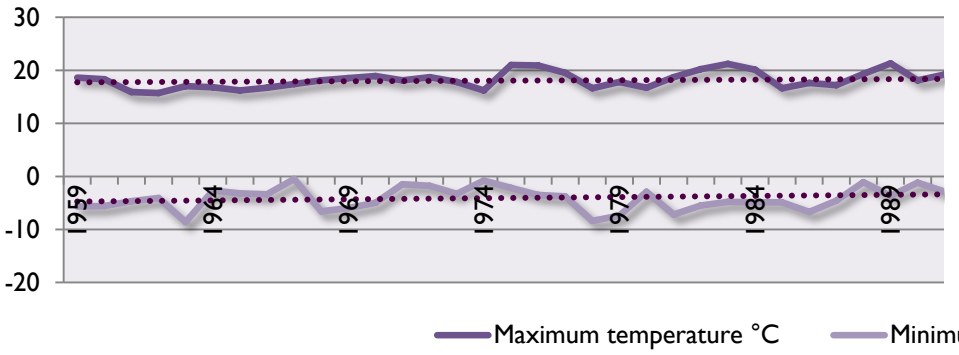


Figure 1 Maximum and minimum annual temperatures at Braemar Weather Station (Met Office, 2015).

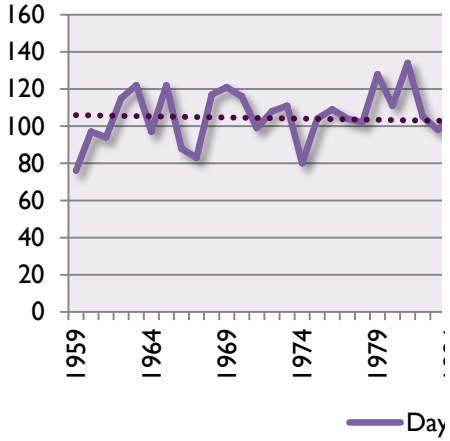


Figure 2 Days of frost at Braemar Weather Station (Met Office, 2015).

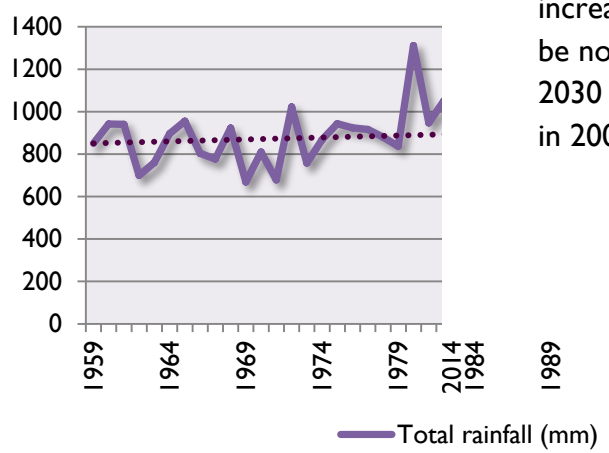


Figure 3 Total Rainfall at Braemar Weather Station (Met Office, 2015).

In summary from the benchmark of 2009, by 2050, under the medium emissions scenario, the central estimate (50% probability level) for Braemar is for a:

- 2.4°C increase in mean annual temperature,
- 2.7°C increase in mean summer temperature,
- 2.1°C increase in mean winter temperature,
- 0.07% increase in mean annual precipitation, but with a
- 13.5% decrease in mean summer precipitation, and a
- 2% decrease in mean winter precipitation.

Although precipitation rates only show a relatively small net annual increase, as well as summer and winter decreases by 2050, it should be noted that this is but a snapshot. Annual precipitation between 2030 and 2059 is projected to be higher, at around 0.3% greater than in 2009.

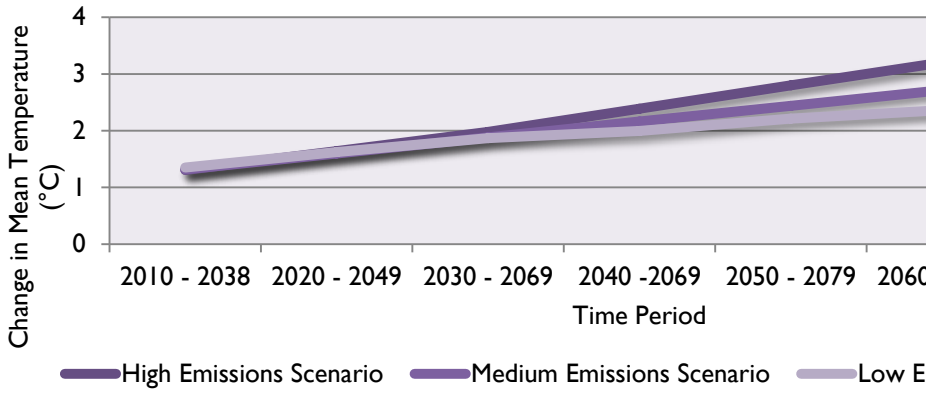


Figure 4 Central estimate for mean change in annual temperature for Grid Box No. 612 (Braemar area).

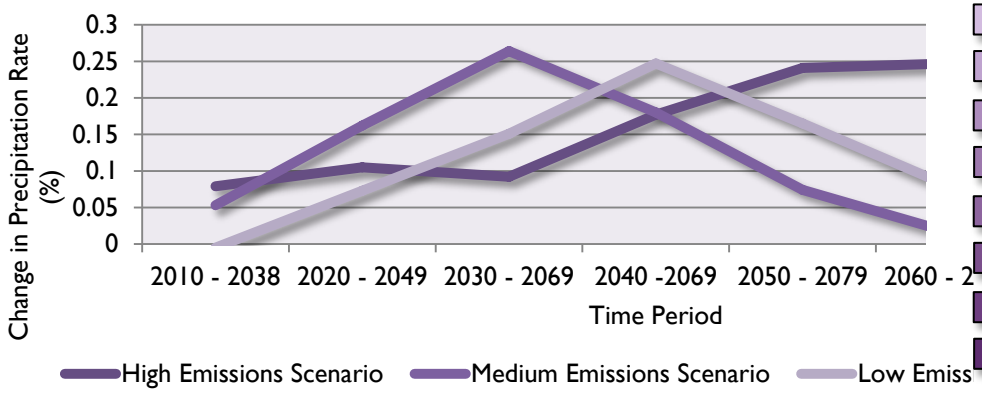


Figure 5 Central estimate for mean change in precipitation for Grid Box No. 612 (Braemar area).

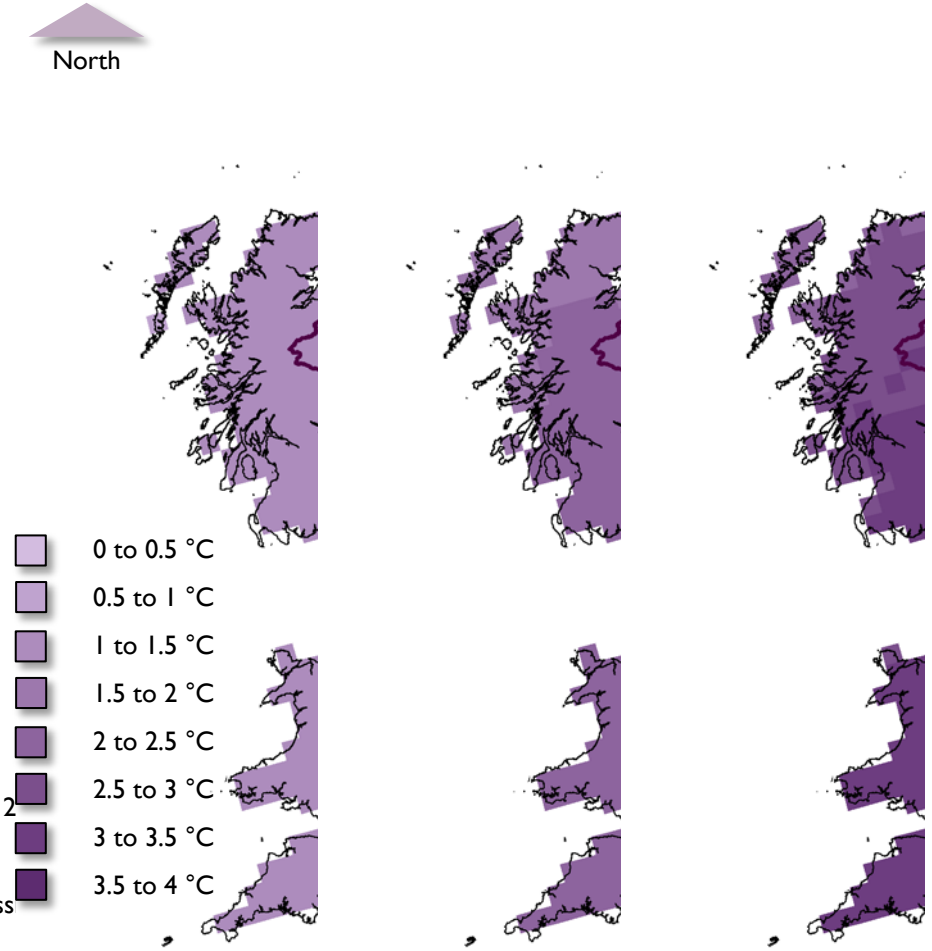


Figure 6 Mean annual temperature increase 2020s. Medium emissions scenario, central estimate.

Figure 7 Mean annual temperature increase 2040s. Medium emissions scenario, central estimate.

Figure 8 Mean annual temperature increase 2080s. Medium emissions scenario, central estimate.

It should also be noted that the use of the medium emissions scenario combined with the central probability projection represents a relatively conservative picture of the area's possible future climate. Adjusting these variables, particularly the emissions scenario, can lead to more serious projections, which at the time of writing cannot be discounted. Even with the conservative estimates provided in this summary an annual increase in mean temperature of 2.4°C would leave the National Park with some serious challenges to face.

Greenhouse Gas Emissions

The causes of climate change are clearly greater than local in scale and there is a strong global consensus that a reduction in greenhouse gas emissions is needed to avoid some significantly adverse effects. The Climate Change (Scotland) Act 2009 has introduced legislation to reduce Scotland's greenhouse gas emissions by at least 80% by 2050 against a 1990 baseline. In recent years, increasing emphasis has been placed

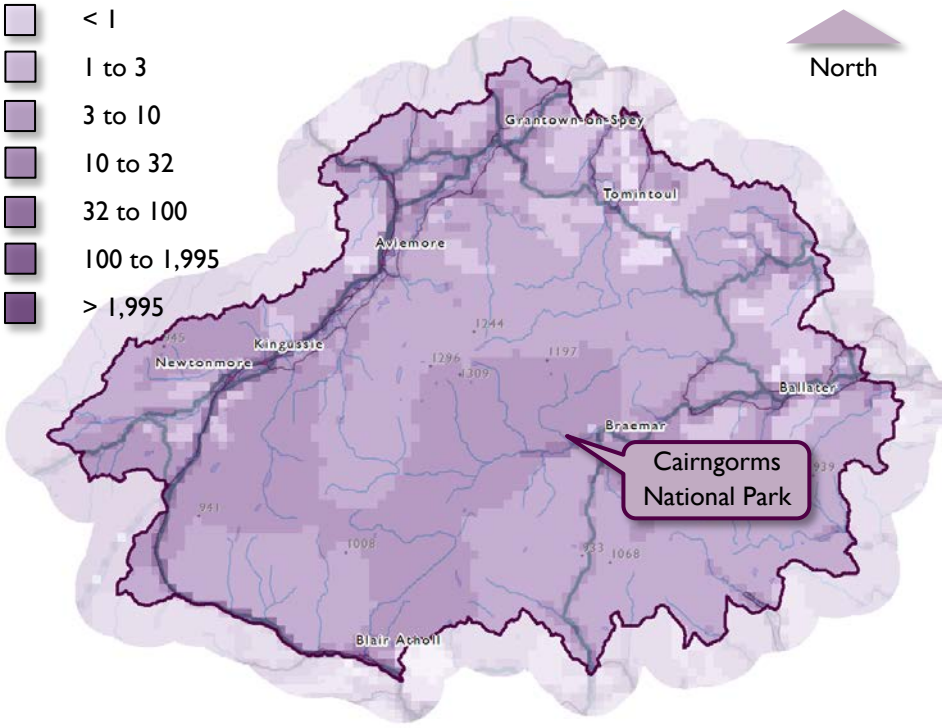


Figure 9 Carbon Dioxide (as Carbon) Emissions in tonnes for the Cairngorms National Park in 2012.

on the role of regional bodies and local government in contributing to energy efficiency improvements, and hence reductions in carbon dioxide emissions. It is clear therefore that the CFS has a role in meeting this target. Estimates of carbon dioxide emissions for Local Authority (LA) areas for 2005-2013 are available from The Department for Energy and Climate Change (DECC). Carbon dioxide emissions contribute the greatest proportion of total greenhouse gas emissions in the UK, accounting for around 82% in 2013 (Department of Energy and Climate Change, 2015). Annualised data for the UK's national parks is not available and therefore to get an approximation of the Cairngorms National Park's contribution further assumptions need to be made. Mid-year population estimates have been used as a proxy for proportionally attributing the emissions of the LAs that cover the National Park's area to the National Park itself. It is recognised that this is a blunt means of estimation, particularly in terms of commercial and transport data; indeed estimates based on estimates should always be treated with caution. However, in the absence of a detailed carbon-audit, the figures presented in

Year	Industry and Commercial (kt CO_2)	Domestic (kt CO_2)	Road Transport (kt CO_2)	Total (kt CO_2)[2]	Population (mid-year estimate)	Per Capita Emissions (t)
2005	71.7	59.5	48.5	179.8	17,264	11.0
2006	72.3	61.3	49.6	183.3	17.590	11.1
2007	72.0	60.0	50.2	182.2	17,835	10.8
2008	69.7	60.4	48.1	178.2	18,024	10.5
2009	61.6	55.7	47.4	164.6	18,061	9.5
2010	68.9	60.0	47.5	176.4	18,366	10.0
2011	63.3	52.0	46.6	161.8	18,461	9.1
2012	61.2	53.0	45.8	160.0	18,583	8.9
2013	61.1	49.1	45.9	156.7	18,420	8.7

Table , **Figure** and **Figure** offers a 'best-guess' and a generalised baseline for measurement over the Strategy period.

[2] Figures may not sum due to rounding.

Table 1 Estimated CO_2 Emissions for the Cairngorms National Park. Based on Department of Energy and Climate Change (2015).

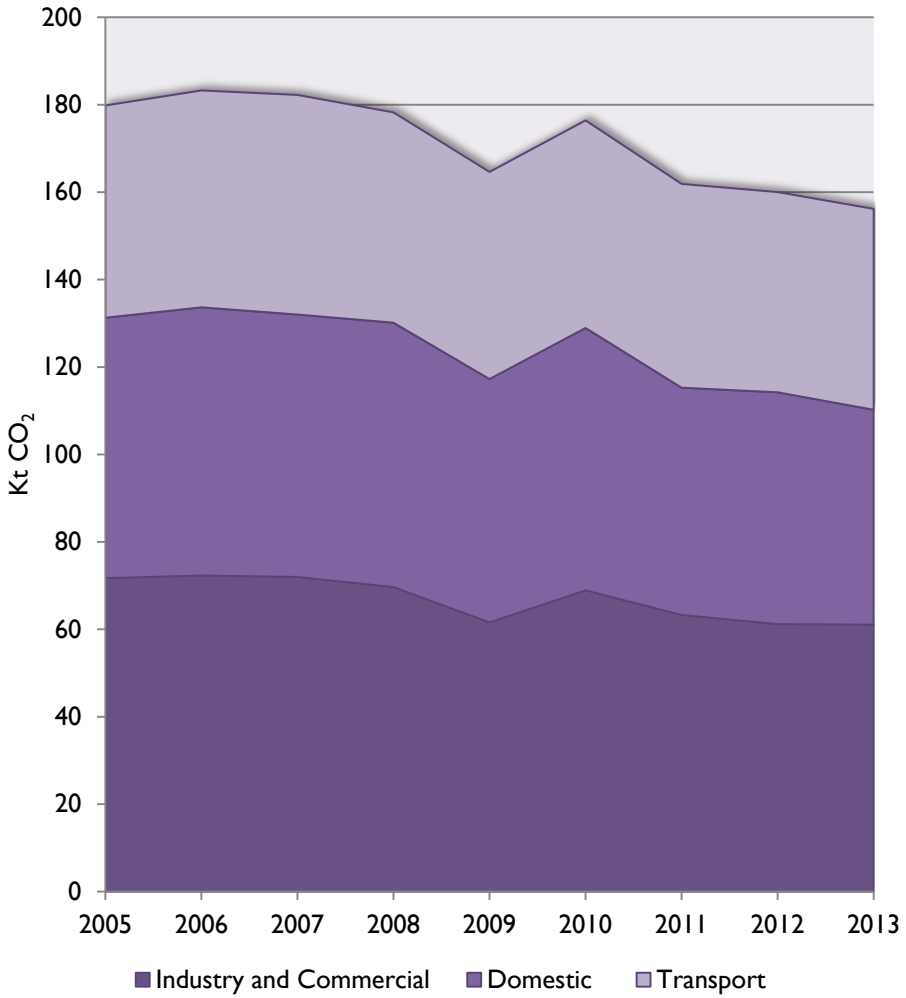


Figure 10 Estimated CO_2 Emissions for the Cairngorms National Park by sector.

Based on Department of Energy and Climate Change (2015).

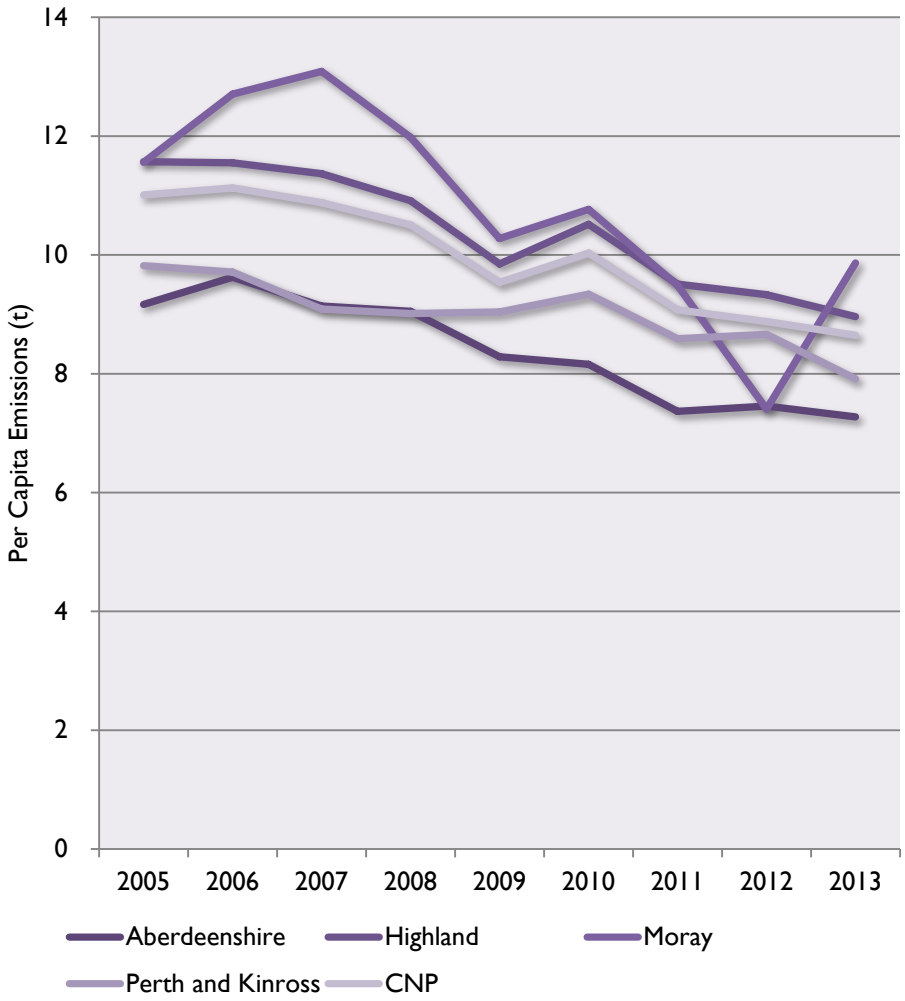


Figure 11 Estimated Per Capita CO_2 Emissions for the Cairngorms National Park by Local Authority.

Emissions from motorways, diesel railways, land use, land use change and forestry and EU ETS industrial installations are absent from the national dataset, while for the purpose of the estimates in this document, emissions for 'Large Industrial Installations' have been removed while emissions from gas, a fuel source that is only available via private supply the National Park, have been subsumed as a generalised source of emissions into the overall 'Industry and Commercial' and 'Domestic' categories of the table. The energy consumed by the comparatively high number tourists and visitors to the National Park have not been adjusted for. It should also be noted that estimating the population of the National Park is not a simple task either as data-zone[3] boundaries do not exactly match the National Park's boundary. Further information on the methodology used to identify boundaries and statistical areas used in the analysis of the Cairngorms National Park can be found in **Appendix 3.**

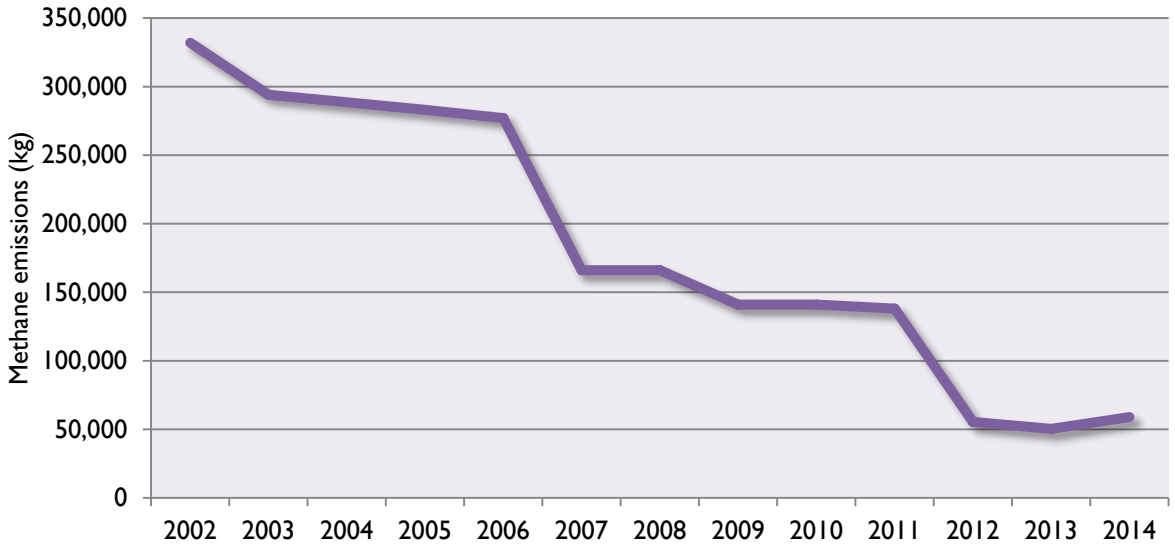


Figure **12** Estimated levels of methane released from Granish Landfill Site, Aviemore 2002-2014 (Source: http://apps.sepa.org.uk/SPRIPA/Search/ViewReturn.aspx?returnId=29355).

The most recently available data relates to 2012, and estimates that per capita emissions in the National Park are 8.9 tonnes of CO_2, which is above the Scottish average of 6.8 tonnes of CO_2 per capita. This may be attributed to the deeply rural nature of the National Park and the consequent reliance on private motor vehicles as a mode of transport. Nevertheless, there is an indication that per capita emissions are on a downward trend, which is consistent with the national situation.

This is supported by information from the only facility within the National Park that contributes towards the Scottish Pollutant Release Inventory (SPRI) - Granish Landfill site, which is operated by the Highland Council (**Figure**). Estimates of the site's methane emissions are available as far back as 2002, with data suggesting a net decrease of 273,100 kg from that year.

[3] The data zone is the key small-area statistical geography in Scotland.

Key Messages

Climate change is set to affect the Cairngorms National Park with the UK's climate projections offering a central estimate of a 2.4°C increase in mean annual temperature.

The drivers of climate change are greater than the National Park, however it is estimated that the Park is contributing towards a nationwide reduction in GHG emissions with per capita emissions falling to 7.7 tonnes in 2014.

The CFS may have a positive effect on GHG, particularly through its objective to increase woodland cover.

Topic 2: Air

> "*In order to protect human health and the environment as a whole, it is particularly important to combat emissions of pollutants at source...*"
>
> Ambient air quality and cleaner air for Europe Directive (2008/50/EC).

Air pollution results from the introduction of a range of substances into the atmosphere from a wide variety of sources, including industry, transport and power generation. Even domestic activities such as driving, heating and cooking contribute, as do natural sources like sea salt, wildfires, volcanic activity, soil erosion and farming (Scottish Government, 2015).

Poor air quality can have both short term and long term effects on health. In general, healthy people may not suffer from any serious ill effects; however people with pre-existing health conditions (e.g. heart disease, lung conditions and asthma) may be affected by day to day changes in air pollution levels. It is estimated that in 2010, particulate matter in the air (PM_{10} and $PM_{2.5}$) could have caused the deaths of 2,094 people in Scotland.

Air pollution can also damage the wider environment, causing the acidification of soils and water, damaging plant and animal life in forests, lakes and rivers. It can also add nutrients to soil, which can affect biodiversity. Air pollution can also damage the fabric of buildings and historic monuments (Scottish Government, 2014).

The air quality objectives for Scotland are set out in the Air Quality (Scotland) Regulations 2000 and its 2002 Amendment. The main pollutants of concern are:

- Nitrogen oxides (NO_x);
- Particulate matter (PM_{10} and $PM_{2.5}$);
- Sulphur dioxide (SO_2);
- Non-methane volatile organic compounds (NMVOCs);
- Ground-level ozone (O_3) and
- Ammonia (NH_3)

Scotland's air quality is generally better now than it has been at any time since before the Industrial Revolution, with increasingly strict controls over industrial emissions, tighter fuel and emission standards for road vehicles and the control of smoke from domestic premises yielding positive results. Between 1990 and 2012 significant reductions were seen in the emissions of particulates (-59%), nitrogen oxides (-65%) and sulphur dioxide (-79%) (Sailsbury *et al.* 2014).

Human exposure to air pollution is now largely associated with transport emissions. The effects of this pollution are not confined to Scotland's cities but occur in many of the country's built areas. Where air quality objectives are not being met, Local Authorities have a duty under section 83(10 of the Environment Act 1995 to designate Air Quality Management Areas (AQMAs), where plans

must be implemented to improve air quality. All air quality objectives are currently being met within the Cairngorms National Park and nearest AQMAs are located in Aberdeen and Inverness. The A9 Dualling Strategy (Transport Scotland, 2015), is predicted to result in a reduction in ambient roadside carbon, NO_x and particulate levels through resultant improved traffic flows (Transport Scotland, 2013).

It is therefore highly unlikely that the CFS will cause air quality objectives to be exceeded and it could have a localised positive effect where tree planting is encouraged around towns and roads in conjunction with Local Development Plan objectives and through engagement with the A9 dualling process.

therefore no AQMAs exist within its boundary (the

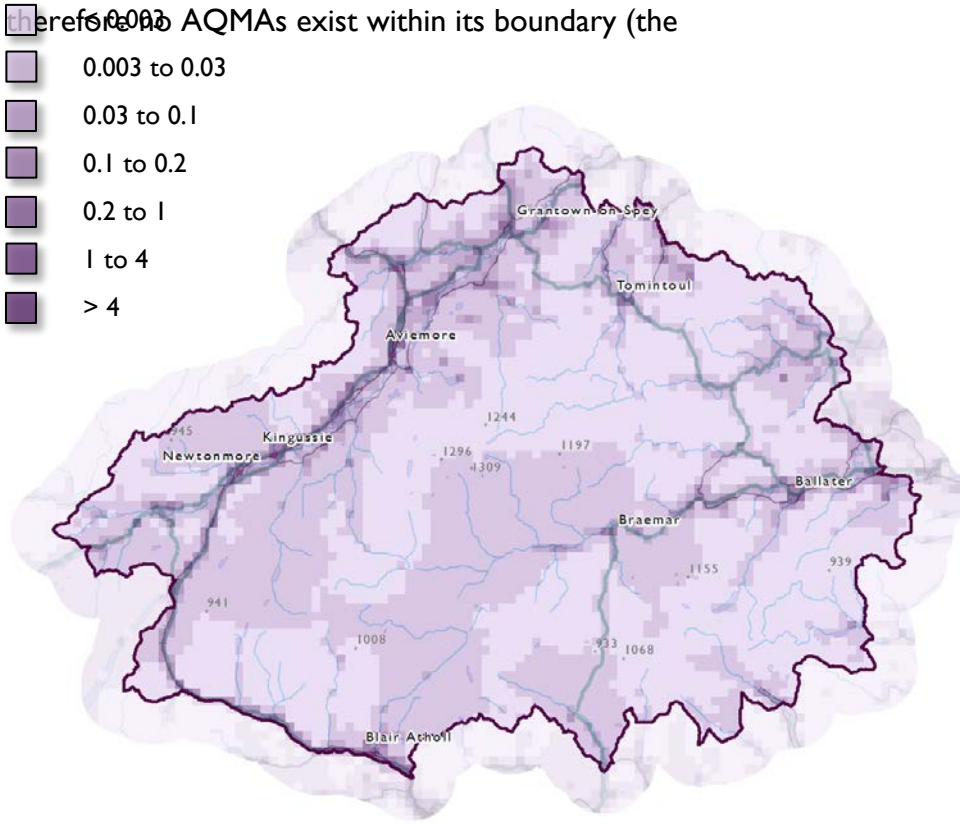


Figure 14 Emissions of PM_{10} in tonnes in the Cairngorms Nation

Scale: 1:700,000

Key Messages

Air pollution is relatively low within the Cairngorms National Park, with no AQMAs within its boundary. However, there are localised areas along the main transport corridors where pollutants related to vehicle use are high enough to generate concern, strategic planting of shelterbelt woodland can provide a physical barrier to air pollutants.

The CFS may have an influence over air quality both on its own and in combination with other PPS such as the A9 Dualling Strategy.

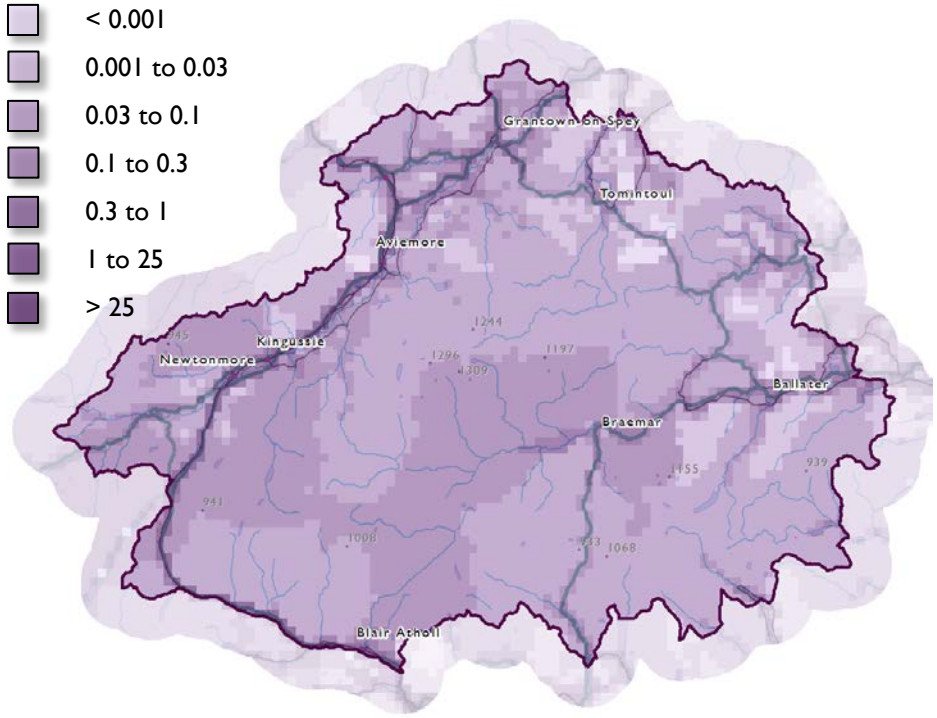
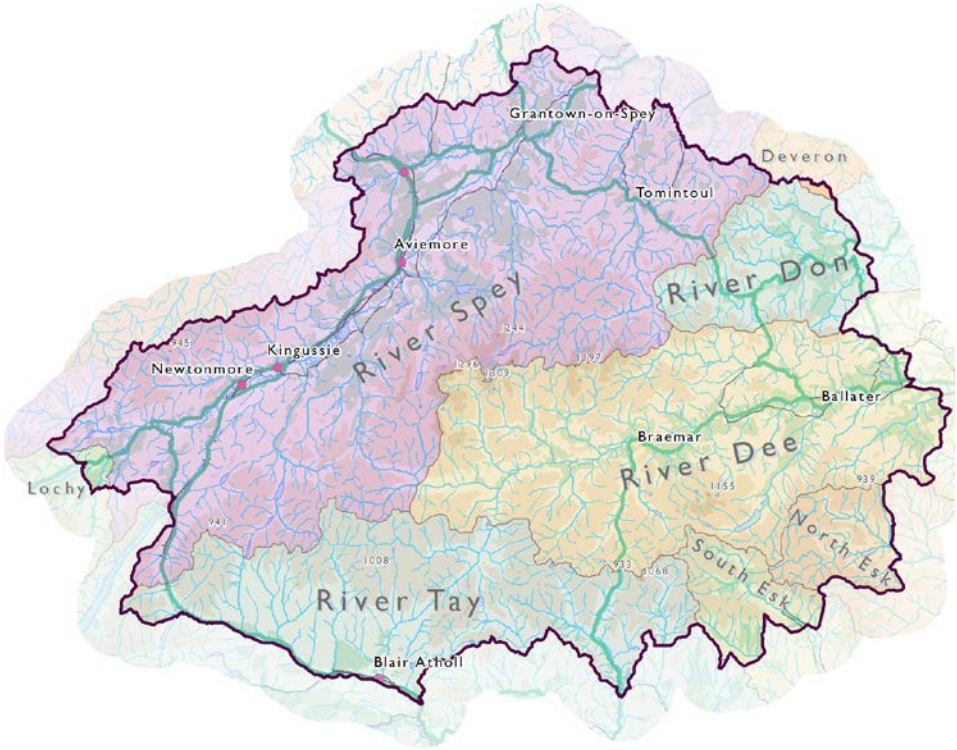


Figure 15 Emissions of Nitrogen Oxides (NO_x) as NO_2 in tonnes in the Cairngorms National Park in 2012.

Topic 3: Water

Figure). Many of the rivers and their tributaries as well as lochs and wetlands are designated as Natura sites and Sites of Special Scientific Interest (SSSIs). The rivers in particular provide water for society in the National Park, and for people outside the Park as they flow



The Cairngorms National Park encompasses the headwaters of three of Scotland's major rivers as well as many smaller ones (

downstream towards the sea. Three of the National Park's rivers are subject to Catchment Management Strategies, the Dee, the Esk and the Spey. These Strategies aim to protect water quality, direct the use of the rivers as resources, protect against flooding, enhance biodiversity, and promote access and economic development.

Figure 16 River catchment areas within the Cairngorms National Park.

Water Quality

Pollution leading to the deterioration of water quality can originate from one of two sources, point and diffuse.

Point source discharge means a release of effluent or other matter to the water environment or land, via a pipe or outlet. For example, this includes sewage and trade effluent; surface water discharges from urban areas; and abandoned mine discharges.

Diffuse pollution is the release of potential pollutants from a range of activities that, individually, may have no effect on the water environment, but, at the scale of a catchment, can have a significant effect. Activities associated with diffuse pollution are varied and include run-off from roads, houses, commercial areas, farmland, forestry activities and community and amenity green spaces; seepage into groundwater from developed landscapes of all kinds; and yard run-off from industrial activities.

Government regulation has been extremely successful in reducing instances of point source pollution and therefore diffuse pollution is now of greatest concern. Diffuse sources of water pollution can have a significant effect of biodiversity and human health. The effects include:

- Groundwater and surface water contamination and the subsequent loss, or need for treatment of drinking water resources;
- Nutrient enrichment and eutrophication of water bodies;
- Oxygen depletion of water bodies;
- Toxicity to plant and animal life, including endocrine disruption in fish; and
- Smothering of freshwater pearl mussel beds and fish spawning gravels (Dee Catchment Partnership, 2007).

Of particular significance is the effect of water pollution on freshwater pearl mussel populations, as good water quality is essential for the completion of their life cycle (Young, 2005). Freshwater pearl mussel is one of the species on the Nature Action Strategy List (Cairngorms National Park Authority, 2013) and is one of the qualifying features for a number of the National Park's SACs, including the River Spey and River Dee SACs and is a candidate QI for the River Tay SAC. Further information may be found under **Topic 6: Biodiversity, Fauna and Flora** .

The European Union Water Framework Directive (2000/60/EC) (WFD), adopted in 2000, is the operational tool that sets out the objectives for water protection in Scotland. The WFD sets out a number of objectives in respect of which the quality of water is protected. The key ones at European level are:

- General protection of the aquatic ecology;
- Specific protection of unique and valuable habitats;
- Protection of drinking water resources; and
- Protection of bathing water.

All these objectives must be integrated for each river basin. It is clear that the last three - special habitats, drinking water areas and bathing water - apply only to specific bodies of water (those supporting special wetlands; those identified for drinking water abstraction;

those generally used as bathing areas). In contrast, ecological protection should apply to all waters: the central requirement of the WFD is that the environment be protected to a high level in its entirety (European Commission, 2014).

SEPA are the responsible authority for monitoring water quality in Scotland to the requirements set out by the WFD. The Directive requires all water features in a category (i.e. rivers, lochs, transitional waters, coastal waters and groundwater) above a certain size threshold to be defined as water bodies.

The water quality of surface water bodies within the CNP are all classified as passing for water quality as based on SEPA data. There are concerns that thresholds for nutrients including phosphate and ammonia are too high to sustain healthy populations of Freshwater Pearl Mussel. Some of the waterbodies within the CNP are not at good status mainly as a result of barriers to fish passage and abstraction.

River catchments provide a transfer route for Invasive Non-Native Species for example mink and water crowfoot (*Ranunculus* sp.) on the River Spey. The control of these is discussed further in **Topic 6: Biodiversity, Fauna and Flora**

Water Quantity

In order to provide information for the management of water resources, SEPA monitor water levels at 20 sites within the Cairngorms National Park, as well as at a number of locations just outside the Park's boundary. Water levels are converted to flow at most river gauging stations. The information gathered may inform the SEA, since trends may be used as an indicator of climate change or as an identifier of potential risks, such as flooding.

The Data from monitoring stations on the River Spey and Dee show a general trend for higher annual maximums of peak flows. The causes of this are uncertain; however, it highlights the importance of taking into account the potential for an increase in the number and severity of flood events over the lifetime of the CFS and beyond.

Flooding

All of the National Park's rivers and watercourses have the potential to flood to some degree (**Figure**). Most concern is generated along the National Park's main straths and glens, as when the rivers and tributaries that flow along these, namely the Spey, Dee and Don, break their banks, they often result in economic, and occasionally human, cost. Small watercourses also represent a risk but are often poorly understood with respect to the severity of the flood hazard that can be generated on a catchment scale. Furthermore, in some areas surface water flooding, which can arise for a number of reasons, is a significant risk.

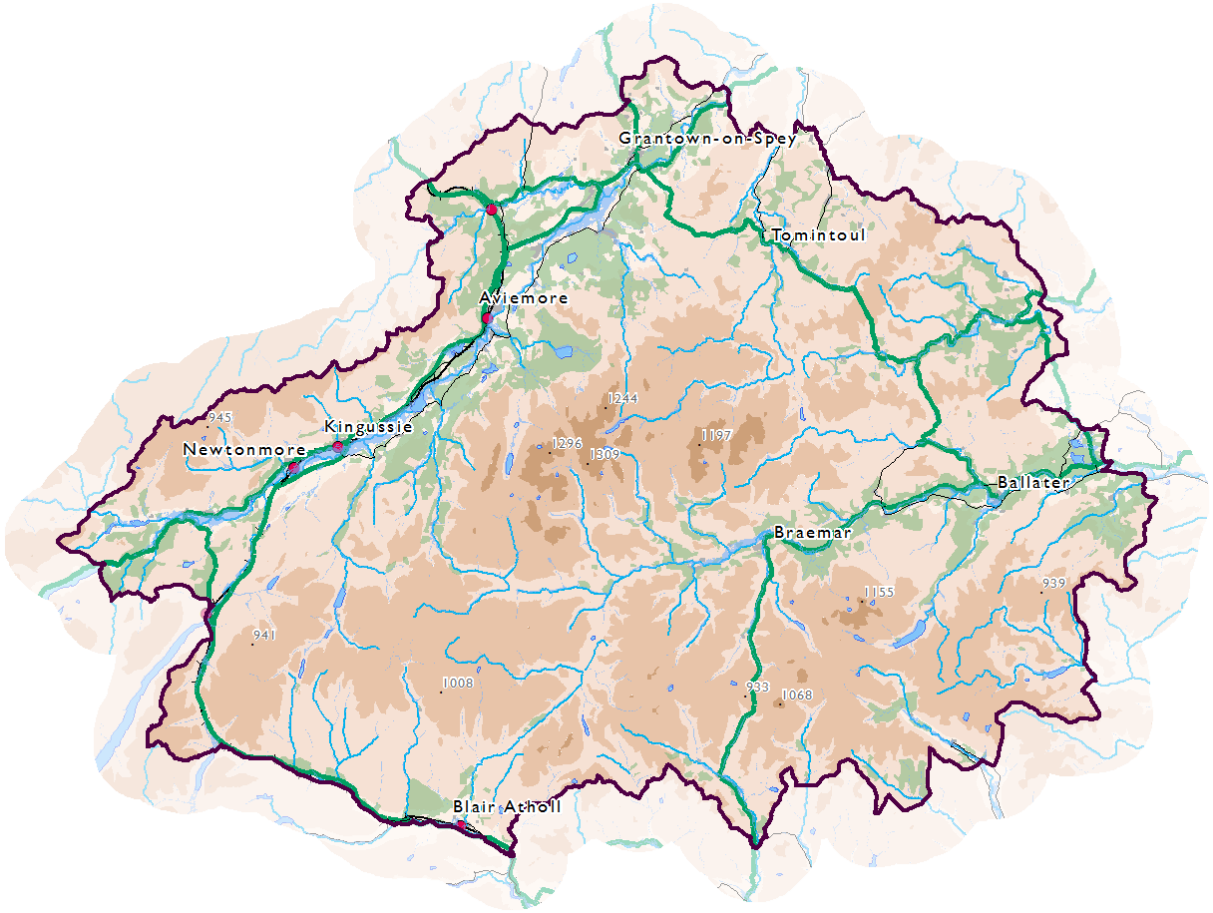


Figure17 Indicative river flooding extent (medium probability 1 in 200 years) in Cairngorms National Park.

River Spey

The River Spey (**Figure 4**) rises in the high ground of the Monadhliath and Cairngorm Mountain ranges and flows in a northeasterly direction through narrow straths and scenic river valleys before discharging into the Moray Firth beyond the fertile farmlands of Morayshire. The upper part of the catchment is characterised by its mountainous areas, the highest point being the summit of Ben Macdui at 1,309 metres above sea level.

The River Spey is the seventh largest river in Britain, with a catchment area of over 3,000 km^2, and a stream network length of about 36,500 km, of which the main river comprises 157 km (Spey Catchment Steering Group, 2003).

There is a long history of flooding within the Spey catchment area, with a notable event, known as the Great Muckle Spate, destroying several bridges in 1829. The River Spey and its tributaries continue to flood regularly, with heavy rains and melting snows increasing the volumes of water in

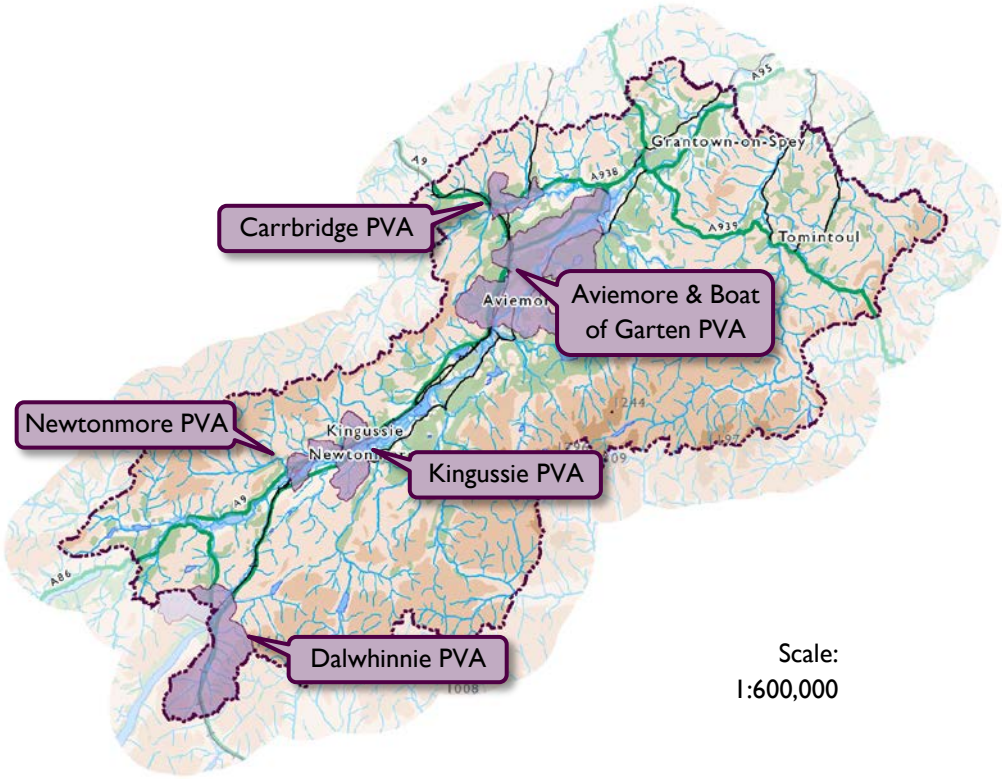


Figure 4 River Spey PVAs in the River Spey catchment area within the Cairngorms National Park and indicative river flooding extent (medium probability 1 in 200 years).

the catchment. These floods have damaged properties in Newtonmore, Aviemore and Carrbridge on a number of occasions. Most recently in 2014, Gynack Burn broke its banks in Kingussie, damaging local buildings and infrastructure (Scottish Environment Protection Agency, 2015).

Flood management practices are being undertaken at a number of locations. The Spey Catchment Initiative has carried out natural flood management / river restoration works on a tributary upstream of the River Dulnain (Spey Catchment Initiative, 2013) and on the Allt Mharcaidh (Spey Catchment Initiative, 2015). Due to the potential risk caused by flooding within the catchment area, five Potentially Vulnerable Areas (PVAs) have been identified within the National Park (**Figure 4**), at:

- Carrbridge (PVA 05/10);
- Aviemore and Boat of Garten (PVA 05/11);
- Kingussie (PVA 05/12);
- Newtonmore (PVA 05/13); and
- Dalwhinnie (PVA 05/14).

The estimated total average annual cost of damage in these areas is £492,000 . Around £335,000 (68%) of this damage is caused by river flooding (Scottish Environment Protection Agency, 2015).

SEPA have identified a number of actions for managing flood risk in these areas, which were consulted on in 2015. Natural Flood Management will be considered as an option under the Highland Council Flood Study for Kingussie PVA.

River Dee

The River Dee (**Figure**) rises in the Cairngorm Mountains east of Braemar on the semi-arctic Braeriach-Cairn Toul plateau. For the majority of its course, the river flows eastwards through a broadening valley, which becomes much gentler in relief as it leaves the National Park. Within the National Park, the river is fed by a number of important tributaries, namely the Lui, Clunie, Gairn, Muick and Tanar, the latter's confluence located just outwith the National Park Boundary (Dee Catchment Partnership, 2007).

The river is considered to be the best example of a natural highland river in Scotland (Maitland, 1985). The notable characteristics of the river include its great altitudinal range, its unique succession of plant communities, and its seep profile compared to other large British rivers (Dee Catchment Partnership, 2007).

Like the Spey, the Dee suffers from flooding related to heavy rain and melting snows. Major floods have been recorded in 1769,

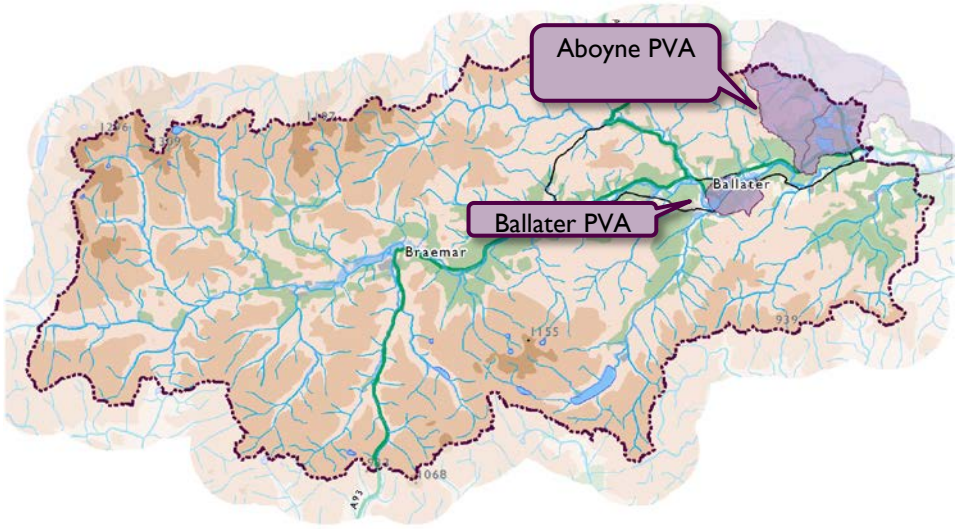


Figure **19** River Dee PVAs in the River Dee catchment area within the Cairngorms National Park and indicative river flooding extent (medium probability 1 in 200 years).

Scale: 1:400,000

1829 (the Great Muckle Spate), 1920 and 1956 (the Cairngorm Flood) (Dee Catchment Partnership, 2007). In 2008 surface run-off entered the Netherly Guesthouse in Ballater and in 2014 the town's caravan park and a number of roads were closed due to flooding (Scottish Environment Protection Agency, 2015). More recently, in December 2015 / January 2016, the Dee experienced widespread flooding, which caused significant damage to property and transport infrastructure.

The Dee catchment contains two PVAs that fall within or across the National Park boundary namely:

- Aboyne (PVA 06/20); and
- Ballater (PVA 06/22).

The former is only partly within the boundary, with the majority of the population and the associated risk located outwith. As one of the National Park's main settlements, the PVA around Ballater therefore offers most concern. The estimated average annual cost of damage here is £230,000, 99% of which is

associated with river flooding. The majority of estimated damages are due to flooding to non-residential properties (80%), although more significantly, the fire station is located in an area which has a medium likelihood of flooding (Scottish Environment Protection Agency, 2015).

River Don

Rising in the in the peat flat beneath Druim na Feithe, and in the shadow of Glen Avon, the River Don flows 135km east to the sea in Aberdeen. It's Scotland's 6th largest river, draining a catchment of around 1,300km^2.

The Don catchment contains one PVA that falls across the National Park boundary, namely Heugh-Head (PVA 06/14) (**Figure**). There was a surface water flood in August 2006 affecting Strathdon, Waterside and Bellabeg when water ponded in low points of the road, with heavy rainfall and steep sloping fields to the south resulting in significant amounts of flood water. Most of the PVA's estimated annual average damages, which equate to £95,000, are associated with river flooding (92%) These damages mostly affect residential properties (60%) (Scottish Environment Protection Agency, 2015).

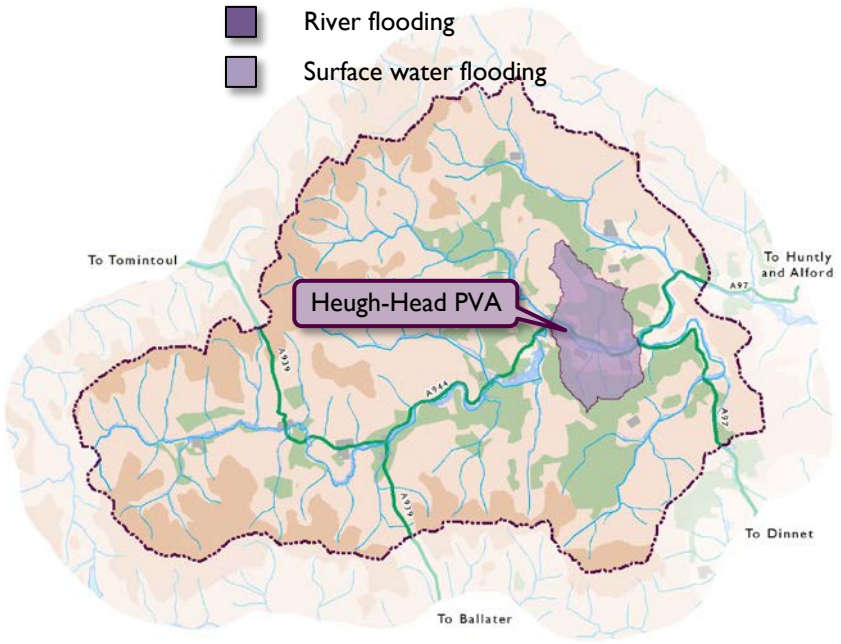


Figure **20** Heugh-Head PVA (PVA 06/14) and indicative river flooding extent (medium probability 1 in 200 years) in the River Don catchment area within the Cairngorms National Park.

Scale: 1:200,000

The River Tay has the largest catchment area and is the longest river in Scotland, with many of its headwaters lying within the Cairngorms National Park (**Figure**). It covers an area of 5,088km^2 and is around 190km in length. More water flows through the River Tay than any other river in the United Kingdom. The main tributaries include the River Garry, River Tummel, River Lyon, River Braan, River Isla and River Almond. The largest lochs in the River Tay catchment include Loch Ericht, Loch Rannoch and Loch Tay (Scottish Environmental Protection Agency, 2015).

The Tay catchment contains one PVA that falls across the National Park boundary, namely Blair Atholl (PVA 08/01). A number of river floods have been recorded in this area. These include:

- 13 June 1931: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also affected.
- July 1916: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also flooded.

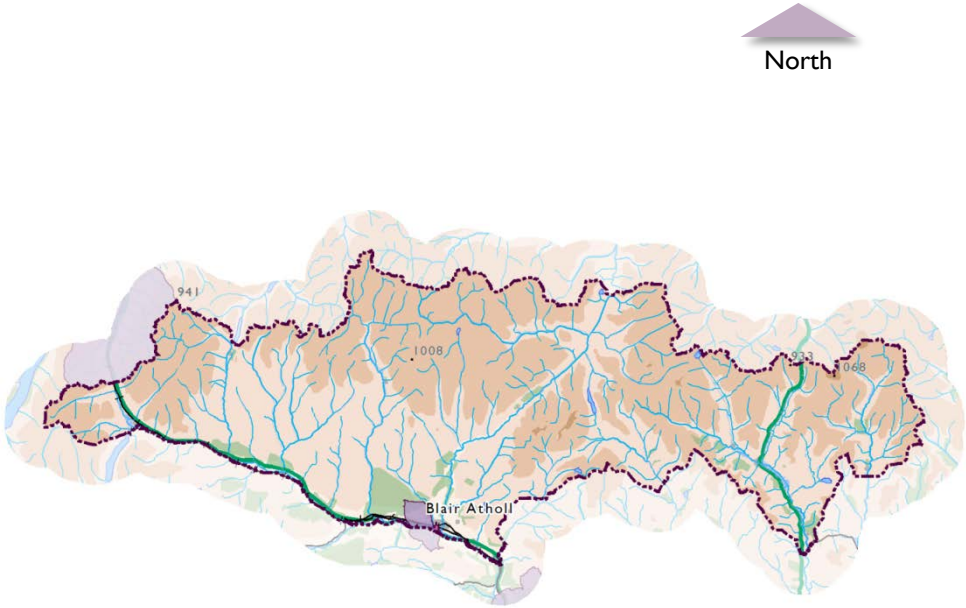


Figure 21 River Tay PVAs in the River Tay catchment area within the Cairngorms National Park and indicative river flooding extent (medium probability 1 in 200 years).

Scale: 1:450,000

Blair Atholl continues to be at risk of flooding from the Garry Burn and from surface water..

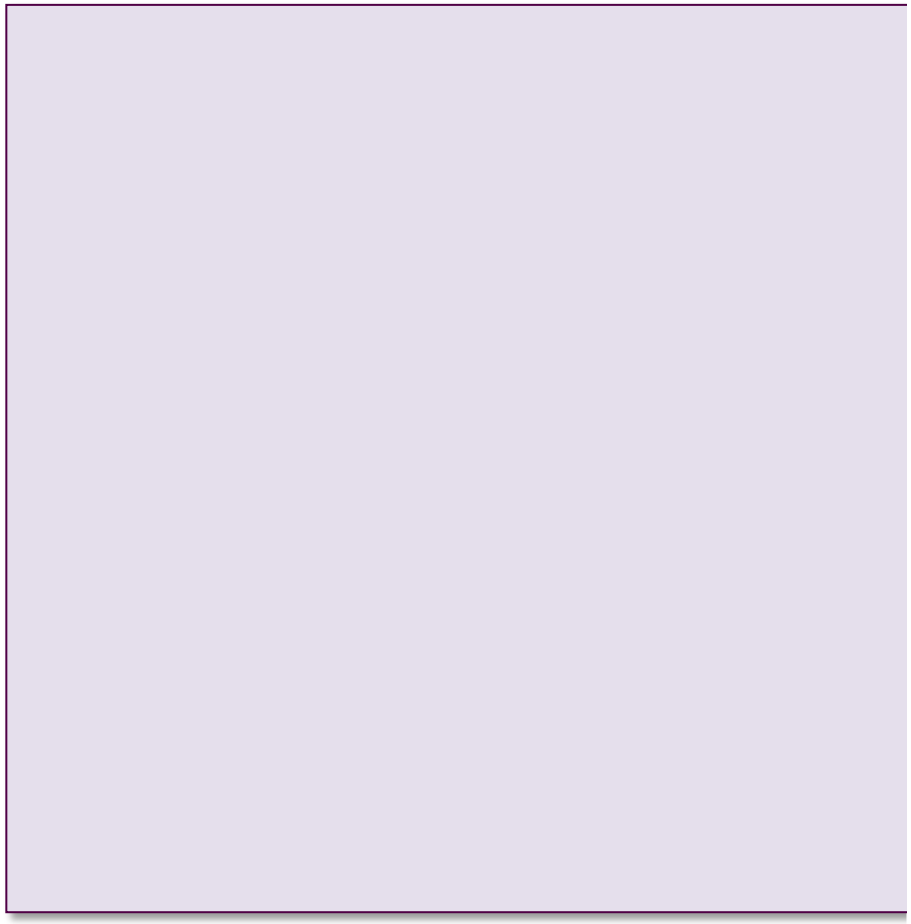
Currently there is relatively low confidence in SEPA's river flood hazard maps due to limitations arising from the data used and techniques applied in the national modelling. The number of properties at risk of flooding in the Blair Atholl area is likely to be underestimated (Scottish Environmental Protection Agency, 2015).

Woodland role in Natural Flood Management

Well sited and well-managed floodplain and riparian woodland can contribute to a host of positive outcomes: provision of increased wildlife habitat and canopy shade; shelter and shade for livestock to prevent damage to crops and soil erosion. Strategically placed woodland can intercept diffuse pollution from pollutant laden run-off. The effects of woodland on large scale flood events re unclear but they can have a positive effect on localised flooding (catchments under 100km). Trees have the potential to manage the sources and pathways of floodwater by: improving the infiltration rates of woodland soils and through increased evapotranspiration rates. Carroll et al, (2004) found that infiltration rates were 60 times higher when native cross slope woodlands were present compared to heavily grazed pasture, 90% improvement in soil infiltration rates occurred within two years of stock removal and planting. Woodlands also act by physically slowing down the flow (Forestry Commission, 2011)

Carroll, Z.L., Bird, S.B., Emmett, B.A., Reynolds, B., & Sinclair, F.L (2004) Investigating the impacts of tree shelterbelts on agricultural soils, in"Landscape ecology of trees and forests. International Association for Landscape Ecology.

Forestry Commission (2011) Forest and water: UK Forestry Standard Guidelines. Edinburgh.



Topic 4: Soil

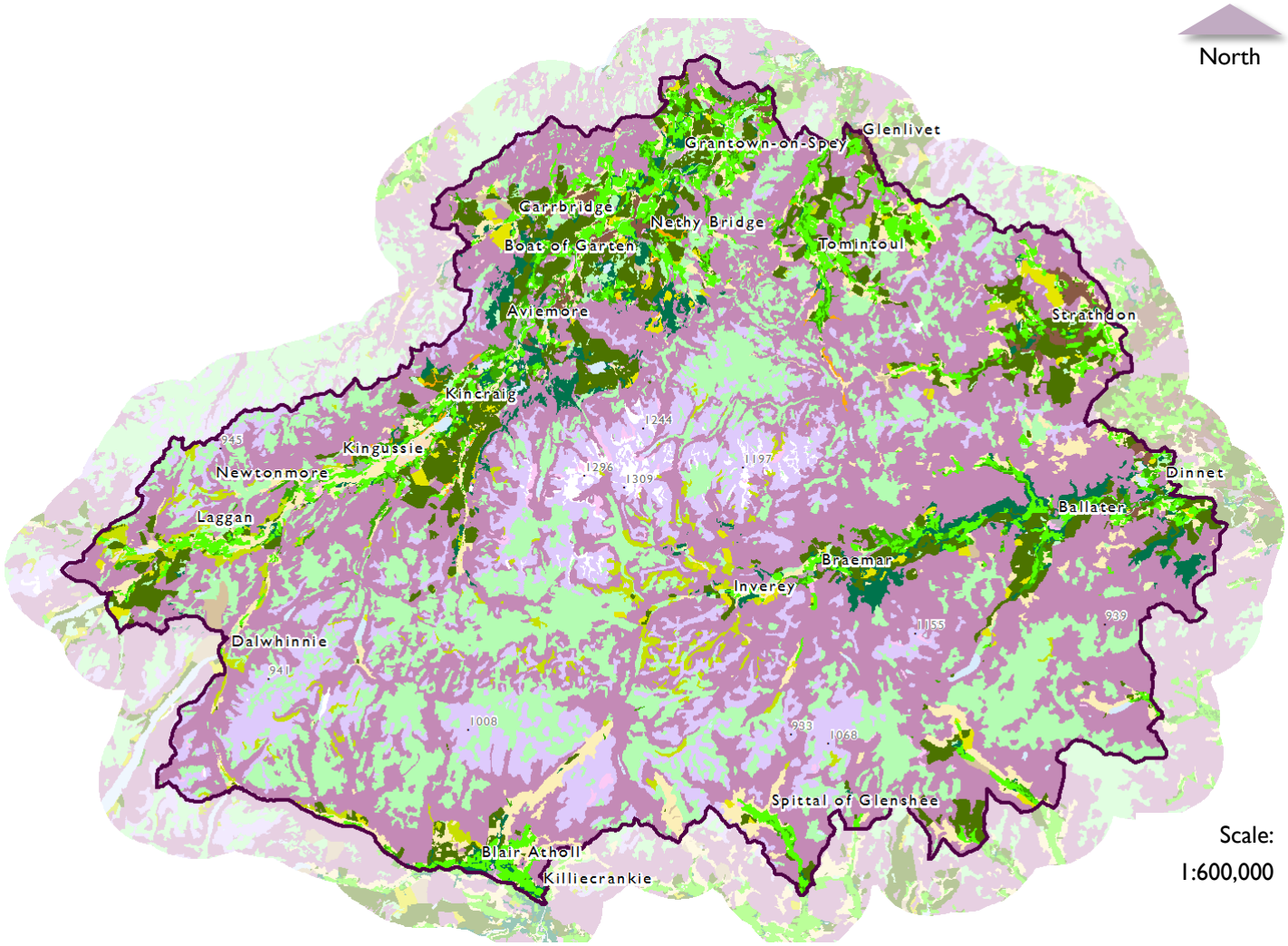
> "*Soil is a resource of common interest… and failure to protect it will undermine sustainability and long term competitiveness in Europe.*"
>
> Commission of the European Communities (2006).

Soils cover most of the natural world, forming the foundation of all terrestrial ecosystems and services. They support key processes in biomass production and mass exchange with atmospheric and hydrological systems. Nearly all of the food, fuel and fibres used by humans are produced in soil. Soil is also essential for water and ecosystem health. It is second only to the oceans as a carbon sink, with an important role in the potential slowing of carbon change. Soil functions depend on a multitude of soil organisms, which makes soil an important part of our biodiversity (Joint Research Centre, 2012).

Although soils are a continually evolving, living and dynamic medium responding to external pressures and management, some activities such as development or pollution can mean their recovery or reformation cannot take place within human timescales. This means soils are a finite and essentially non-renewable resource (Scottish Government, 2009).

Woodland Soil Ecology

Ancient woodlands have a rich tapestry of soil communities and structures, supporting a diverse microbial and botanical flora, disruption of ancient woodland soil structures through harvesting practices and woodland loss can sever these connections, leading to further tree, botanical and microbial loss and the organisms on which they depend. A key advantage of Plantation on Ancient Woodland Sites restoration over secondary woodland creation is that the land remains wooded and the soils relatively undisturbed. This retains some of the soil communities, networks and interactions that would be lost if the land was, for example, cleared then ploughed for agricultural use. So the essential foundations remain intact to enable the restoration of healthy and diverse ancient woodland ecosystems. One problem for PAWS soils can be their acidification due to the build-up of dropped conifer needles. Surface soil acidification is associated with a reduction in the species richness and abundance of vascular plants.



- Arable
- Recently ploughed
- Smooth grassland
- Coarse grassland
- Improved grassland
- Bracken
- Heather moor
- Blanket bog and peatlands
- Montane vegetation
- Cliffs
- Low scrub
- Felled woodland
- Ripping
- Young Strategytation
- Broadleaved woodland
- Coniferous woodland
- Mixed woodland
- Wetland
- Water
- Recreational land
- Urban
- Other (e.g. snow cover)

Figure 22 Landuse Classifications in the Cairngorms National Park (Soil Survey of Scotland Staff, 1981).

Organic Matter

Soil organic matter is a universal constituent of soils and plays a vital role in contributing to a range of soil functions. Organic carbon is the dominant component of soil organic matter (around 50%), so management of soil has important wider consequences in the context of greenhouse gas emissions and climate change. Soil organic matter also contains a wide range of nutrients (e.g. nitrogen, phosphorus) and trace elements that are essential for plant growth and health. The presence of soil organic matter is a critical indicator of soil quality and is required to deliver many of the vital functions of soil including its ability to provide nutrients, ameliorate the inputs of wastes and pollutants, contribute to the formation of good physical conditions, improve water storage and provide a habitat for microbial populations (Rees *et al.* 2011).

The soils of the Cairngorms National Park are particularly rich in soil organic matter because the cool, moist climate encourages the retention of decomposed organic materials, with peatlands containing the largest quantities of soil organic matter (**Figure**) These soils are important global reserves of soil carbon.

The organic matter content of soils is at risk from a range of pressures, with land use change and climate change being of particular importance. The pressures affect the incorporation, cycling and breakdown of organic matter in the soil through alteration of soil conditions populations (Rees *et al.* 2011). The major pathway of loss of organic matter from soils is by carbon dioxide (CO_2) emission to the atmosphere via soil respiration, but other greenhouse gases can also be emitted as a result of soil organic matter decomposition, for example methane (CH_4) and nitrous oxide (N_2O) (Scottish Executive, 2007). In addition, carbon compounds can be released from soil into water, for example dissolved organic carbon and particulate organic carbon (Buckingham *et al.* 2008; Dinsmore *et al.* 2010). Other processes can also influence the amount of organic matter loss, such as soil erosion (Bilotta et al. 2007). Although most CO_2 is returned to soils as a consequence of the photosynthetic activity of plants, the net exchange (the difference between gains and losses) of carbon from land surfaces may still be large (*Rees et al.* 2011).

Climate is important in determining the equilibrium soil organic matter content. Temperature and rainfall influence both the input of organic matter via photosynthesis (e.g. litter and root inputs), and its subsequent decomposition through microbial activity, with resultant release of greenhouse gases and dissolved organic carbon, along with nutrients and trace elements. Thus any change in climate, for example increased rainfall and/ or increased temperature, is likely to change the rate at which organic matter is lost or accumulated in Scottish soils (Rees *et al.* 2011).

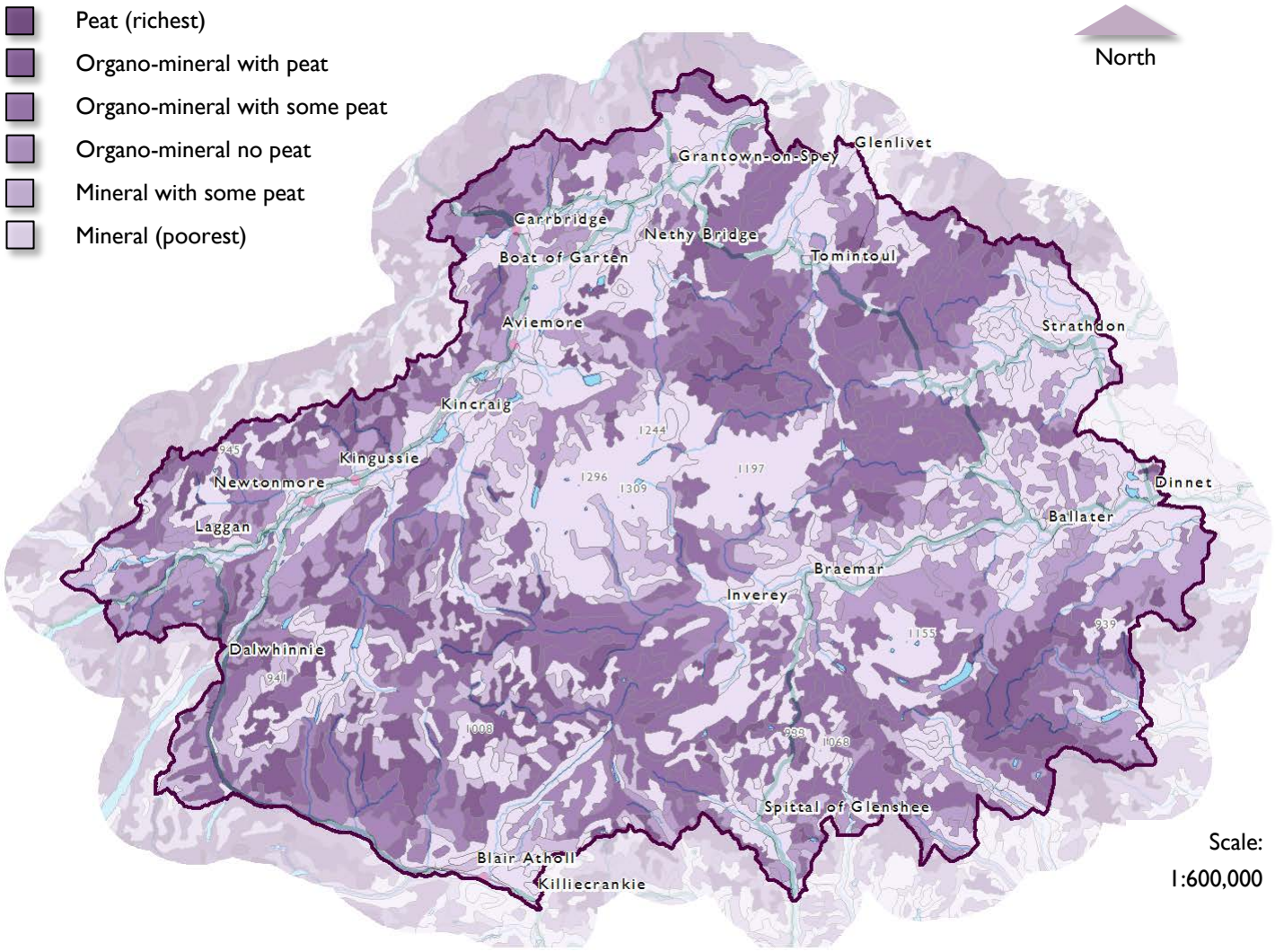


Figure 23 Carbon Richness of Soil (Scottish Natural Heritage, 2012).

There is a particular concern regarding the sensitivity of soil organic matter to changes in climate. Projected climate change in the Cairngorms National Park, with warmer and drier summers and wetter winters, threatens to increase losses of soil organic matter (see **Topic 1: Climatic Factors**). Another concern is that extreme weather events such as heavy rainfall could contribute to significant losses of organic matter through soil erosion (Rees *et al.* 2011).

Issues caused by climate change may be compounded by unsustainable land use activities such as those related to agriculture, forestry practices, recreation / game management, peat exploitation and development.

The consequences of organic soil loss are potentially serious since it provides a number of important ecosystem services, such as:

- Providing the basis for food and biomass production
- Controlling and regulating environmental interactions
- Storing carbon and maintaining the balance of gases in the air
- Providing valued habitats and sustaining biodiversity
- Preserving cultural and archaeological heritage; and
- Providing raw materials.

Contamination

Soil contamination can come in many forms and from many sources. However, not all are of concern within the Cairngorms National Park. While contamination from metals, organic chemicals, radioactive substances and pathogens may exist within National Park boundary, they are not of an order that is likely to cause significant harm to the environment and can therefore be scoped out of the assessment.

Because of its potential effects on habitat and biodiversity, soil acidification is however of significance to the National Park. Typically, this pollution originates from gaseous emissions of sulphur dioxide and oxides of nitrogen, which are dissolved in rainwater to form sulphuric and nitric acids which subsequently are deposited on soil, causing soil acidification. Excess nitrogen deposition can also lead to soil eutrophication.

Acidification and eutrophication impacts are often greatest in upland areas as a result of high rainfall and are exacerbated by predominantly poorly-buffered and nutrient-poor soils and the greater sensitivity of locally adapted biodiversity to a change in soil conditions. However, lowland soils, especially those associated with ecosystems of high conservation value, may also be affected by acidification and eutrophication. In addition, fertiliser application in excess of crop nutrient requirements can result in acidification and eutrophication of agricultural and forestry soils (Cundill *et al.* 2011).

Acidification can impact on soil nutrient cycling, causing critical load exceedance and a reduction in the ability of soils to filter contaminants. Further nitrogen additions are also less readily retained in ecosystems where the critical load for nitrogen is exceeded, resulting in 'nitrogen' saturation' (Aber *et al.* 1989; Agren & Bosatta, 1988).

Contaminates may therefore more readily enter water bodies, the acidification of which has been linked with soil acidification in Scotland (Helliwell *et al*. 2001). The impacts of soil acidification on both the biological and chemical quality of water has been observed in the Cairngorms (Soulsby *et al.* 1997). The soil stabilisation benefit of trees may prove useful in the remediation of sites with contaminated soils. If
trees can be planted to reduce wind erosion, leaching and surface water runoff they may help to stabilise the soil in contaminated sites. This reduces the movement of soil pollutants from the site into waterways and other areas

Soil Erosion

Soil erosion by water or wind is a natural process where soil particles become detached and are transported within the landscape. Features of soil erosion may be found throughout the Cairngorms National Park (**Figure**). For example, landslides and debris flows are a relatively common occurrence on many of the National Park's hill slopes, which have been over-steepened by glaciation (Ballantyne, 1986, 2004). The rate of soil loss via erosion and the incidence of landslides can be increased by removing the vegetation cover that protects the soil (e.g. deforestation) or by engineering works. Tillage erosion also leads to the redistribution of soil downslope (Lilly *et al*. 2011).

Landslides (in the form of debris flows) have occurred in clusters over the last 7,000 years which may be related to climatic factors such as the frequency of extreme rainfall events for example, although deforestation is also likely to be an important factor. Debris flows in the Lairig Ghru appear to occur with a return period of around 20 years, with each episode of debris flow activity thought to be linked to intense rain storms (Baird & Lewis, 1957; Innes, 1982; Luckman, 1992). Landslide and debris flow activity is reported to have increased over the last 200–500 years (Innes, 1985; Ballantyne, 2004) and it is thought that localised extreme rainfall was the major contributing factor to the Scottish landslides in 2004 (Winter *et al*. 2005). Triggering of peat slides is also commonly attributed to intense rainfall events (Dykes & Warburton, 2008).

Climate change (see **Topic 1: Climatic Factors**) is therefore likely to lead to an increase in the frequency of landslides and in the intensity of soil erosion (Ballantyne, 2004; Winter *et al*. 2005).

One of the most important factors in the protection of soils from erosion is vegetation cover, as roots bind soil particles together and plants protect soil from direct raindrop impact, as well as disrupting overland flow. Where vegetation cover is sparse, or soils are bare, the incidence of landslides and soil erosion (by wind and water) is greater.

In some upland areas of the Cairngorms National Park, heavy grazing by sheep and deer has caused a decline in heather cover which has then been replaced by tussock forming grasses with poorer soil binding abilities. However, one difficulty in establishing links between soil erosion (in particular, the erosion of peat) and grazing is that historic stocking densities, which are generally unknown, may have had more influence on the risk of erosion than current stocking densities. Also, both sheep and deer will preferentially graze specific areas, resulting in localised areas experiencing greater grazing pressures and an increased risk of erosion (Lilly *et al*. 2011).

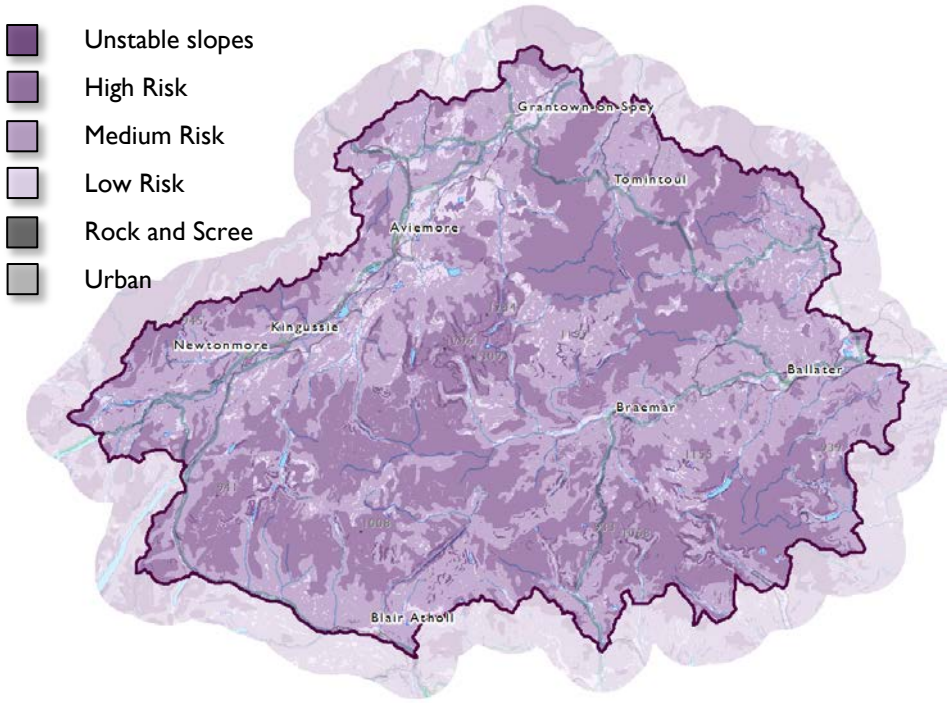


Figure 24 Soil erosion risk within Cairngorms National Park.

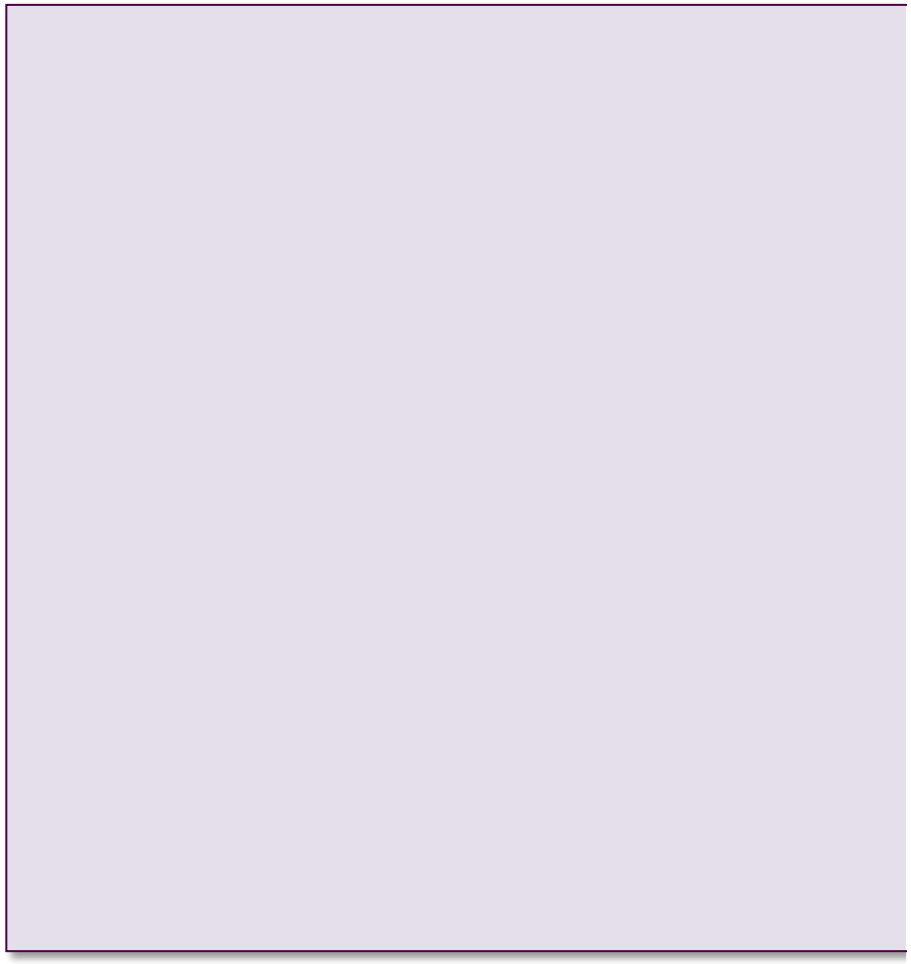
events, which can help reduce flooding and erosion through runoff.

In the Cairngorms National Park, estates and upland farms have commonly used burning as a means of controlling vegetation structure and improved heathland productivity. This can cause issues when too much vegetation is removed. Severe burning may even make the surface organic layer of the soil water resistant resulting in greater run-off and greater potential for soil erosion and landslides (Lilly *et al*. 2011).

Due to the National Park's popularity as a visitor and tourist destination, the effects of recreation must also be given consideration. Hill walking and mountain biking on some hill and upland areas can cause erosion and lead to the extension of paths across sensitive environments where natural regeneration of the vegetation is slow. These areas then become vulnerable to continued erosion (Lilly *et al*. 2011).

In the right places, trees provide a physical barrier to the movement of soils. For example, hedgerows can trap soil on the land and prevent it entering it waterways. Also, trees can improve the rate of water infiltration into the soil, as their roots create channels along which the water can run and penetrate the soil more rapidly. This can reduce the amount of surface water during heavy rainfall

With an area around 600 km^2 of forest cover, soil erosion originating from forestry activities is also a consideration for the National Park. While in most instances, tree cover has a positive effect on soil erosion, providing vegetation cover and binding soils, certain activities may cause issues. For example, the bed of new drainage ditches can be scoured and run-off during harvesting can remove the loosened soil (Lilly *et al*. 2011). The Forestry Commission Guidelines (2011) on forests and soils provide information on forest management to reduce erosion.



Topic 5: Material Assets

In SEA terms Material Assets may cover a range of apparently disparate environmental concerns, including natural resources, geodiversity, waste, infrastructure and property. Many can be scoped out of the SEA for the Woodland Strategy, while others may be dealt with under other topics. For example, soil and water are covered by their own topics. The issues covered within this section therefore, are:

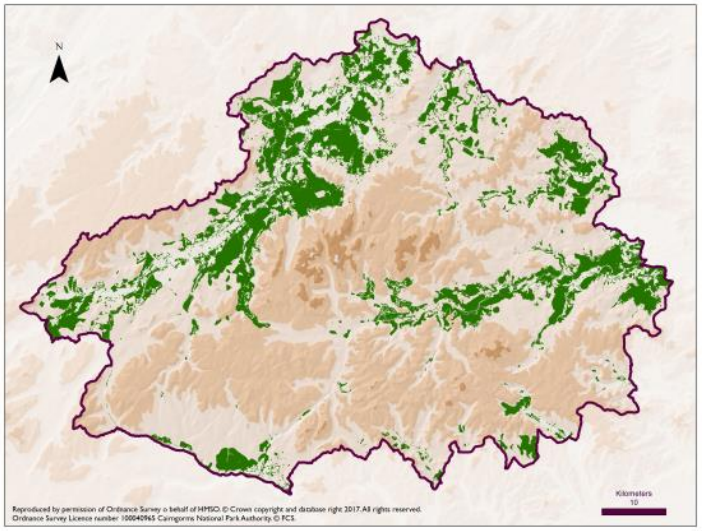
- Natural Resources
- Geoconservation; and
- Energy;

Natural resources

The woodlands of the Cairngorms National Park are a distinctive feature of the landscape, ecology, economy and cultural heritage. Part of the reason for their importance and distinctiveness stems from the unusually high proportion of native tree species they contain (even commercial woodlands are predominantly Scots pine). While the average proportion of native woodland across all Scottish local authority areas is 22.5%, the Cairngorms National Park boasts 69%, making it the only area in Scotland where native woodland forms the majority of the woodland resource.

Of the native woodland resource, 67% consists of native pinewoods, which are a mixture of ancient forest and woods of plantation origin. 63% of native woodland is in good health for biodiversity, based on analysis of four key condition measures.

Map 1. Current forest resource in the Cairngorms National Park



Almost all of the Caledonian Forest resource of the National Park is internationally significant and protected through SAC designation. In the Cairngorms National Park, forest cover is just 16.4% (Map 1), whilst in Scotland as a whole it is 18%. Nevertheless the Cairngorms Forests are disproportionately significant for rare flora and fauna.

Scottish Natural Heritage has identified 223 species for which the Park as 'highly significant' (i.e. supporting between 75 - 100%, of the UK population). Of these 223 species, 100 are dependent on woodland whilst, by comparison, wetland hosts 12, grassland 8 and moorland only one.

Geoconservation

> "…*geological heritage constitutes a natural heritage of scientific, cultural, aesthetic, landscape, economic and intrinsic values, which needs to be preserved and handed down to future generations.*"
>
> Council of Europe (2004).

Geoconservation involves recognising, protecting and managing sites and landscapes identified as important for their rocks, fossils, minerals, or other geological or geomorphological features of interest. Some of the concepts of geoconservation are still being developed; however, in some areas a good deal has been achieved, particularly in the creation of the UK Geodiversity Action Strategy (UK GAP) and Scotland's Geodiversity Charter.

There are many definitions of 'geodiversity', but the majority are variations on similar wording (see Gray, 2008, 2013; Sharples, 1993). Broadly, it may be defined as:

"*The variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them*" (Bruneau *et al.* 2011, p. 3).

As well as being of scientific and cultural importance, geodiversity makes an immense contribution to Scotland's economy, as a source of energy and materials, and as a visitor attraction through its contribution to our unique landscape. Crucially, geodiversity underpins biodiversity through providing mosaics of landforms, soils, water, nutrients and natural processes to support our nationally and internationally important habitats, species and ecosystems (Scottish Geodiversity Forum, 2013; Bruneau *et al.* 2011; Gordon *et al.* 1998, 2001; Haynes, *et al.* 1998; Jonasson *et al.* 2005).

Protecting Geodiversity

There are a range of designations that help to safeguard geodiversity within the Cairngorms National Park, including Sites of Special Scientific Interest (SSSI) and Geological Conservation Review (GCR) Sites. Indeed, geodiversity is part of the special qualities of the National Park.

The landscapes of the Cairngorms National Park have a remarkable history stretching back to some 700 million years. The processes that have led to these old landscapes can be traced today in the rocks, landforms and soils beneath our feet and in the shapes of the straths and mountains around us (Gordon *et al.* 2006; Thomas *et al.* 2004). These landscapes incorporate a wealth of information about past environmental change and in particular, the Cairngorm Mountains are considered to be one of the finest examples in the world of glaciated granite mountains, notable for their distinctive plateau surfaces, tors and glacially sculptured features. These mountains therefore represent a precious scientific, educational, environmental and Earth heritage asset (Kirkbride *et al.* 2010).

There are 16 Geological and Mixed SSSI within the National Park, covering an area of some 680 km^2 (around 15% of the Park's area).

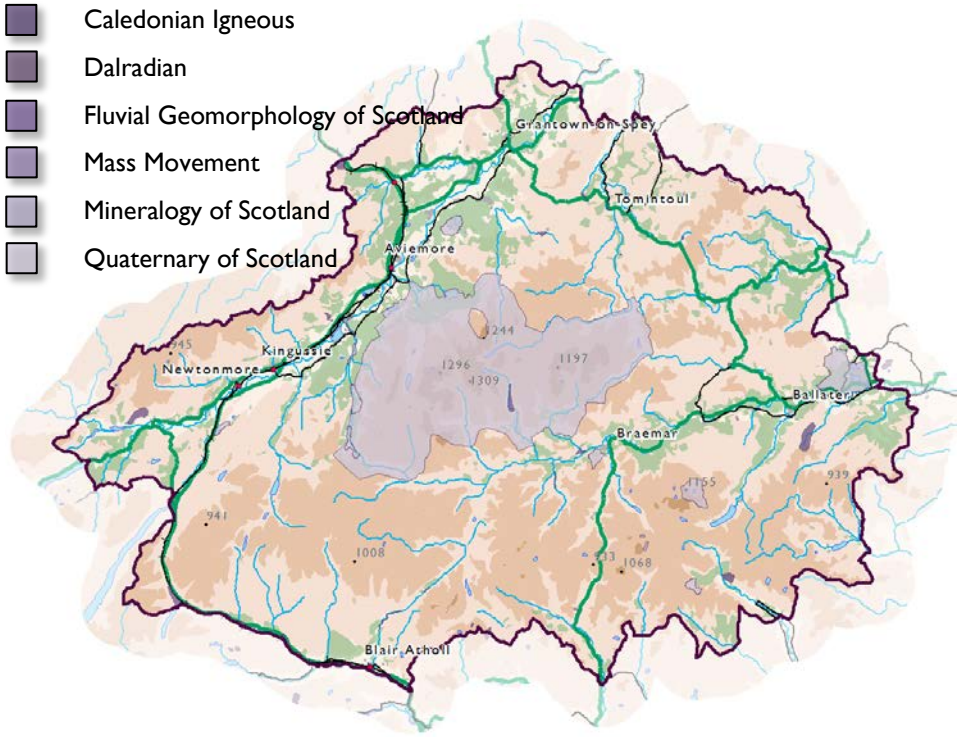


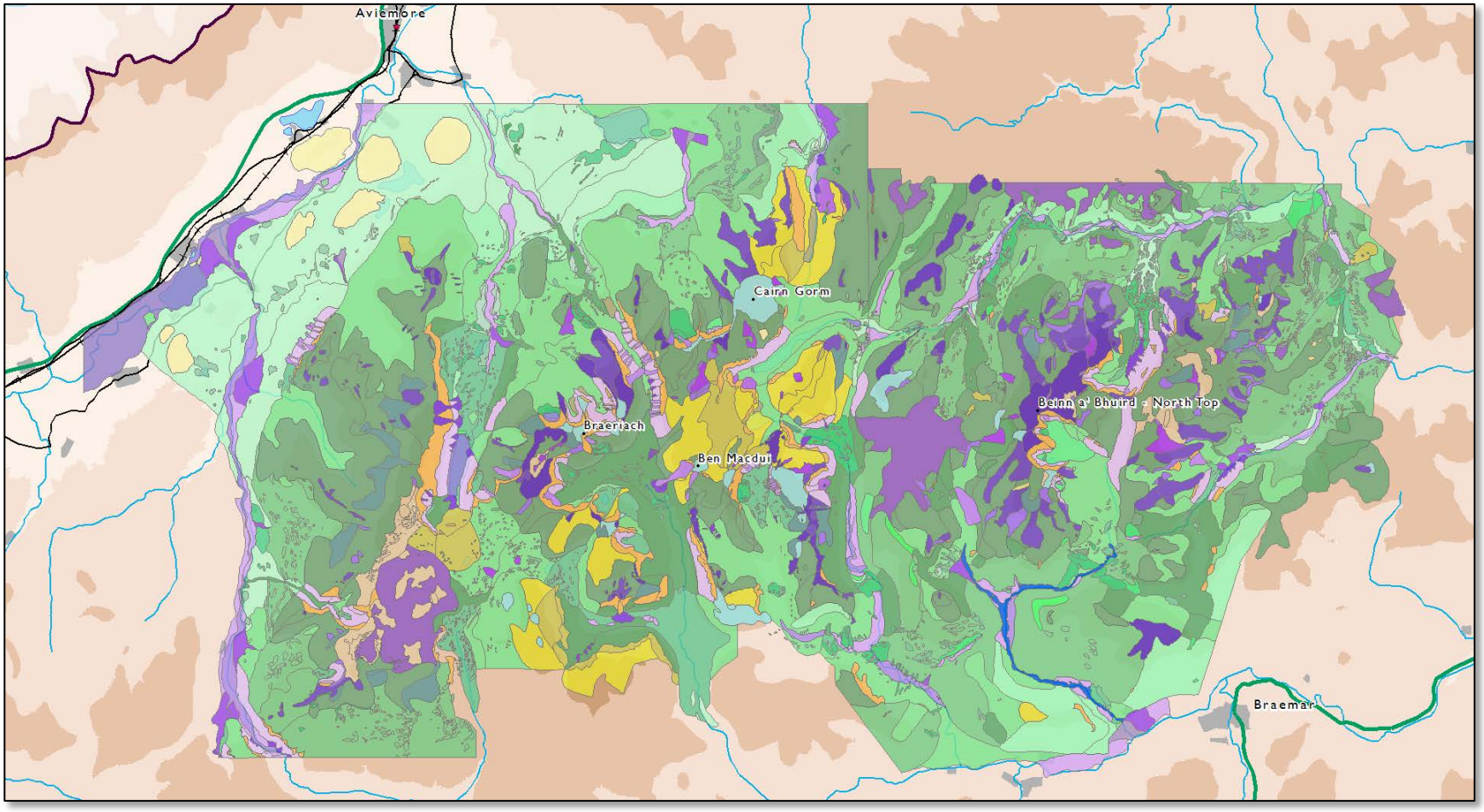
Figure 25 Geological Conservation Review Sites within the Cairngorms National Park by GCR Block Description.

Scale: 1:700,000

Further protection is given to certain areas, which includes areas both within and outwith SSSIs, by the 39 GCR sites within or overlapping the National Park boundary (**Figure**). Combined they cover an area of around 592 km^2, the vast majority of which lies wholly within the National Park itself. In fact, the vast majority of this area (around 526 km^2) is attributed to a single GCR site, the Cairngorms Mountains (site 2284), which is listed for its exceptional assemblage of pre-glacial, glacial, glaciofluvial and periglacial features.

Although British Geological Society (BGS) mapping is available for the whole National Park, detailed geomorpholoical information is more limited. However, SNH along with the BGS have compiled a spatial inventory of the geomorphology of the Cairngorm Mountains core area **Figure 26** (Kirkbride & Gordon, 2010).

The inventory highlights that understanding the links between geodiversity and biodiversity is particularly crucial for conservation management in dynamic environments such as the Cairngorm Mountains, where natural processes (e.g. floods, sediment transport and flow regimes) maintain habitat diversity and ecological functions. It also highlights that consideration of geomorphological sensitivity is a vital part of working in sympathy with natural processes, in assessing natural hazards and implementing sustainable management of ecosystems, particularly under future climate change scenarios.


Aviemore
Cairn Gorm
Braeriach
Ben Macdui
Beinn a' Bhuird - North Top
Braemar

Postglacial and contemporary landforms and processes

- Active river corridor
- Debris cone
- Debris slope
- Large scale rockfall deposits
- Partially vegetated wind stressed surface
- Peat
- Postglacial active alluvial fan surface
- Postglacial relict alluvial fan surface
- Postglacial river terraces and alluvium
- Semi-permanent snow patch and melt-out deposits
- Snow avalanche modified debris slope
- Sparse vegetation
- Wet flushes and snowmelt drainage
- Wetland

Relict periglacial landforms

- Blockfield
- Boulder lobes
- Patterned ground
- Rock glacier deposits
- Solifluction sheets and lobes

Landforms of glacial erosion

- Corrie headwall
- Ice-scoured bedrock
- Roche moutonnée
- Thin regolith covered rock

Landforms of glacial and glaciofluvial deposition

- Boulder and drift limit
- Delta deposit
- Dissected drift
- Eskers
- Former lake shoreline
- Ice-contact slope
- Ice-marginal kame
- Kames and kettled kame
- Kettle hole
- Meltwater channel (bedrock)
- Meltwater channel (drift)
- Moraine
- Moraine limit
- Undifferentiated drift
- Undifferentiated glaciofluvial deposits
- Undifferentiated ice-marginal deposits

Other landform types

- Rock outcrop
- Stable vegetated surface
- Tor

Issues include raising awareness of geodiversity *per se*, as well as the links between geodiversity and other elements of the landscape and land use (Kirkbride & Gordon, 2010).

Within the context of the National Park, the diversity of Earth heritage interests also offers potential opportunities for local involvement in income-generating tourism.

Energy

Because the CNPA has historically implemented quite restrictive policies on energy, developments of energy generating infrastructure have been relatively minor. Since 2010 there have only been 24 Planning applications approved by the CNPA, giving a total installed capacity of around 4.2 Megawatts (MW). Of these, 14 were for hydroelectric schemes, 5 were wind turbines, 3 were biomass boilers and 2 were solar panel arrays (**Figure 27**). There may be more opportunity to use biomass produced locally to reduce transportation energy costs and stimulate the local economy.

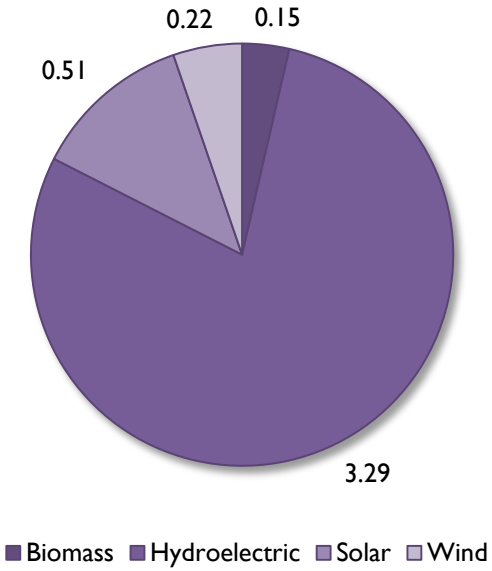


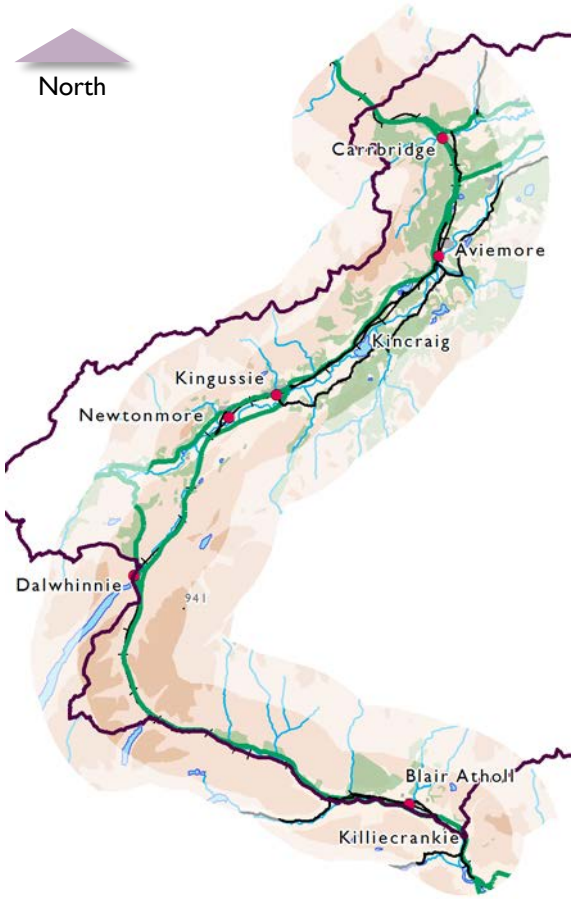
Figure 27 MW of installed renewable energy generation permitted by the CNPA since 2010.

Transport Infrastructure

Road

The National Park benefits from relatively good transport infrastructure and services compared to many other rural areas in Scotland. Four A Class roads, namely the A9, A93, A95 and A86 connect the area with Inverness, Moray, Aberdeenshire, Perth and Kinross and the West Coast.

The A9 (**Figure**) is currently the subject of the A9 Dualling Strategy, which aims to link up the road's existing sections of dual carriageway to create a continuous Category 7 All Purpose Dual Carriageway between Inverness and Perth. It's one of the biggest infrastructure projects in Scotland's history.



Scale:
1:650,000

Figure 28 The A9 in the Cairngorms National Park.

The programme of dualling will result in tree loss also but gain as compensatory habitat is planted. The CNPA have engaged with the consultation process and have used the indicative CFS aspirational woodland planting maps to guide strategic planting. The CNPA are also aware of the risk of creating a conduit for grey squirrel movement north, all planting schemes will take this into account (See **Topic 6: Biodiversity, Flora and Fauna**). It is therefore anticipated that the CFS will result in a cumulative positive impact on the A9 dualling process.

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. Habitats are rich and varied and include the montane alpine Plants high on the Cairngorms plateaux, the sources of renowned salmon rivers the Spey, Dee, Tay and South Esk and stands of trembling Aspen in Strathspey 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 Cairngorms National Park 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.

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.

The Cairngorms National Park is home to woodland NNRs[4] (**Table 2** and **Figure**).

[4] While the Cairngorms NNR, Dinnet Oakwood NNR and Morrone Birkwood NNR are technically declared NNRs (see Table 12), they are under review and not managed or promoted as NNRs.

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

Table 7 Woodland dominated National Nature Reserves in the Cairngorms National Park.

Site Code	Name	Year Est.	Area (ha)
5020	Craigellachie	1960	257.46
5023	Dinnet Oakwood	1966	30.8
5032	Glen Tanar	1979	4,186.76
5051	Morrone Birkwood	1972	226.48
5054	Muir of Dinnet	1977	1,166.17
10097	Invereshie and Inshriach	2007	3,730.86
10098	Glenmore	2007	2,119.49
10099	Abernethy	2007	12,753.81

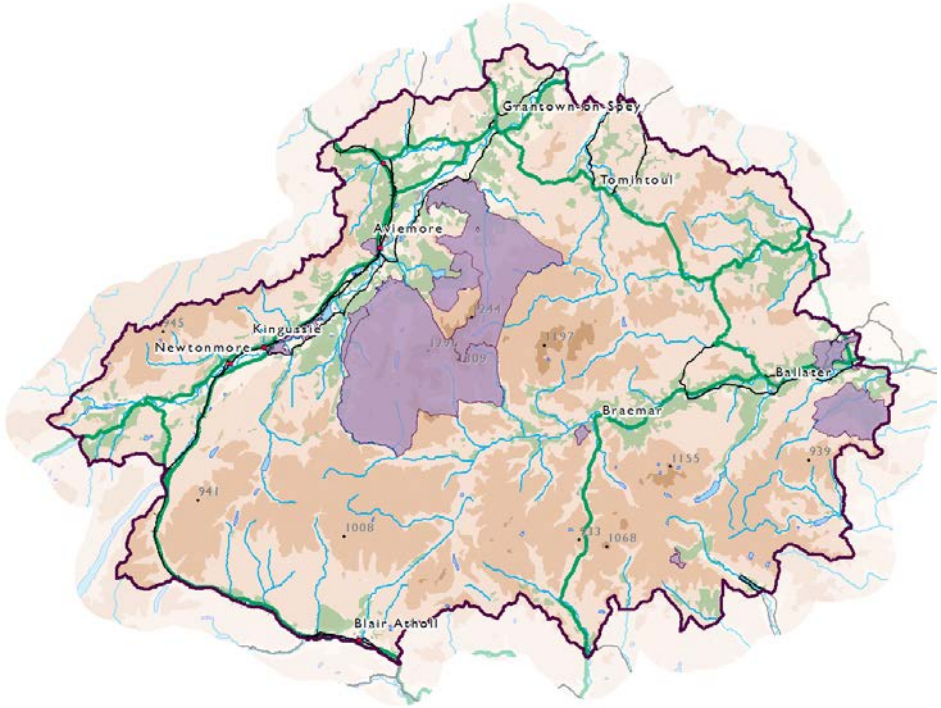


Figure 29 National Nature Reserves in the Cairngorms National Park.

Scale: 1:700,000

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 **Table 8** and **Figure**).

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

SSSIs designated solely for geological or physiographical features are also covered in **Topic 4: Soil** and

Topic 5: Material Assets .

:

Features in 'Favourable' condition.
Features that are in 'Unfavourable' condition.

A simple colour scheme has been used to highlight the condition of interests, the key to which is provided

Features that have not been monitored to date.

Table 8 Condition of Biological and Mixed SSSIs located within the Cairngorms National Park.

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
9	Abernethy Forest	Mixed	5793.46	5793.46	Basin fen	Favourable	No negative pressures identified	18/10/2014
					Beetle assemblage	Favourable	Over-grazing	17/11/2002
					Breeding bird assemblage	Favourable	No negative pressures identified	23/04/2013
					Capercaillie (*Tetrao urogallus*), breeding	Favourable	Under-grazing	19/04/2014
					Crested tit (*Lophophanes cristatus*), breeding	Favourable	No negative pressures identified	03/05/1998
					Dragonfly assemblage	Favourable	Forestry operations, other	01/08/2013
					Fluvial Geomorphology of Scotland	Favourable	Invasive species	06/04/2007
					Fungi assemblage	Favourable	Over-grazing, under-grazing	01/10/2014
					Invertebrate assemblage	Favourable	Trampling	01/08/2013
					Lichen assemblage	Favourable	No negative pressures identified	25/06/2010

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Native pinewood	Favourable	Game/ fisheries management	30/09/2008
					Osprey (*Pandion haliaetus*), breeding	Unfavourable	No negative pressures identified	14/06/2013
					Quaternary of Scotland	Favourable	No negative pressures identified	03/05/2007
					Raised bog	Favourable	No negative pressures identified	12/08/2014
					Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	28/03/2012
					Subalpine dry heath	Unfavourable Recovering Due to Management	Burning, under-grazing	27/09/2004
					Vascular Plant assemblage	Favourable	Maintenance activities	28/03/2007
53	**Alvie**	Biological	339.01	339.01	Goldeneye (*Bucephala clangula*), breeding	Favourable	No negative pressures identified	15/05/2013
					Hydromorphological mire range	Favourable	No negative pressures identified	13/07/2011
					Invertebrate assemblage	Favourable	Forestry operations, over-grazing	16/07/2013
					Upland oak woodland	Unfavourable Recovering Due to Management	Over-grazing	20/07/2005
161	**Beinn a' Ghlo**	Mixed	8084.76	7763.08	Breeding bird assemblage	Favourable	Game/ fisheries management	20/06/2013

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Bryophyte assemblage	Favourable	No negative pressures identified	17/08/2013
					Caledonian Igneous	Favourable	No negative pressures identified	24/11/2010
					Dalradian	Favourable	No negative pressures identified	25/04/2002
					Upland assemblage	Favourable	No negative pressures identified	22/07/2010
					Upland birch woodland	Favourable	No negative pressures identified	30/07/2004
					Vascular Plant assemblage	Favourable	Agricultural operations	29/08/2002
235	**Bochel Wood**	Biological	197.87	197.55	Upland birch woodland	Favourable	No negative pressures identified	19/06/2000
282	**Caenlochan**	Biological	4974.75	4974.75	Breeding bird assemblage	Favourable	Over-grazing, recreation / disturbance	01/07/2003
					Bryophyte assemblage	Favourable	Trampling	31/12/2005
					Dystrophic loch	Favourable	Over-grazing	02/07/2004
					Invertebrate assemblage	Favourable	No negative pressures identified	15/08/2011
					Lichen assemblage	Favourable	No negative pressures identified	03/10/2010
					Montane assemblage	Unfavourable	Over-grazing	16/07/2006
					Quaternary of Scotland	Favourable	No negative pressures identified	26/07/2011
					Vascular Plant assemblage	Unfavourable	Over-grazing, to be identified	31/08/2009

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
288	Cairngorms	Mixed	29226.7	29226.7	Breeding bird assemblage	Favourable	Over-grazing, recreation / disturbance	15/07/2006
					Bryophyte assemblage	Favourable	Natural event	18/08/2005
					Dotterel (*Charadrius morinellus*), breeding	Favourable	Over-grazing, recreation / disturbance, trampling	01/07/2011
					Dystrophic and oligotrophic lochs	Not monitored to date	No negative pressures identified	N/A
					Fluvial Geomorphology of Scotland	Favourable	Forestry operations	30/04/2003
					Fungi assemblage	Favourable	Over-grazing, recreation / disturbance	20/10/2010
					Golden eagle (*Aquila chrysaetos*), breeding	Favourable	Recreation/disturbance	21/10/2007
					Invertebrate assemblage	Favourable	Agricultural operations, other	30/08/2013
					Lichen assemblage	Favourable	Over-grazing	19/08/2010
					Mineralogy of Scotland	Favourable	No negative pressures identified	30/08/2006
					Native pinewood	Unfavourable Recovering Due to Management	Over-grazing, under-grazing	27/01/2009
					Ptarmigan (*Lagopus muta*), breeding	Favourable	Recreation/disturbance	17/07/2004
					Quaternary of Scotland	Favourable	Climate Change, recreation / disturbance	07/08/2003
					Snow bunting (*Plectrophenax nivalis*), breeding	Favourable	Recreation / disturbance, other	24/07/2004

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Upland assemblage	Not monitored to date	No negative pressures identified	N/A
					Vascular Plant assemblage	Favourable	Natural event	05/10/2006

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
419	Craig Leek	Biological	185.13	185.13	Bryophyte assemblage	Unfavourable Recovering Due to Management	Under-grazing	24/07/2009
					Native pinewood	Favourable	Over-grazing	10/09/2009
					Subalpine calcareous grassland	Favourable	Invasive species	01/08/2006
					Upland assemblage	Unfavourable	Forestry operations, under-grazing	16/07/2012
					Upland birch woodland	Unfavourable Recovering Due to Management	Over-grazing	14/07/2011
					Vascular Plant assemblage	Favourable	No negative pressures identified	21/11/2013
428	Craigellachie	Biological	379.85	379.85	Moth assemblage	Favourable	Other	13/08/2014
					Upland birch woodland	Favourable	Burning	23/07/2009
429	Craigendarroch	Biological	67.07	67.07	Upland oak woodland	Favourable	No negative pressures identified	10/07/2013

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
452	Crathie Wood	Biological	193.34	29.06	Invertebrate assemblage	Favourable	Agricultural operations, over-grazing	05/08/2013
					Juniper scrub	Favourable	Burning, Plant pests and diseases, under-grazing	18/09/2012
					Native pinewood	Favourable	Plant pests and diseases	13/08/2009
					Rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation)	Favourable	No negative pressures identified	18/09/2012
					Upland birch woodland	Favourable	No negative pressures identified	18/09/2012
1697	Creag Clunie and the Lion's Face	Biological	251.94	251.94	Bryophyte assemblage	Not monitored to date	No negative pressures identified	N/A
					Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	Over-grazing, under-grazing	31/03/2011
					Elm Gyalecta lichen (*Gyalecta ulmi*)	Favourable	Invasive species	11/02/2003
					Lichen assemblage	Not monitored to date	No negative pressures identified	N/A
					Native pinewood	Unfavourable Recovering Due to Management	Invasive species, over-grazing	08/08/2011
					Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	01/03/2015
455	Creag Dhubh	Biological	1052.31	1052.31	Upland birch woodland	Unfavourable	Over-grazing	03/07/2009
457	Creag Meagaidh	Biological	7033.13	507.19	Breeding bird assemblage	Favourable	Over-grazing, recreation / disturbance, trampling	26/06/2013

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation)	Favourable	Natural event	30/09/2005
					Upland assemblage	Favourable	Trampling	30/09/2005
					Upland birch woodland	Favourable	No negative pressures identified	10/09/2015
					Vascular Plant assemblage	Favourable	Natural event	04/09/2011
460	**Creag nan Gamhainn**	Biological	15.75	6.2	Broad-leaved helleborine (*Epipactis helleborine*)	Favourable	Maintenance activities	28/08/2012
					Lowland calcareous grassland	Favourable	Invasive species	28/08/2012
					Lowland neutral grassland	Favourable	No negative pressures identified	14/07/2008
					Northern brown argus (*Aricia artaxerxes*)	Favourable	Maintenance activities	14/07/2008
					Springs (including flushes)	Favourable	No negative pressures identified	21/07/2011
					Upland birch woodland	Favourable	No negative pressures identified	16/07/2002
514	**Dinnet Oakwood**	Biological	19.73	19.73	Upland oak woodland	Favourable	Invasive species, no proactive management, over-grazing	12/07/2002

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
541	Drumochter Hills	Biological	9688.13	7625.11	Breeding bird assemblage	Favourable	Over-grazing, recreation / disturbance	25/04/2003
					Fluvial Geomorphology of Scotland	Favourable	No negative pressures identified	11/10/2011
					Montane assemblage	Favourable	No negative pressures identified	31/07/2006
					Vascular Plant assemblage	Unfavourable	Burning, over-grazing, water management	15/08/2003
593	Eastern Cairngorms	Mixed	16503.4	16503.4	Arctic charr (*Salvelinus alpinus*)	Favourable	No negative pressures identified	18/07/2008
					Breeding bird assemblage	Favourable	Burning, game/ fisheries management	14/06/2013
					Bryophyte assemblage	Unfavourable	Air pollution	31/07/2010
					Dystrophic and oligotrophic lochs	Favourable	Game/ fisheries management	21/06/2010
					Fluvial Geomorphology of Scotland	Favourable	Water management	15/01/2003
					Fungi assemblage	Not monitored to date	No negative pressures identified	N/A
					Invertebrate assemblage	Favourable	Forestry operations	04/07/2013
					Lichen assemblage	Not monitored to date	No negative pressures identified	N/A
					Native pinewood	Unfavourable Recovering	Natural event, over-grazing	01/04/2008

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
						Due to Management		
					Quaternary of Scotland	Favourable	Recreation/disturbance	07/08/2003
					Upland assemblage	Not monitored to date	No negative pressures identified	N/A
					Vascular Plant assemblage	Favourable	Burning, over-grazing, recreation / disturbance	31/08/2010
1709	**Forest of Clunie**	Biological	19476.6	233.8	Black grouse (*Tetrao tetrix*), breeding	Favourable	Burning, natural event, over-grazing	14/05/2009
					Breeding bird assemblage	Favourable	Water management	29/05/2009
					Hen harrier (*Circus cyaneus*), breeding	Unfavourable	Burning, natural event, over-grazing	29/05/2009
					Osprey (*Pandion haliaetus*), breeding	Favourable	No negative pressures identified	01/08/2010
					Short-eared owl (*Asio flammeus*), breeding	Unfavourable	Burning	29/05/2009
724	**Glen Tanar**	Mixed	4180.09	4142.25	Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	No negative pressures identified	30/04/2014
					Fungi assemblage	Favourable	No negative pressures identified	26/10/2009
					Invertebrate assemblage	Favourable	Forestry operations, under-grazing	26/06/2013
					Native pinewood	Favourable	Invasive species	08/04/2010

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	23/03/2012
					Subalpine dry heath	Favourable	No negative pressures identified	17/11/2009
726	**Glen Tilt Woods**	Biological	15.02	9.4	Upland mixed ash woodland	Favourable	No negative pressures identified	15/08/2000
1665	**Glenmore Forest**	Biological	1440.38	1440.38	Capercaillie (*Tetrao urogallus*), breeding	Favourable	Proactive on-site management	30/04/2009
					Narrow-headed ant (*Formica exsecta*)	Favourable	Conservation activities, Inter-specific competition, No proactive management	30/08/2013
					Native pinewood	Favourable	Game/ fisheries management	16/06/2008
					Quaternary of Scotland	Not monitored to date	No negative pressures identified	N/A
					Scottish crossbill (*Loxia scotica*), breeding	Not monitored to date	No negative pressures identified	7/03/2012
					Vascular Plant assemblage	Favourable	No negative pressures identified	23/07/2007
864	**Kinveachy Forest**	Biological	5325.7	3728.87	Breeding bird assemblage	Favourable	No negative pressures identified	08/06/2007
					Native pinewood	Favourable	No negative pressures identified	24/06/2008

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
1108	Lower Strathabon Woods	Biological	293.47	0	Upland birch woodland	Favourable	Over-grazing, under-grazing	20/08/2010
					Upland oak woodland	Favourable	Over-grazing	29/08/2002
					Wet woodland	Favourable	No negative pressures identified	29/08/2002
1190	Morrone Birkwood	Biological	328.34	328.34	Alpine heath	Favourable	Over-grazing	03/06/2014
					Basin fen	Favourable	No negative pressures identified	02/08/2013
					Bryophyte assemblage	Favourable	No negative pressures identified	06/09/2013
					Fungi assemblage	Favourable	No negative pressures identified	18/10/2012
					Invertebrate assemblage	Favourable	Under-grazing	25/06/2013
					Juniper scrub	Unfavourable Recovering Due to Management	Over-grazing	11/10/2009
					Quaternary of Scotland	Favourable	No negative pressures identified	04/06/2014
					Rocky slopes (includes inland cliff, rocky outcrops, chasmophytic vegetation)	Not monitored to date	No negative pressures identified	N/A
					Spring-head, rill and flush	Favourable	No negative pressures identified	03/06/2014
					Subalpine calcareous grassland	Favourable	No negative pressures identified	03/06/2014
					Subalpine flushes	Favourable	No negative pressures identified	03/06/2014

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
					Upland birch woodland	Unfavourable Recovering Due to Management	Over-grazing	12/11/2009
					Vascular Plant assemblage	Favourable	Over-grazing, recreation / disturbance	03/08/2005
1241	North Rothiemurchus Pinewood	Mixed	1509.75	1509.75	Breeding bird assemblage	Favourable	No negative pressures identified	17/06/2014
					Capercaillie (*Tetrao urogallus*), breeding	Favourable	Proactive on-site management	30/04/2010
					Crested tit (*Lophophanes cristatus*), breeding	Favourable	No negative pressures identified	17/03/2005
					Fungi assemblage	Favourable	Forestry operations, over-grazing, recreation / disturbance, under-grazing	02/10/2014
					Invertebrate assemblage	Favourable	No negative pressures identified	20/08/2013
					Lichen assemblage	Favourable	Over-grazing	21/08/2010
					Native pinewood	Favourable	Invasive species	22/05/2008
					Osprey (*Pandion haliaetus*), breeding	Unfavourable Recovering Due to Management	Other	20/06/2010
					Quaternary of Scotland	Favourable	No negative pressures identified	11/06/2003
					Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures	12/02/2012

Site Code	Name	Type	Total Area (ha)	Are in CNP (ha)	Interest	Summary Condition	Pressures	Visit Date
							identified	
					Vascular Plant assemblage	Favourable	Under-grazing	23/07/2010
1243	Northern Corries, Cairngorms	Mixed	1966.37	1966.37	Breeding bird assemblage	Favourable	Recreation / disturbance, other	11/07/2013
					Quaternary of Scotland	Favourable	No negative pressures identified	26/06/2003
					Scrub	Favourable	No negative pressures identified	28/07/2008
					Upland assemblage	Favourable	No negative pressures identified	03/04/2007
					Vascular Plant assemblage	Favourable	No negative pressures identified	05/10/2006
1274	Pass of Killiecrankie	Biological	62.24	5.55	Fly assemblage	Favourable	No negative pressures identified	03/08/2010
					Upland oak woodland	Unfavourable	Invasive species	28/09/2006
					Otter (Lutra lutra)	Favourable	Over-grazing	08/09/2004
					Vascular Plant assemblage	Favourable	Invasive species, over-grazing	09/07/2007
					Whooper swan (*Cygnus cygnus*), non-breeding	Favourable	Recreation / disturbance	28/03/2010
1504	Struan Wood	Biological	82.82	0	Beetles	Favourable	No negative pressures identified	28/06/2013
					Rannoch roller moth (*Ancylis tineana*)	Favourable	No negative pressures identified	03/08/2012
					Upland birch woodland	Unfavourable	Over-grazing	20/06/2013

There are 28 SSSIs within or overlapping the National Park which have a type of woodland as a notifiable feature. Five of these have Upland Oak woodland, two are in unfavourable condition due to overgrazing or invasive species eg. The Pass of Killiekrankie. Native pinewoods are at threat from overgrazing and invasive species.

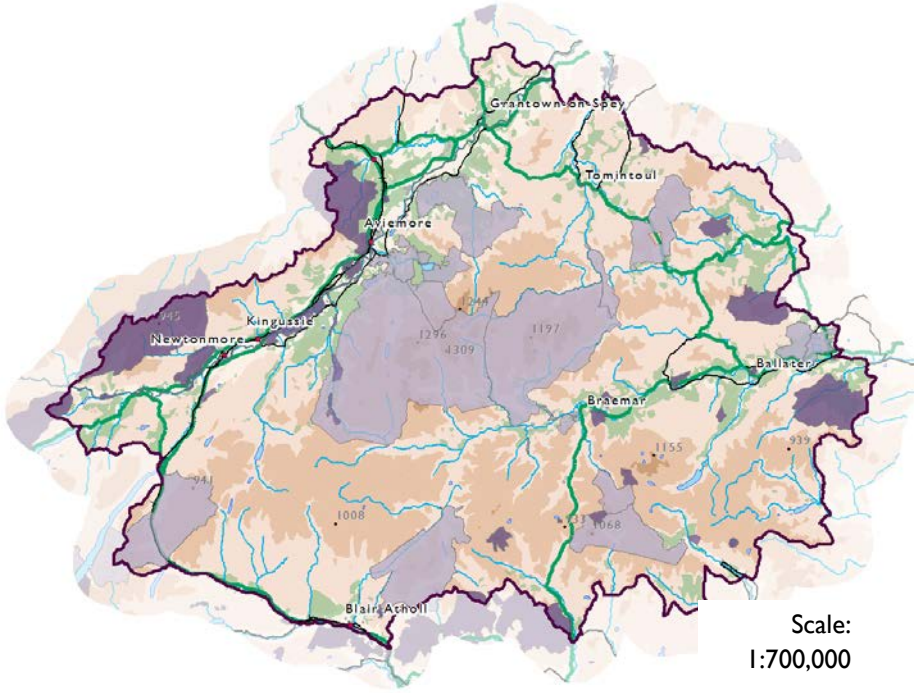


Figure **30** Sites of Special Scientific Interest by type within and overlapping the Cairngorms National Park Authority.

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 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) which are designated for bird species present.

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). Table 4 and **Table 10** provide information on some of the SACs and SPAs for which woodland is a designated feature both within and overlapping the Cairngorms National Park. Sites are listed with their qualifying features, the latest assessment of their respective conditions and when the assessments took place and the key pressures affecting the features.

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

Features in 'Favourable' condition.
Features that are in 'Unfavourable' condition.
Features that have not been monitored to date.

Table 9 Special Areas of Conservation within the Cairngorms National Park.

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK0030027 81	Ballochbuie SAC	1881.73	1881.73	Bog woodland	Unfavourable Recovering Due to Management	Over-grazing	02/08/2011
				Caledonian forest	Unfavourable Recovering Due to Management	Over-grazing	08/08/2011
				Blanket bog	Unfavourable Recovering Due to Management	Burning	05/05/2006
				Plants in crevices on acid rocks	Favourable	No negative pressures identified	01/11/2006
				Dry heaths	Unfavourable Recovering Due to Management	Burning	01/11/2006
				Wet heathland with cross-leaved heath	Unfavourable Recovering Due to Management	Burning	01/11/2006
				Plants in crevices on base-rich rocks	Favourable	No negative pressures identified	23/11/2004
				Otter (*Lutra lutra*)	Favourable	No negative pressures identified	12/11/2011

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK0012821	Caenlochan SAC	5975.28	5975.28	Mountain willow scrub	Unfavourable	Climate change, over-grazing, Plant pests and diseases	23/08/2012
				Acidic scree	Unfavourable	Over-grazing	30/08/2012
				Montane acid grasslands	Unfavourable	Climate change, over-grazing	18/09/2012
				High-altitude Plant communities associated with areas of water seepage	Favourable	No negative pressures identified	18/09/2012
				Tall herb communities	Favourable	No negative pressures identified	18/09/2012
				Plants in crevices on base-rich rocks	Favourable	No negative pressures identified	18/09/2012
				Dry heaths	Unfavourable	Burning, over-grazing	16/07/2006
				Plants in crevices on acid rocks	Favourable	No negative pressures identified	16/07/2006
				Blanket bog	Unfavourable	Burning, over-grazing	16/07/2006
				Alpine and subalpine heaths	Unfavourable	Climate change, over-grazing	16/07/2006
				Base-rich fens	Unfavourable	No negative pressures identified	16/07/2006
				Base-rich scree	Favourable	No negative pressures identified	16/07/2006
				Grasslands on soils rich in heavy metals	Favourable	No negative pressures identified	16/07/2006
				Species-rich grassland with mat-grass in Upland areas	Unfavourable	No negative pressures identified	16/07/2006
0014	ngorms	50903.74	50903.74	Clear-water lakes or lochs with aquatic	Favourable	No negative pressures	23/06/2010

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
				vegetation and poor to moderate nutrient levels		identified	
				Acid peat-stained lakes and ponds	Favourable	No negative pressures identified	24/06/2010
				Caledonian forest	Unfavourable Recovering Due to Management	Invasive species; under-grazing	27/01/2009
				Dry grasslands and scrublands on chalk or limestone	Unfavourable	Over-grazing; under-grazing; over grazing	03/04/2007
				Blanket bog	Unfavourable	Over-grazing	03/04/2007
				Tall herb communities	Favourable	No negative pressures identified	03/04/2007
				Hard-water springs depositing lime	Favourable	Over-grazing	03/04/2007
				Alpine and subalpine heaths	Unfavourable	Burning; over grazing; Recreation / disturbance	03/04/2007
				Dry heaths	Unfavourable	Burning	03/04/2007
				Plants in crevices on acid rocks	Favourable	Recreation / disturbance	03/04/2007
				Acidic scree	Favourable	Recreation / disturbance	03/04/2007
				Mountain willow scrub	Unfavourable	Over-grazing	03/04/2007
				Wet heathland with cross-leaved heath	Unfavourable	Over-grazing	03/04/2007
				Species-rich grassland with mat-grass in Upland areas	Unfavourable	Trampling; under-grazing	03/04/2007
				Plants in crevices on base-rich rocks	Unfavourable	Invasive species	03/04/2007

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
				Juniper on heaths or calcareous grasslands	Favourable	No negative pressures identified	03/04/2007
				Very wet mires often identified by an unstable 'quaking' surface	Favourable	No negative pressures identified	08/04/2007
				Montane acid grasslands	Favourable	Recreation / disturbance	14/07/2006
				High-altitude Plant communities associated with areas of water seepage	Unfavourable	Over-grazing	15/10/2006
				Bog woodland	Favourable	Over-grazing	05/09/2002
				Green shield-moss (*Buxbaumia viridis*)	Favourable	Forestry operations	02/05/2006
				Otter (*Lutra lutra*)	Unfavourable	Recreation / disturbance	22/09/2011
UK0012955	Creag Meagaidh SAC	6144.58	507.19	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable	No negative pressures identified	10/06/2010
				Plants in crevices on base-rich rocks	Favourable	No negative pressures identified	15/08/2010
				Plants in crevices on acid rocks	Favourable	No negative pressures identified	08/08/2005
				Alpine and subalpine heaths	Unfavourable	Over-grazing	01/09/2005
				Mountain willow scrub	Unfavourable Recovering Due to Management	Over-grazing	01/09/2005
				Tall herb communities	Unfavourable	Over-grazing	30/09/2005
				Wet heathland with cross-leaved heath	Unfavourable	Burning, game / fisheries management,	30/09/2005

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
						over-grazing	
				Montane acid grasslands	Unfavourable	Over-grazing	30/09/2005
				Dry heaths	Unfavourable	Burning, over-grazing	30/09/2005
				Blanket bog	Unfavourable	Burning, over-grazing	30/09/2005
				Acidic scree	Unfavourable	Over-grazing	30/09/2005
UK0030134	**Dinnet Oakwood SAC**	19.73	19.73	Western acidic oak woodland	Favourable	Invasive species, no proactive management, over-grazing	12/07/2002
UK0012942	**Drumochter Hills SAC**	9445.56	7382.22	Alpine and subalpine heaths	Unfavourable	Over-grazing, trampling	05/07/2006
				Montane acid grasslands	Unfavourable	Over-grazing, trampling	06/07/2006
				Plants in crevices on acid rocks	Unfavourable	Over-grazing	06/07/2006
				Dry heaths	Unfavourable	Burning	06/07/2006
				Mountain willow scrub	Unfavourable	Over-grazing	06/07/2006
				Wet heathland with cross-leaved heath	Unfavourable	Burning, over-grazing, trampling	06/07/2006
				Blanket bog	Unfavourable	Burning, over-grazing, trampling	06/07/2006
				Species-rich grassland with mat-grass in Upland areas	Unfavourable	Under-grazing	06/07/2006
				Acidic scree	Favourable	No negative pressures identified	06/07/2006
				Tall herb communities	Favourable	No negative pressures identified	08/08/2013
UK0012756	**Glen Tanar SAC**	4180.09	4142.25	Caledonian forest	Favourable	Invasive species	08/04/2010
				Wet heathland with cross-leaved heath	Favourable	No negative pressures identified	21/11/2009
				Dry heaths	Favourable	Under-grazing	23/10/2003

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
				Blanket bog	Favourable	Burning	31/10/2003
				Otter (*Lutra lutra*)	Favourable	No negative pressures identified	23/09/2012
UK0019812	Insh Marshes SAC	1158.78	1158.78	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable	Invasive species, recreation / disturbance	30/07/2010
				Alder woodland on floodplains	Favourable	Flood defence works, invasive species, no proactive management, over-grazing, water management	19/05/2009
				Very wet mires often identified by an unstable 'quaking' surface	Favourable	No negative pressures identified	04/10/2002
				Otter (*Lutra lutra)*	Favourable	Over-grazing, other	08/09/2004

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK0019812	Insh Marshes SAC	1158.78	1158.78	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable	Invasive species, recreation / disturbance	30/07/2010
				Alder woodland on floodplains	Favourable	Flood defence works, invasive species, no proactive management, over-grazing, water management	19/05/2009
				Very wet mires often identified by an unstable 'quaking' surface	Favourable	No negative pressures identified	04/10/2002
				Otter (*Lutra lutra*)	Favourable	Over-grazing, other	08/09/2004
UK0012759	Kinveachy Forest SAC	2849.36	2232.59	Bog woodland	Favourable	No negative pressures identified	24/06/2008
				Caledonian forest	Favourable	No negative pressures identified	24/06/2008

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK0012894	Morrone Birkwood SAC	318.4	318.4	Base-rich fens	Favourable	Trampling	03/06/2014
				Hard-water springs depositing lime	Favourable	Invasive species, over-grazing	03/06/2014
				High-altitude Plant communities associated with areas of water seepage	Favourable	Invasive species, trampling	03/06/2014
				Dry grasslands and scrublands on chalk or limestone	Favourable	No negative pressures identified	03/06/2014
				Juniper on heaths or calcareous grasslands	Unfavourable Recovering Due to Management	Over-grazing	11/10/2009
				Alpine and subalpine heaths	Favourable	Over-grazing, recreation / disturbance	01/07/2008
				Geyer's whorl snail (*Vertigo geyeri*)	Unfavourable	No negative pressures identified	30/06/2013
UK0019958	Morven & Mullachdubh SAC	916.76	916.76	Juniper on heaths or calcareous grasslands	Favourable	Burning, no proactive management, over-grazing, Plant pests and diseases	25/01/2005
UK0019959	Muir of Dinnet SAC	415.76	415.76	Very wet mires often identified by an unstable 'quaking' surface	Unfavourable Recovering Due to Management	Invasive species	30/08/2008
				Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Favourable	Invasive species, water quality	25/06/2004
				Dry heaths	Unfavourable	No proactive	16/02/2001

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
					Recovering Due to Management	management	
				Degraded raised bog	Favourable	Agricultural operations, invasive species	30/06/2000
				Otter (*Lutra lutra*)	Favourable	Natural event, water quality	04/10/2012

Significant pressures on qualifying features are burning and over-grazing.

Around 53% of the land area protected as an SAC falls within the Cairngorms SAC, which is the third largest in Scotland.

Woodland is 7% of the designated habitat type in the Cairngorms National Park.

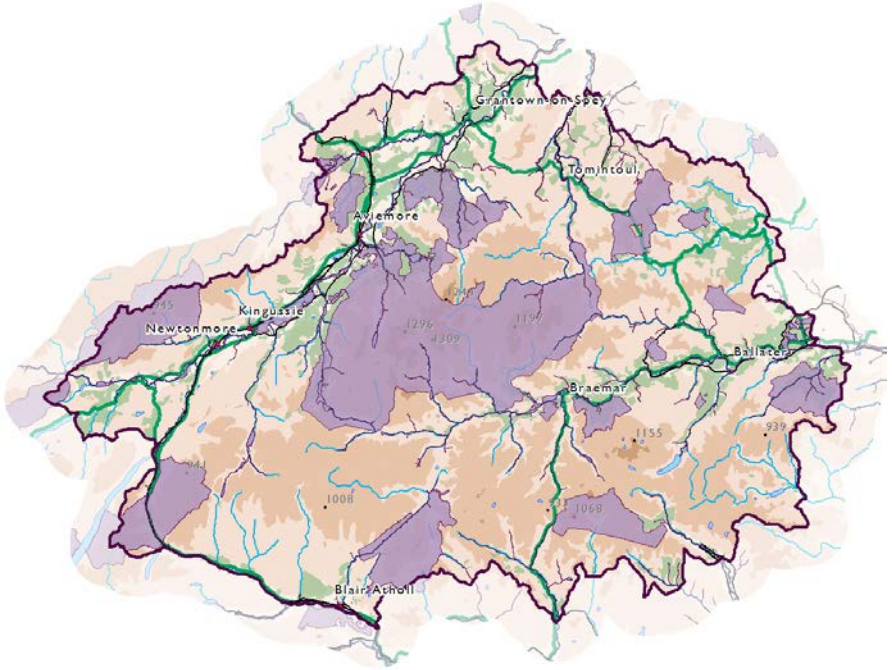


Figure 31 Special Areas of Conservation within the Cairngorms National Park.

Scale:
1:700,000

Table 10 Special Protection Areas within the Cairngorms National Park.

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK9002561	Abernethy Forest SPA	5793.46	5793.46	Capercaillie (*Tetrao urogallus*), breeding	Favourable	Under-grazing	28/04/2009
				Osprey (*Pandion haliaetus*), breeding	Favourable	No negative pressures identified	31/05/2007
				Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	28/03/2012
UK9020297	Anagach Woods SPA	392.78	392.78	Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	Recreation / disturbance	29/04/2015
UK9002781	Ballochbuie SPA	1881.73	1881.73	Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	Forestry operations, natural event, over-grazing, under-grazing.	14/04/2014
				Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	01/03/2015
UK9002241	Cairngorms SPA	50903.74	50903.74	Capercaillie (*Tetrao urogallus*), breeding	Favourable	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	No negative pressures identified	01/06/2006
				Golden eagle (*Aquila chrysaetos*), breeding	Favourable	Game / fisheries management	31/07/2009
				Dotterel (*Charadrius morinellus*), breeding	Unfavourable	Recreation / disturbance; over-grazing	01/07/2011
				Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	14/03/2012

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
				Peregrine (*Falco peregrinus*), breeding	Favourable	Recreation / disturbance	30/06/2002
UK9001801	**Craigmore Wood SPA**	654.09	654.09	Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	No onsite activities identified	20/04/2014
UK9004381	**Forest of Clunie SPA**	19349.38	905.22	Osprey (*Pandion haliaetus*), breeding	Favourable	No negative pressures identified	01/08/2010
				Merlin (*Falco columbarius*), breeding	Unfavourable	Burning, natural event, over-grazing	29/05/2009
				Hen harrier (*Circus cyaneus*), breeding	Unfavourable	Burning, natural event, over-grazing	29/05/2009
				Short-eared owl (*Asio flammeus*), breeding	Unfavourable	Burning	29/05/2009

Site Code	Name	Total Area (ha)	Are in CNP (ha)	Qualifying Feature	Summary Condition	Pressures	Visit Date
UK9027711	Glen Tanar SPA	4180.09	4142.25	Capercaillie (*Tetrao urogallus*), breeding	Unfavourable	Forestry operations, recreation / disturbance, under-grazing	18/04/2011
				Hen harrier (*Circus cyaneus*), breeding	Favourable	No negative pressures identified	19/07/2010
				Osprey (*Pandion haliaetus*), breeding	Favourable	Forestry operations, recreation / disturbance	13/10/2010
				Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	23/03/2012
UK9002581	Kinveachy Forest SPA	2849.36	2232.59	Capercaillie (*Tetrao urogallus*), breeding	Favourable	No negative pressures identified	15/05/2008
				Scottish crossbill (*Loxia scotica*), breeding	Favourable	No negative pressures identified	27/03/2012
				Wigeon (*Anas penelope*), breeding	Unfavourable	Natural event, recreation / disturbance	30/05/2009
				Osprey (*Pandion haliaetus*), breeding	Favourable	Recreation / disturbance	07/09/2009
				Whooper swan (*Cygnus cygnus*), non-breeding	Favourable	No negative pressures identified	31/12/2000
				Spotted crake (*Porzana porzana*), breeding	Favourable	No negative pressures identified	31/12/2000
				Wood sandpiper (*Tringa glareola*), breeding	Unfavourable Recovering Due to Management	Forestry operations	31/12/2000

There are 7 SPAs within or overlapping the National Park (**Figure**), designated for Capercaillie , two are in unfavourable condition due to forestry operations and recreational disturbance.

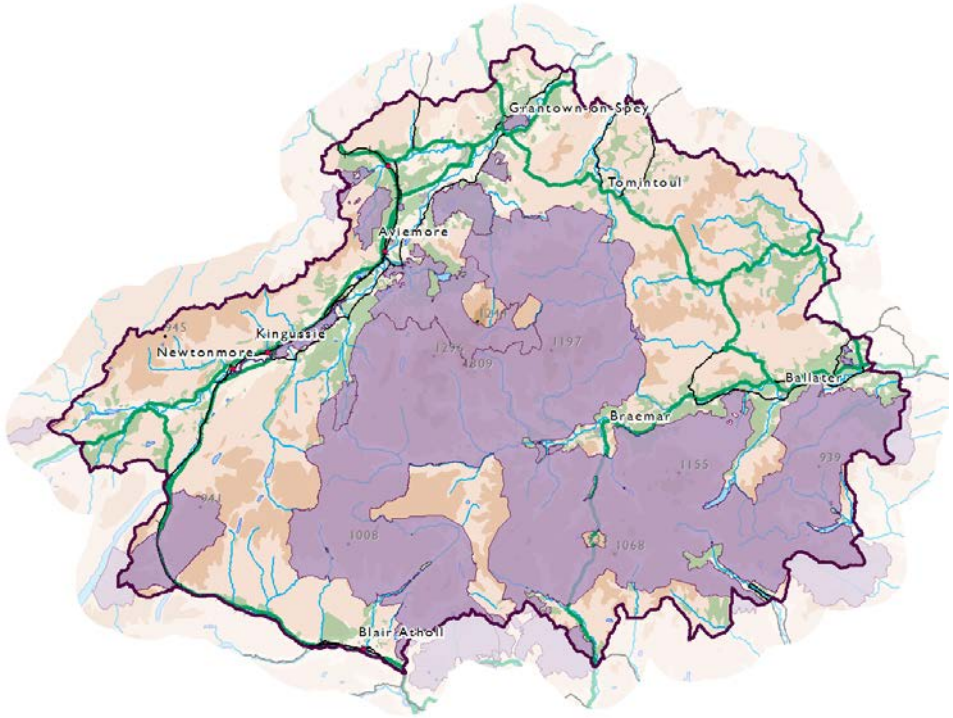


Figure 32 Special Protection Areas within the Cairngorms National Park.

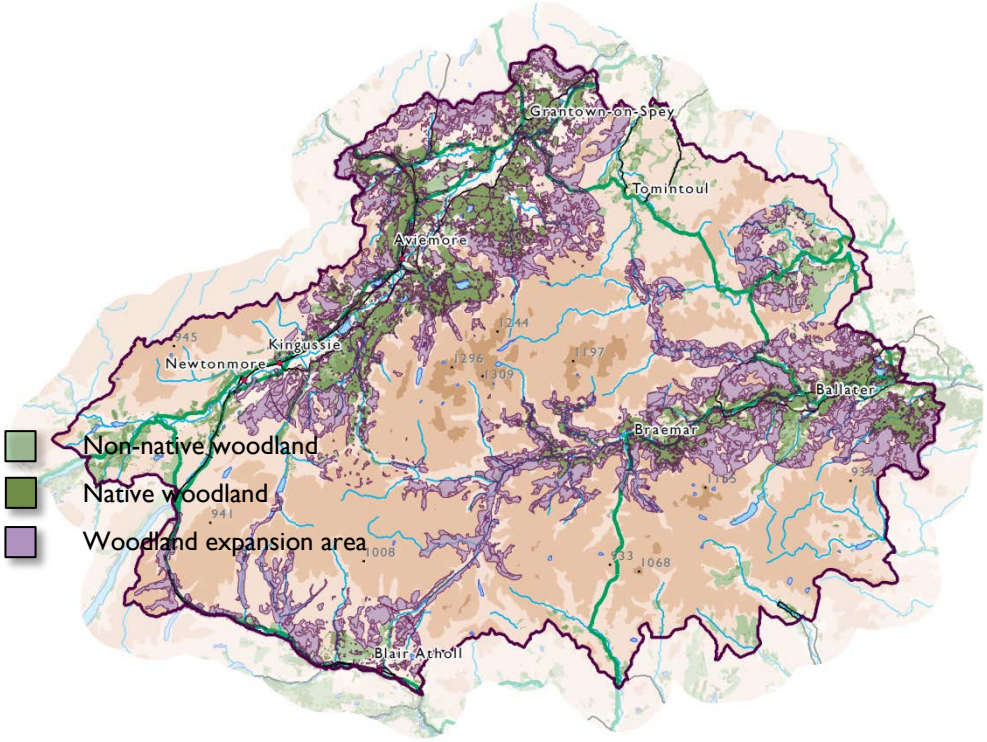
Scale: 1:700,000

Important Woodland 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 Strategy (CNAP) 2013-2018.

Woodlands

The Cairngorms National Park contains the most extensive tracts of Caledonian forest in Britain, comprising pine, juniper and broadleaved



contains the best examples in Scotland of bog woodland, montane willow scrub and stands of aspen. Native tree species comprise around 69% of these woodlands, representing a quarter of the entire Scottish native woodland resource.

species (**Error! Reference source not found.**33). It also

Strathspey, Strathavon, Glenlivet, Donside, Deeside and the Angus Glens combined contain an extensive, varied and predominantly native network of forest habitats. This is one of the most valuable ecological networks in Britain and one of the most widely recognised special qualities of the Cairngorms National Park.

Key woodland types found within the National Park are:

- Caledonian Pinewoods,
- Conifer Plantations,
- Birch & Aspen Woodland,
- Wet & Riparian woodland,
- Montane scrub, and
- Upland Oak

The native pine woodlands of predominantly self-sown Scots pine are the western-most link to the extensive boreal forest which formerly covered a much larger area of northern Europe. Aspen can tolerate a wide range of soil types and climatic conditions and it is likely that its present distribution is due to the effects of deforestation.

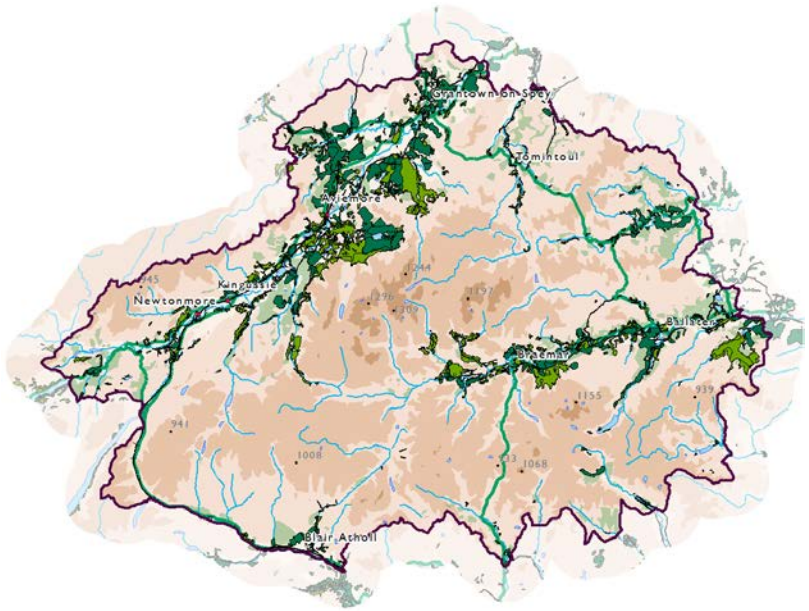


Figure 34 Areas of ancient woodland in the Cairngorms National Park.

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Around 340 km^2 of the National Park's woodlands are also identified as being ancient according to SNH's Ancient Woodland Inventory (

Figure 55). Around 160 km^2 of this has also 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.

Over the last 25 years there has been an increased awareness of the multiple benefits that native woodland can deliver and an upsurge in action to restore and expand native woods. Between 2013 and 2015 890ha of new native woodland has been created in the National Park, the CFS strategy will identify areas of with future potential (**Error! Reference source not found.35**).

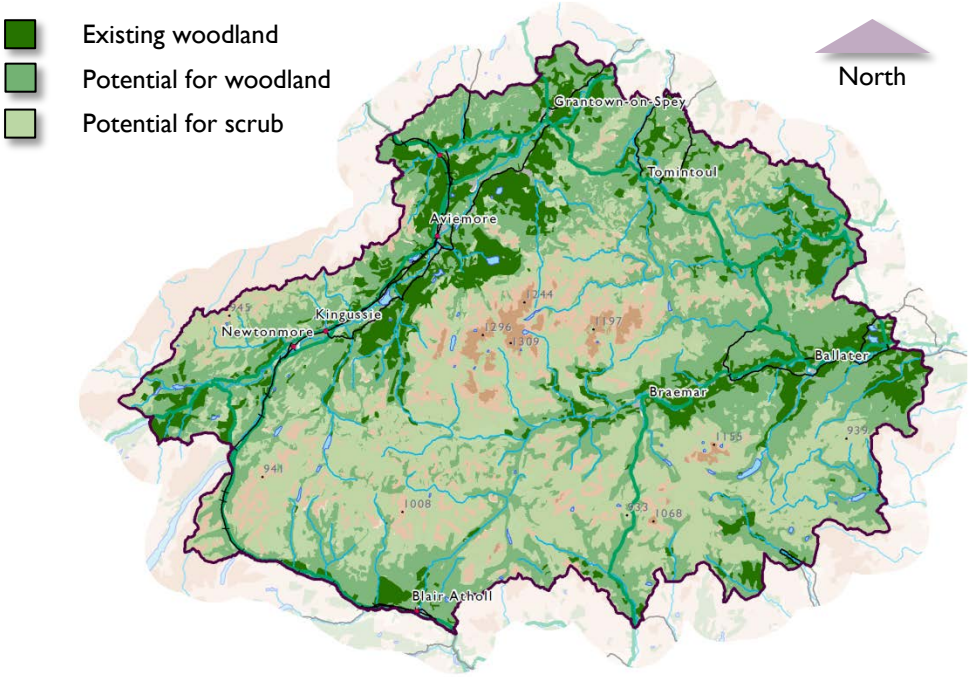

Figure 35 Existing woodland and land with potential for woodland and scrub in the Cairngorms National Park.

Scale: 1:700,000

However, Lack of regeneration, poor structural diversity and grazing pressure has resulted in some woodlands suffering from reduced biodiversity value.

Improved connectivity through woodland expansion combined with good management is crucial to enhance habitat that supports species of high conservation value.

Table 6 provides the main issues affecting woodlands within the National Park together with actions required to address them.

Table 6 Issues affecting woodlands in the Cairngorms National Park.

Habitat	Issue	Action Required
Caledonian Pinewood	At threat from habitat loss, lack of regeneration, limited deadwood and poor structural diversity. Past management has reduced species diversity in many of the remaining woods.	➢ Improving the existing resource and encouraging expansion into areas for habitat connectivity and resilience which will mitigate against further loss and also enhance the habitat to halt the decline and encourage growth.
Conifer Plantations	Mixture of Scots Pine, Sitka and Norwegian Spruce, Lodgepole pine and Douglas fir and larch. Many are of single species and single age and are of limited value for biodiversity. Conifer Plantations make up 50% of the woodland resource and a third of these are on Ancient Woodland Sites.	➢ Promote the restoration of Plantations on Ancient Woodland Sites. ➢ Encourage and provide advice and guidance on continuous forest cover via workshops, demonstration projects and events. ➢ Promote stand restructuring and thinning to create a mosaic of different densities and structures.
Birch & Aspen Woodland	Aspen dominated woodland is unique to the Cairngorms National Park, the stands are small and total less than 350ha concentrated in Strathspey and Deeside.	➢ Encourage and advise land managers to manage birch woodlands for aspen enhancement. ➢ Review grazing management in high nature value areas to encourage vigorous birch and aspen regeneration and a diverse field layer.
Wet & riparian woodland	Fragments of ancient floodplain woodlands are rare in the UK, the Cairngorms National Park has some of the	➢ Identify sites for creating and expanding bog and wet woodland. ➢ Block drains, re-wet

	best, especially in Strathspey and Deeside.	areas and remove non-native conifers.
Upland oak	Lack of regeneration, poor structural diversity and grazing pressure has reduced their biodiversity value. Most of the oak woodlands are found in Deeside	➢ Encourage better land management and reduce grazing pressures.
Montane scrub	Grazing pressure and land management has restricted montane scrub to the often inaccessible fringes.	➢ Encourage better land management and reduce grazing pressures.
Biosecurity	Disease affecting tree species. Invasive non-native spread	➢ Diverse species woodlands less susceptible to disease. ➢ Identify threats from and discourage the spread of Non-natives eg grey squirrel are on the eastern and southern park boundaries

Key Woodland Species

The Cairngorms Nature Action Plan species which have been selected for targeted action and are dependent on woodland habitat are listed in **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, 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 Strategy (2015) and suggests mitigation packages be developed to ensure no impact on Capercaillie.

Table .

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 **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.

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Table , within the Cairngorms National Park, these include:

Capercaillie Framework

Capercaillie (*Tetrao urogallus*) 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**).

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Table 7 Woodland species selected for targeted action in CNAP (CairngormsNational Park Authority, 2013).

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.

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.

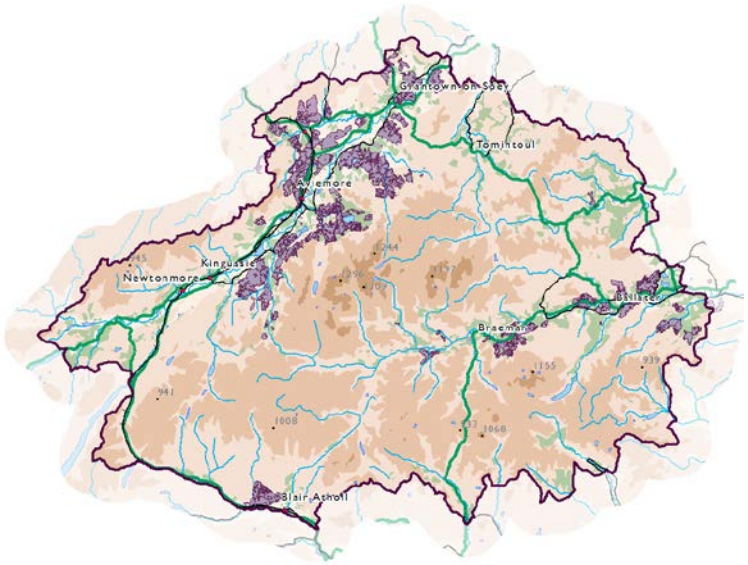


Figure 36 Areas where Capercaillie have been sighted in the Cairngorms National Park since 2007.

Red Squirrel of the Highlands

The Red Squirrels of the Highlands Project is working to monitor and conserve Red Squirrels in the National Park. Grey squirrels which carry a virus that is deadly to red squirrels are occasionally seen moving up the River Dee from Aboyne or moving up the River Garry from Pitlochry. Forest habitat network creation should avoid creating pathways for grey squirrel colonisation of red squirrel strongholds within the CNP.

Wildcat - Tiger of the Highlands

The project raised awareness of the wildcat's (*Felis silvestris*) 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 Priority Areas within the National Park.

Deer

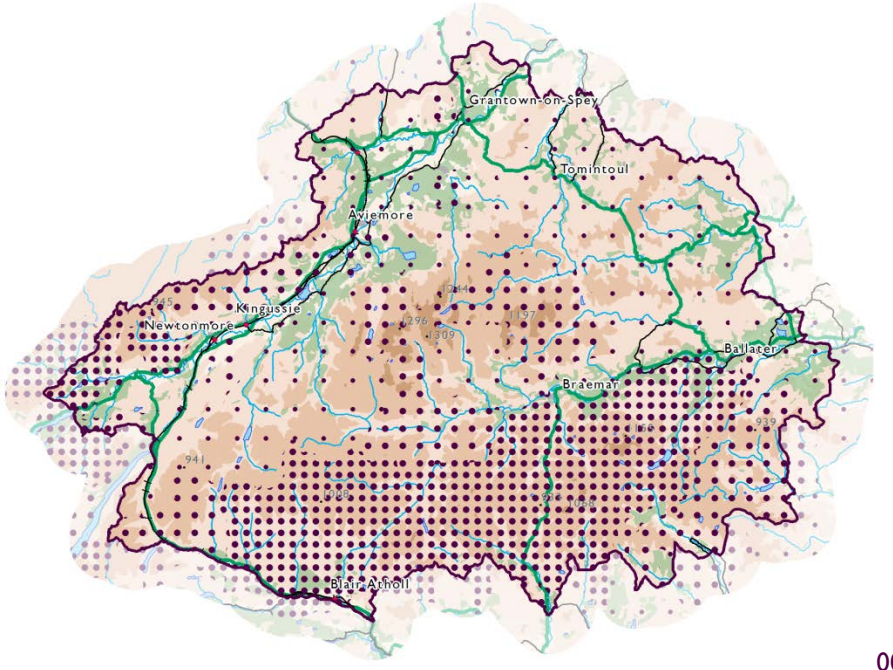
There are four species of deer found within the Cairngorms National Park, all contributing to different extents to the biodiversity and economy of the area. **Figure 37** shows their relative densities throughout the park. The UK's largest wild land mammal, Red deer are common in most areas of the National 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 (*Capreolus capreolus*) 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 (*Cervus nippon*) 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 (*Rangifer tarandus*) 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). One of the Framework's aims is to create patchwork of deer densities allowing different deer management objectives to be achieved in different parts of the Park.

Figure 37 Aspirational Red Deer Densities in the Cairngorms National Park, November 2015.



00040965 Cairngorms National Park Authority.

Key Woodland Sites in the Cairngorms National Park

Key woodlands within the Cairngorms National Park are Abernethy, Glenmore, Rothiemurchas and Inshriach, all of which are located in Strathspey. Together these reserves form the largest continuous tract of native woodland in the UK. In Deeside Glen Tanar and Dinnet Oakwood are examples of Caledonian woodland and old Sessile Oak (*Quercus petraea*) woodland, a habitat which is very fragmented in north-east Scotland. They are managed by various organisations, which include the Forestry Commission, SNH, RSPB and the Estates. They are home to Osprey, Capercaillie, Red Squirrel and Crossbill. The forests have a rich understorey and Plant species include Twinflower and One flowered wintergreen (*Moneses uniflora*).

Uplands

Montane 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.

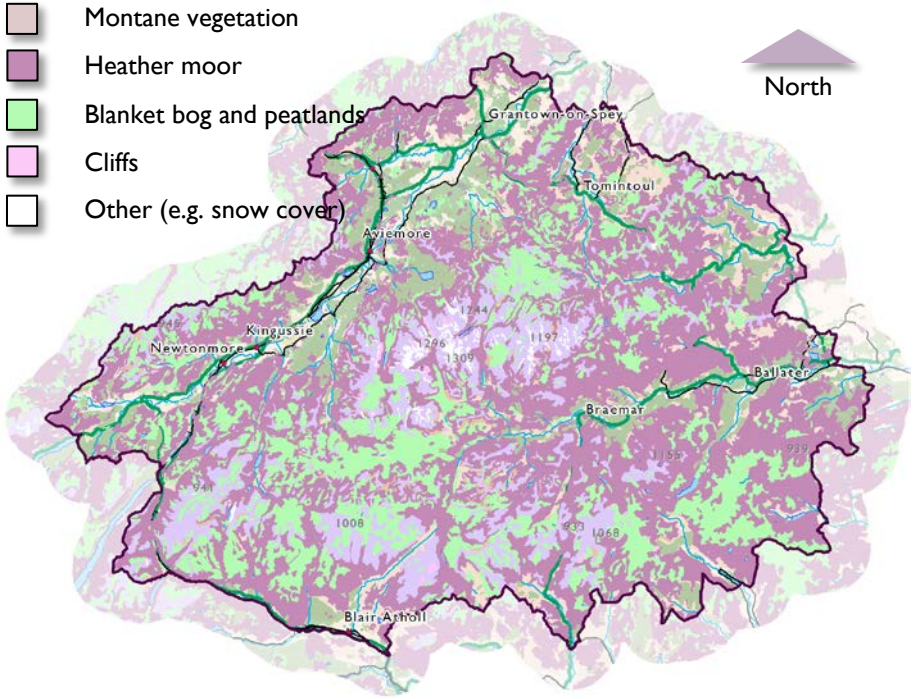


Figure 38 Upland land cover types within the Cairngorms National Park (Soil Survey of Scotland Staff, 1981).

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. Creag Fhiaclach is one of the best areas for montane scrub in Britain. 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 (*Micranthes nivalis*), Highland saxifrage (*Saxifraga rivularis*), hare's-foot sedge (*Carex lachenalii*), curved wood-rush (*Luzula arcuata*) and green shield-moss (*Buxbaumia viridis*) above the treeline.

In recent years one of the key drivers for improving the management of the uplands has been the establishment of working groups whose membership consists of some of the National Park's largest landowners. Together, Cairngorms Connect and the East Cairngorms Moorland Partnership cover around 43% of the National Park

Bio-security

Non-native species, pathogens and disease can have an impact on the nature of the Cairngorms and a range of environment-based economic activities including fishing, farming and forestry.

Non-native species

The Cairngorms National Park is one of the last strongholds for Red Squirrel (*Sciurus vulgaris*) in the UK. Grey Squirrels (*Sciurus carolinensis*) 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 Highlands and National Park area, the Saving Scotland's Red Squirrels project monitors red squirrel distribution. Grey squirrels are in the Blair Atholl area of the CNP. It is vital that newly created Forest Habitat networks do not favour the spread of grey squirrels into the red squirrel strongholds in the CNP. There is increasing evidence that the presence of Pine marten can help control grey squirrel as they're easier to catch. Creating Forest Habitat networks will also benefit an increased distribution in pine marten population throughout the CNP.

Pathogens & Disease

Pathogens can cause death or reduce viability of populations which has great implications for habitat connectivity.

Red band needle blight (also known as Dothistroma Needle Blight) is a fungus which causes the premature loss of pine needles (Lodgepole, Corsican and Scot's). DNB is found within many of the larger forests

within the CNP including Glenmore, Inshriach and Strathdon areas. Currently in the National Park planting of Scots Pine within 600m of existing stands is discouraged which could have long term impacts on woodland structure and species composition. As an alternative natural regeneration or planting with Norway Spruce or larch is preferred. However since April 2017 guidance has relaxed for exceptional cases eg priority capercaillie habitat where planting of local provenance pine can be considered.

Ash die back or Chalara (*Hymenoecyphus fraxineus*) is a fungus causing dieback and mortality in Ash trees. In 2015 records show it on the southern edges of the National Park. There is a statutory ban on imports and movements of ash trees and seed from planting unless it is 'passported' as from a pest-free area. This leaves an ecological gap for large, wide canopy broadleaves.

Phytophthora ramorum is a fungal disease of Larch, the highest incidence is in the south west of Scotland where the wetter warmer climate encourages its growth and spread. Tthere have been four outbreaks in the CNP area close to Blair Atholl resulting in loss of infected larch and of trees in the surrounding buffer zone. There are also records just outside of Aboyne to the east of the park in Aberdeenshire.

Phytophthora austrocedraeon is a fungus which causes dieback and mortality in Juniper when it attacks the roots and stems, it has been found within the CNP and is thought to be transmitted to new areas through movement of livestock.

Topic 7: Landscape and Cultural Heritage

Landscape

> "*Landscapes* [are]… *an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity.*"
>
> European Landscape Convention (2000).

Landscape is the physical manifestation of space, the tangible elements that give shape and diversity to our surroundings. It is the product of thousands of years of interaction between man and nature, encompassing the environmental and cultural, physical and symbolic. It is also the environment perceived, predominantly visually but additionally through our senses of smell, touch and hearing. Our appreciation of landscape is also affected, by our cultural backgrounds, and by personal and professional interests.

Landscape is important, not just as scenery but because it links culture with nature, and the past with the present. Well-looked after and highly valued landscapes are essential to social well-being and an economically healthy society. Landscapes are valued because of their inherent interest, their contribution to both national identity and local distinctiveness. The protection of high quality and highly valued landscapes therefore is important both for its own sake and for the health, social and economic wellbeing of individuals and communities.

At 4,528 square kilometres, and comprising 6% of Scotland's land area, the Cairngorms National Park is the UK's largest protected landscape.

The Cairngorms are best known as an Upland massif of expansive proportions and a sub-arctic environment. There are no other mountains like them in Britain. Massive granite domes with corries and passes scooped out; broad rolling plateau more like Scandinavia than the UK. Nowhere else is consistently higher, colder or wilder. The mountains domination the National Park and have an effect on the way people live and the landscapes they live in.

But the landscape of the Cairngorms National Park is far more than that. It encompasses strath and glen, village and farm, woodland, moorland, river and loch. Landscapes that provide a home and a livelihood, engage the imagination, excite the mind, challenge our endurance and strength and give us a sense of the past and memories for the future.

Landscapes change daily, seasonally and year by year as the light changes, as crops are harvested, as trees grow, as houses are built and others fall into ruin and as rocks weather and erode. In the coming years and decades, the landscapes of the National Park will change as we address issues such as climate change, the decline of fossil fuels and changing population dynamics.

Landscape Character Areas

The whole of the National Park is divided into landscape character areas, which can be categorised as belonging to either its Uplands or Glens and Straths (**Figure 39**). These areas are all different but within each one there is a consistency of character formed by the topography, land use, history, settlement and development and the way the landscape is experienced. Within the glens and straths there is more diversity of landscapes in a smaller area, whereas in the Uplands the landscape tends to be similar over much larger areas (Grant *et al.* 2009).

The character areas provide a spatial framework for the delivery of the National Park's responsibilities, duties and policies. A description of their landscape characteristics, experience and sensitivity of each area, along with a succinct summary of what makes the areas distinctive from elsewhere in the national Park, is provided on the CNPA's website:

www.cairngorms.co.uk/landscape-toolkit

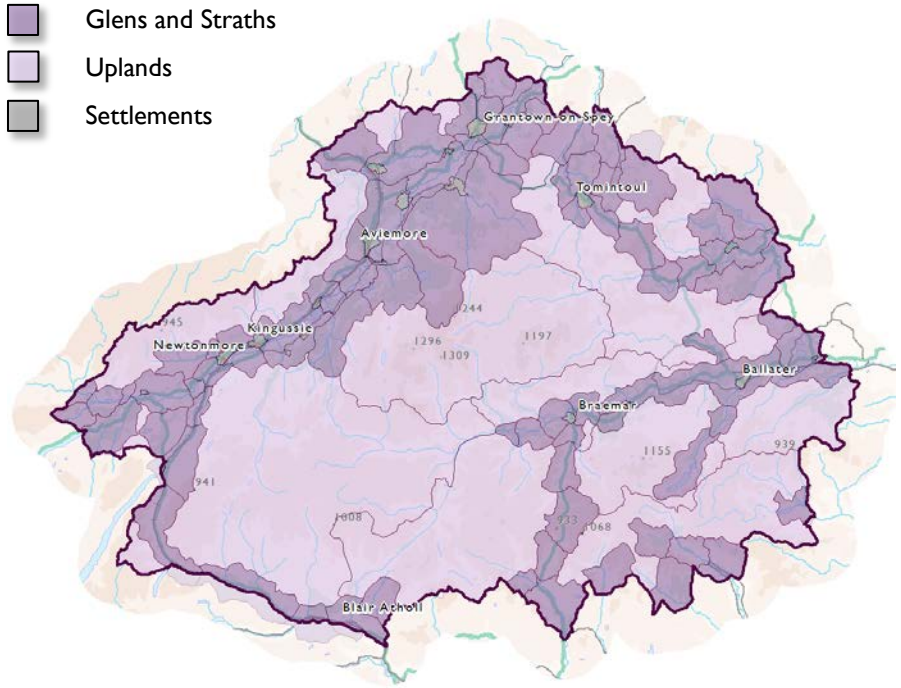


Figure 39 Broad categories of Landscape Character Areas of the Cairngorms National Park.

Scale: 1:700,000

National Scenic Areas

The landscapes of the Cairngorms National Park have long been regarded as worthy of protection, with three National Scenic Areas (NSAs) being designated in 1980/1981 (Scottish Natural Heritage, 2010). Two, namely the Cairngorm Mountains NSA and Deeside and Lochnagar NSA, are located entirely within the National Park boundary and are largely centred on the highest mountain plateau at its core (see **Figure**), but also include lower hills and areas of moorland, woodland and inhabited strath (Scottish Natural Heritage & Cairngorms National Park Authority, 2010). Combined, the two NSAs cover an area of around 1,072 square kilometres, which equates to just under 25% of the National Park's land area. The third designation is the Loch Tummel NSA which very slightly overlaps the National Park's boundary at Killiecrankie, near Blair Atholl. The area of this NSA within the National Park is insignificant when considering its full dimensions.

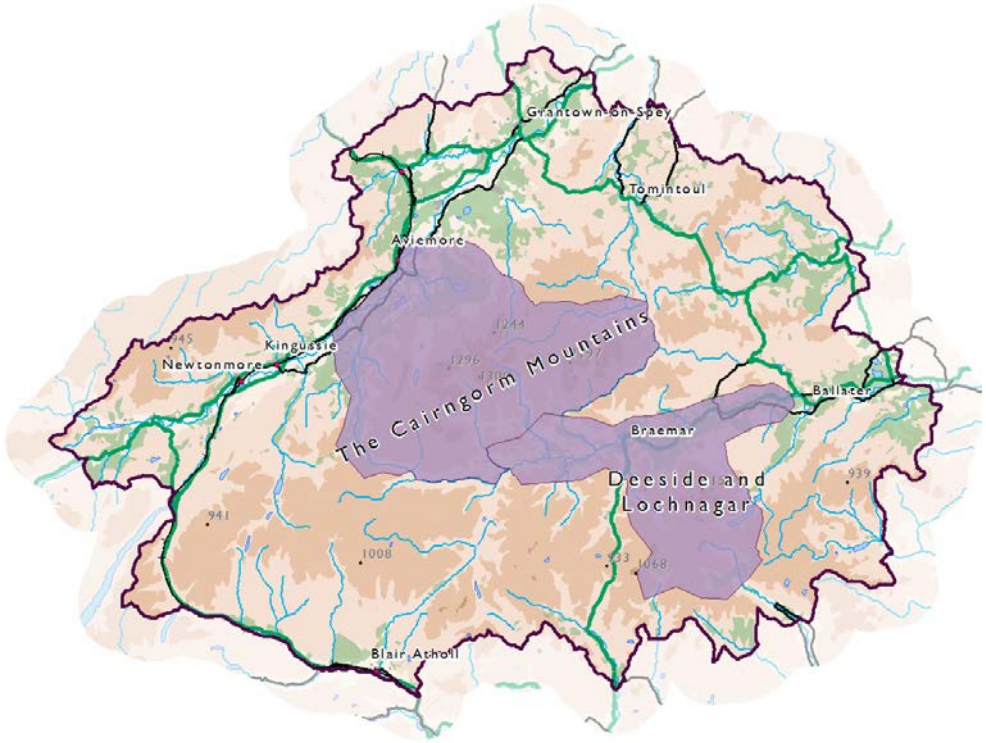


Figure 40 National Scenic Areas of the Cairngorms National Park.

Scale: 1:700,000

NSAs are designated under Section 263A of the Town and Country Planning (Scotland) Act 1997, and are defined as "*of outstanding scenic value in a national context*". The legislation also states that within an NSA "*special attention is to be paid to the desirability of safeguarding or enhancing its character or appearance*" (Scottish Natural Heritage, 2010). This is given a policy basis through paragraph 212 of Scottish Planning Policy (SPP) (Scottish Government, 2014, p. 48). Most new developments within NSAs need to be accompanied by a design statement, and there are restrictions on certain permitted development rights.

The original descriptions given in the 1978 report *Scotland's Scenic Heritage* (Countryside Commission for Scotland, 1978), which lead to the designation of NSAs, may be found in the appendices of *The Special Landscape Qualities of the Cairngorms National Park* (Scottish Natural Heritage & Cairngorms National Park Authority, 2010):

www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1520

Special Qualities

In 2010 work was conducted to identify the 'Special Qualities' of the Cairngorms National Park's landscape (Scottish Natural Heritage & Cairngorms National Park Authority, 2010). This work identified the qualities that make the landscape and scenery of the area special and hence underpins the reason for the designation of both the National Park and the National Scenic Areas within it. The work should make it easier to direct future landscape change so that the appeal and value of the National Park can be passed on to future generations. The work also provides a solid basis for any activity designed to promote the area, whether to residents, businesses or visitors. Full details may be found in *The Special Landscape Qualities of the Cairngorms National Park* (Scottish Natural Heritage & Cairngorms National Park Authority, 2010):

www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1520

Table 8 Summary of the special landscape qualities of the Cairngorms National Park (Scottish Natural Heritage & Cairngorms National Park Authority, 2010).

General Qualities
➢ Magnificent mountains towering over moorland, forest and strath. ➢ Vastness of space, scale and height. ➢ Strong juxtaposition of contrasting landscapes. ➢ A landscape of layers, from inhabited strath to remote, uninhabited Upland. ➢ 'The harmony of complicated curves'. ➢ Landscapes both cultural and natural.
The Mountains and Plateaux
➢ The unifying presence of the central mountains. ➢ An imposing massif of strong dramatic character. ➢ The unique plateaux of vast scale, distinctive landforms and exposed, boulderstrewn high ground. ➢ The surrounding hills. ➢ The drama of deep corries. ➢ Exceptional glacial landforms. ➢ Snowscapes.
Moorlands
➢ Extensive moorland, linking the farmland, woodland and the high tops. ➢ A patchwork of muirburn.
Glens and Straths
➢ Steep glens and high passes. ➢ Broad, farmed straths. ➢ Renowned rivers. ➢ Beautiful lochs.

Trees, Woods and Forests
➢ Dark and venerable pine forest. ➢ Light and airy birch woods. ➢ Parkland and policy woodlands. ➢ Long association with forestry.
Wildlife and Nature
➢ Dominance of natural landforms. ➢ Extensive tracts of natural vegetation. ➢ Association with iconic animals. ➢ Wild land. ➢ Wildness.
Visual and Sensory Qualities
➢ Layers of receding ridge lines. ➢ Grand panoramas and framed views. ➢ A landscape of many colours. ➢ Dark skies. ➢ Attractive and contrasting textures. ➢ The dominance of natural sounds.
Culture and History
➢ Distinctive Planned towns. ➢ Vernacular stone buildings. ➢ Dramatic, historical routes. ➢ The wistfulness of abandoned settlements. ➢ Focal cultural landmarks of castles, distilleries and bridges. ➢ The Royal connection.
Recreation
➢ A landscape of opportunities. ➢ Spirituality.

Wildness

Wildness is a quality experienced by people when visiting places of a certain character. Measuring wildness is inherently difficult, as people respond differently according to their personal experience and their expectations of a place. However, an exercise carried out by SNH considered wildness through four physical attributes being present, which they measured and mapped. These attributes were:

- The perceived naturalness of the land cover;
- The ruggedness of the terrain which is therefore challenging to cross;
- Remoteness from public roads, ferries or railway stations; and
- The visible lack of buildings, roads, pylons and other modern artefacts.

These four attributes were then combined to produce a map of relative wildness of the whole of Scotland (**Figure** 41).

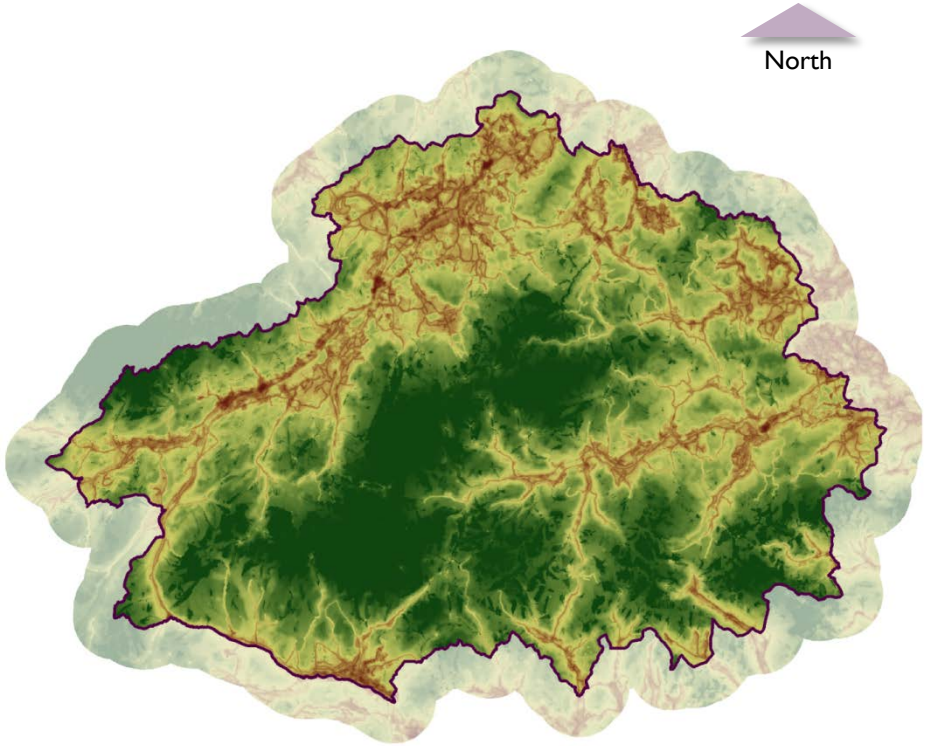


Figure 41 Relative wildness of Scotland (composite of Figures 110, 111, 112 and 113).

Scale: 1:700,000

Wild Land

Based on the work carried out to measure relative wildness, SNH published a new map of wild land areas, which represent the most extensive areas of high wildness in Scotland.

Around 2,100 km^2, or 46%, of the Cairngorms National Park has been identified as 'wild land' as defined by its perceived naturalness, rugged or challenging terrain, remoteness from public mechanised access and lack of built modern artefacts (Scottish Natural Heritage, 2014).

Five areas have been identified within the National Park (**Figure**), namely:

14. Rannoch - Nevis - Mamores - Alder;
15. Cairngorms;
16. Lochnagar – Mount Keen;
19. Braeroy - Glenshirra - Creag Meagaidh; and
20. Monadhliath.

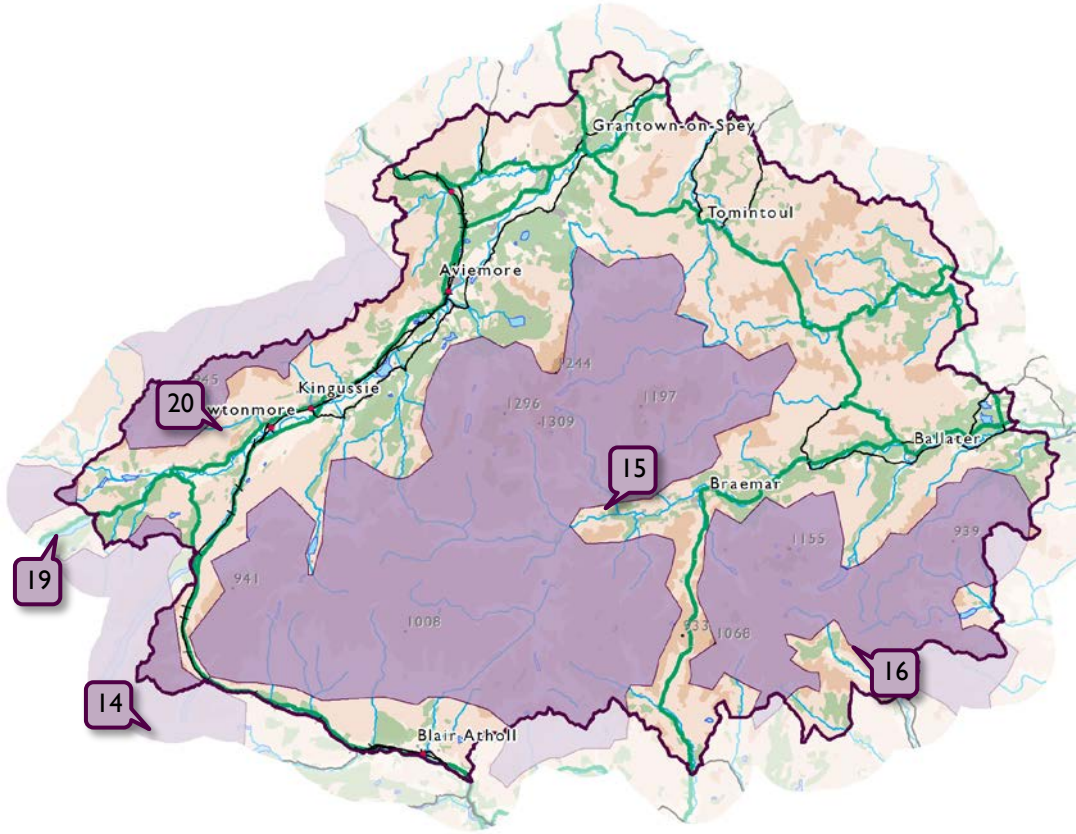


Figure 42 Wild land areas in the Cairngorms National Park. Scale: 1:700,000

Areas 15 and 16 are almost entirely located within the National Park, while the other three only just overlap its boundary.

These wild and remote areas have a distinct and special character, which is increasingly rare to find. A key component of Scotland's identity, they bring significant economic benefits, attracting visitors and tourists. Many people derive psychological and spiritual benefit from their existence, and they provide increasingly important havens for Scotland's wildlife (Scottish Natural Heritage, 2014).

Wild land is described in the National Planning Framework (NPF) (Scottish Government, 2014) as a "*…nationally important asset*" (p. 42) and according to SPP (Scottish Government, 2014), "*Plans should identify and safeguard the character of areas of wild land…*". The CFS will therefore need to take account of these areas.

Cultural Heritage

Historic Landscape

> "*The context or setting in which specific historic features sit and the patterns of past use are part of our historic environment. The historical, artistic, literary, linguistic, and scenic associations of places and landscapes are some of the less tangible elements of the historic environment. These elements make a fundamental contribution to our sense of place and cultural identity.*"
>
> Historic Scotland (2011).

The landscape we see today is the endpoint of a long period of evolution, involving a complex interplay of the natural elements of climate, geology, geomorphology, soil development, vegetation succession and herbivore impact – and with a rich overlay of human elements linked to settlement, transport, farming and forestry. Similarly, it should be expected that the landscape will continue to evolve in future in response to on-going social, economic and environmental change (Scottish Natural Heritage & Cairngorms National Park Authority, 2010).

Similar to the rest of rural Scotland, the landscape of the National Park was transformed during the late-18th and 19th centuries, and its present character was established at this time. The Improvement, as this period was known, resulted in a revolution in the agricultural practices of the area, with the landscape reorganised as regular fields were laid out, farm steadings replaced, farms amalgamated into larger units and improved cropping regimes were introduced alongside other measures to improve productivity, such as underground drainage. In the Uplands, the reorganisation saw the wholesale depopulation of the large areas to create extensive sheep walks and shooting estates (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001) (Dalglish & Tarlow, 2012).

Prior to this the pattern of settlement was dominated by multiple-tenancy farms, within which houses were usually clustered together in small townships, with ridged fields, which had grazing grounds beyond. These townships and their field systems are by-far the most extensive archaeological remains in the National Park, and reflect the zenith in the area's population during the 18th century (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001) (Dalglish & Tarlow, 2012).

There is very little remaining evidence across the National Park for settlement pre-dating the 18th or perhaps the 17th century. Indeed beyond the few castles, towers and churches for which medieval dates can be suggested, evidence for medieval settlement is almost non-existent. It is likely that the pattern of medieval settlement largely followed that of the present day and therefore, much is likely to have been lost due to development and intrusive agricultural practices, such as ploughing (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001) (Hall & Price, 2012). This does not mean however that further evidence does not exist, and appropriate measures should be taken to investigate sites prior to the commencement of future land-use changes.
The distribution of prehistoric monuments largely lies in a zone of survival beyond he fringes of the Improvement and pre-Improvement remains. The episodes of settlement are difficult to differentiate within the National Park, and therefore the term 'Prehistoric' is often used to describe a period starting around 9,000 years ago in the Mesolithic to around AD 1000. Overall there was a spread of human activity across the area during this period, though evidence suggests that the focus of settlement was in the main Glens and a cycle of

expansion and contraction in the Uplands as the prevailing climate fluctuated (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001).

Owing to the transitory nature of the Mesolithic populations, evidence of occupation during this period is scarce. It is not until the Neolithic, beginning around 4,000 BC, that people began to build the structures, such as chambered cairns and stone circles, that we still see today. Bronze Age burial monuments from after 2000 BC can also be found, and evidence of settlement from this period is more common. From around 1000 BC Bronze age patterns of settlement a burial and ritual monument cease and the primary evidence for occupation takes the form of settlement and landuse. Fortified enclosures such as Dun-da-lamh near Laggan, date from this period (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001) (Saville & Wickham-Jones, 2012).

Archaeological evidence from around AD 500 to AD 1000 is rare, although some buildings of a sub rectangular Strategy, cemeteries, cropmarks and earthworks thought to date from this period have been identified. Other more visible monuments of this period are the sculptured stones, in particular the cross-slabs, which illustrate the establishment of Christianity in the area (Royal Commission on the Ancient and Historical Monuments of Scotland & Historic Scotland, 2001) (Sheridan & Brophy, 2012) (Downes, 2012) (Hunter & Carruthers, 2012)

This archaeological evidence is of great cultural significance because it relates to areas or periods for which there are no written records and is therefore of fundamental value in understanding the development of the current landscape. The historic environment makes a special contribution to the landscape of the National Park through the story it tells of past history, through providing a human scale to the dramatic natural environment and through vividly demonstrating the tenacity and strength of the human spirit in the face of difficult circumstances. This evidence of historic land use is consequently an important quality of the landscape of much of the National Park (Scottish Natural Heritage & Cairngorms National Park Authority, 2010).

Information about the National Park's historic environment is available from the Historic Environment Scotland's Historic Land Use Map:

www.hla.rcahms.gov.uk

The map uses simple annotations to show how the landscape has changed over time, giving the user a tool to decipher the broad elements of the historic environment.

HES also offer an interactive map of archaeological and architectural sites in Scotland, which acts as a portal to more detailed information held by various partners:

www.pastmap.org.uk

Scheduled Monuments

Scheduled Monuments (SMs) are nationally important sites, buildings and other features of artificial construction given legal protection under the Ancient Monuments and Archaeological Areas Act 1979 (Historic Scotland, 2013). There are 110 SMs recorded within the National Park covering 6 of the 8 periods recorded. They include chambered burial cairns and associated stone circles of late Neolithic age; examples of Iron Age defensive remains such as the aforementioned Dun-da-lamh hill fort; Pictish remains such as the 8th century Loch Kinnord Cross Slab; military structures such as the 18th century Hanoverian fort of Ruthven; and industrial remains such as the 18th / 19th century ironstone mine-crushing mill at the Well of Lecht (Cairngorms National Park Authority, 2006).

Further information on SMs may be found on Historic Environment Scotland (HES) (formerly Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland) website:

www.historic-scotland.gov.uk/index/heritage/searchmonuments.htm

Designated Landscapes and Gardens

Designed gardens and landscapes form a relatively small part of the National Park's landscape, with the majority being country house gardens and policies. Components include woodlands, parklands, meadows, water features, glass houses, pinetums, kitchen gardens, formal gardens, avenues, drives and approaches, architectural features, statuary and vistas (Cairngorms National Park Authority, 2006).

'*The Inventory of Gardens and Designed Landscapes in Scotland*', which is maintained by HES, lists 11 gardens and designed landscapes within the National Park (**Figure**):

Aberdeenshire

- Balmoral Castle
- Candacraig House
- Glen Tanar
- Invercauld

Highland

- Aultmore
- Castle Grant
- Doune of Rothiemurchus
- Inshriach Nursery
- Kinara

Perth and Kinross

- Blair Castle
- Falls of Bruar

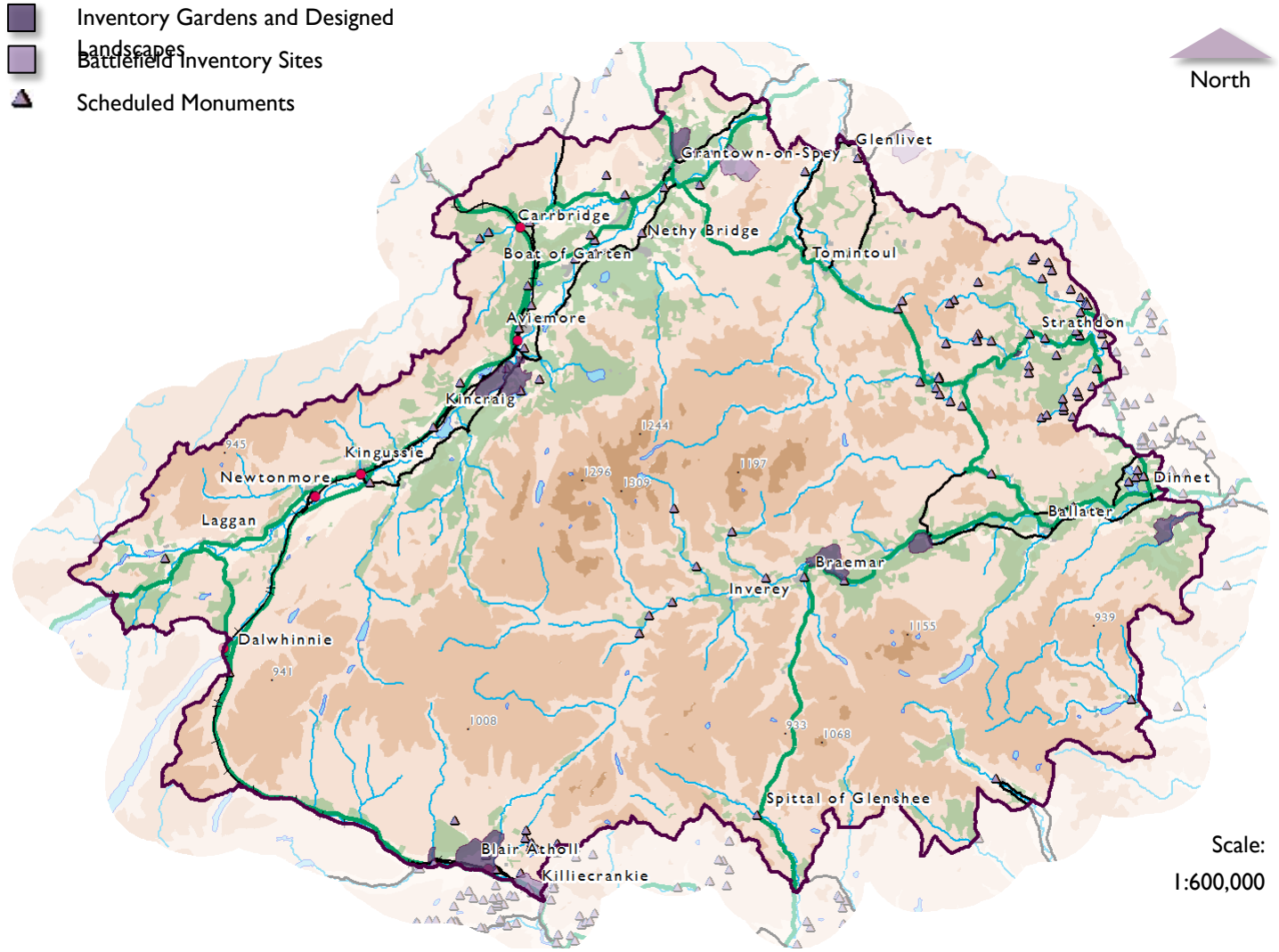


Figure 42 Historic Designations in the Cairngorms National Park.

The Inventory is a list of sites that meet the criteria for defining national importance, as published in the Scottish Historic Environment Policy (Historic Scotland, 2011, pp. 81-82). The effect of proposed development on a garden or designed landscape is a material consideration in the determination of Planning applications.

With the exception of Inshriach Nursery, which is a specimen nursery, all other Inventory gardens and designed landscapes relate to country houses and estates.

While the Inventory is concerned with historic landscapes of national importance, there are other historic landscapes that are of more local significance. The Cairngorms National Park Historic Designed Landscapes Project (Peter McGowan Associates, 2013) identifies 33 historic and designed landscapes within the National Park and provides information about the history and context of each (**Figure 43**).

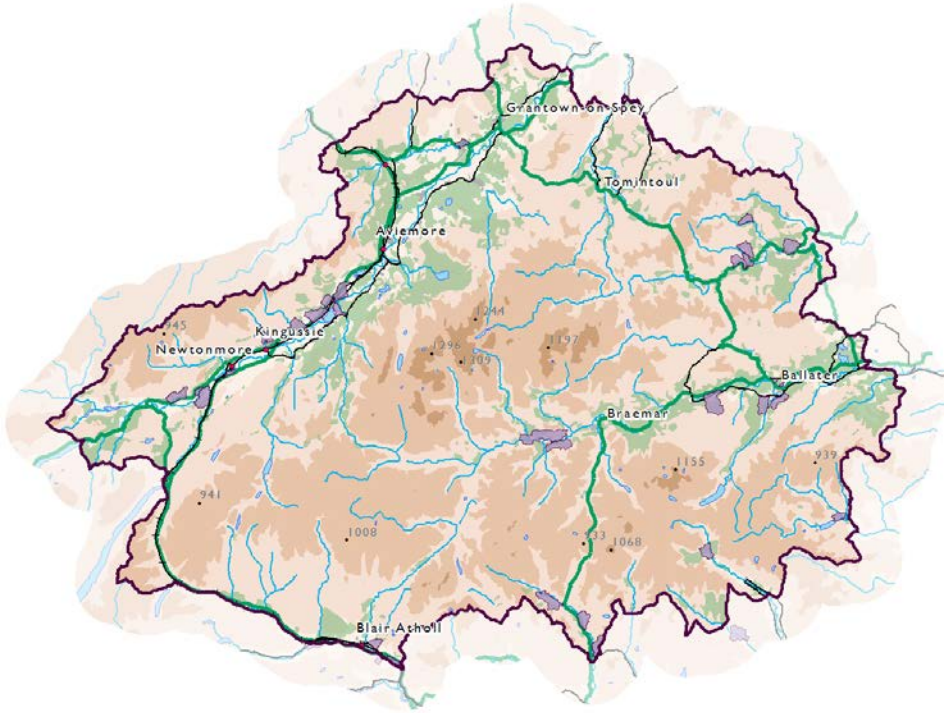


Figure 43 Historic and designed landscapes within the Cairngorms National Park (Peter McGowan Associates, 2013.

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Scale: 1:700,000

Although not statutory designations and localised in their impact, the designed landscapes in the National Park can be seen to make a significant contribution to landscape character through their buildings, policy woodlands, parkland, surrounding Plantations and fields. While some are comparatively isolated, and stand out in the landscape through their contrast with their mountainous setting, others benefit from their proximity to neighbouring landscapes, as Strathdon and around Kingussie, where they can be seen to have a group value. Although the landscapes can be categorised to some extent by their period, style or other characteristics, each one has a different story to tell, depending on the circumstances of its creation (Peter McGowan Associates, 2013).

Detailed information on the landscapes and gardens may be found on HES' website:

www.historic-scotland.gov.uk/index/heritage/gardens.htm

Battlefields

Historic battlefields make a distinctive contribution to an area's sense of place and history, both locally and nationally. They are a superb resource for education, helping us understand why significant events in history unfolded as they did and providing a tangible link to some of the key figures of history. The ground on which the battles were fought has enormous potential for attracting tourists, as well as for general recreation, allowing visitors to experience the site of a dramatic historical event for themselves and imagine the past (Historic Scotland, 2011).

'*The Inventory of Historic Battlefields*', which is maintained by HES, lists 2 designated battlefield sites within the National Park:

- Battle of Cromdale (1st May 1690)
- Battle of Killiecrankie (27th July 1689)

The former battlefield is in Highland, while the latter falls within Perth and Kinross. The site of the Battle of Glenlivet (3rd October 1595) in Moray, falls just outside of the National Park's boundary. It should be noted that not all battlefields within the National Park are listed in the Inventory, with the sites of the Battle of Invernhavon (1370 or 1386) and Battle of Culblean (30th November 1335) being important examples.

The Inventory is a list of nationally important battlefields in Scotland that meet the criteria published in Scottish Historic Environment Policy (Historic Scotland, 2011, pp. 83-85). It provides information on the sites in it to raise awareness of their significance and assist in their protection and management for the future. It is a major resource for enhancing the understanding, appreciation and enjoyment of battlefields, for promoting education and stimulating further research, and for developing their potential as attractions for visitors. The effect of proposed development on an Inventory Battlefield is a material consideration in the determination of Planning applications (Historic Scotland, 2011).

Detailed information on Inventory Battlefields may be found on HES' website:

www.historic-scotland.gov.uk/index/heritage/battlefields.htm

Built Heritage

Historic structures are a highly visible and accessible element of the Cairngorms National Park's rich heritage. The National Park is home to a wealth of historic buildings which cover a wide range of functions and periods and together chart the history of the nation. They cross all boundaries of life, from education to recreation, defence, industry, homes and worship. Much of the area's social and economic past and its present are expressed in these exceptional buildings (Historic Scotland, 2007).

Towns and Conservation Areas

Planned towns are a feature of 18th and 19th century Scotland, and the National Park is home to five of importance, namely Ballater, Blair Atholl, Tomintoul, Grantown-on-Spey and Kingussie. The latter three were created as market towns for the surplus food that resulted from higher productivity on the increasingly sophisticated farms. Town plans were drawn up and often specified the type of house which the landowner wished to encourage. Commodious permanent houses built of stone with slated roofs, glazed windows and usually comprising a single storey and attic with three or five rooms were often indicated, all placed within a rational and carefully thought out street Strategy. This is in direct contrast to the ad hoc dark, single-storey, single-room dwellings made from turf or rubble with a thatched roof, which would have been more typical in villages at this time (Historic Scotland, 2007).

Ballater, Grantown-on-Spey and Blair Atholl have been designated as Conservation Areas, which are protected under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. The National Park also has a further two Conservation Areas within its boundary at Braemar and Inverey Of these, only Blair Atholl benefits from a Conservation Area Appraisal (Perth and Kinross Council, 2007), which is available on the Council's website:

www.pkc.gov.uk/blairatholllconservationarea

Linguistic Heritage

Cultural heritage does not simply manifest itself in the physical remains of past actions or in the evolving morphology of the built form. It also exists as a shared consciousness, which is consumed and reproduced in the mundane interactions of everyday life. Language, be it spoken, or as an elemental feature of the cultural landscape, is a potent vessel in which this heritage is maintained and reproduced. Ultimately, it is a driving force in shaping the way we see the world and the way the world sees us.

Over the past few decades, concern about the global scale and speed of language loss has emerged as a strong theme in the work of a growing number of socio-linguists (Crystal, 2000; Romaine & Nettle, 2000; Skutnubb-Kangas, 2000). UNESCO estimates that there are currently around 3,000 endangered languages in the world (Moseley, 2010). Many of these are undergoing '*language shift*', as speakers cease using a minority language and choose to use a majority language in its place (Fishman, 1991). While intergenerational transmission is typically seen as the most significant means of language transmission, there are many other factors that may play a part, including economic benefit, perceived status, educational provision and so on (Clyne, 2004; Grin, 2007). As such, the matter of language change has found its way into the policy streams of many tiers of many governments (Ager, 2001; Wright, 2004). Biological and ecological metaphors abound within the field of socio-linguistics, so to say that the emphasis has moved from the *lassaiz-faire* stance of 'survival of the fittest' to the more interventionist stance position of 'preservation of the species' (Edwards & Newcombe, 2005) describes the evolving state of Scottish language policy and legislation well.

Scotland's linguistic history is complex (MacKinnon, 2000) with the current situation resulting from hundreds of years of population movement and cultural interaction. Located near the centre of the country, and owing to the restrictive nature of its mountainous terrain, the Cairngorms National Park occupies a position where many of these linguistic and cultural differences intersect.

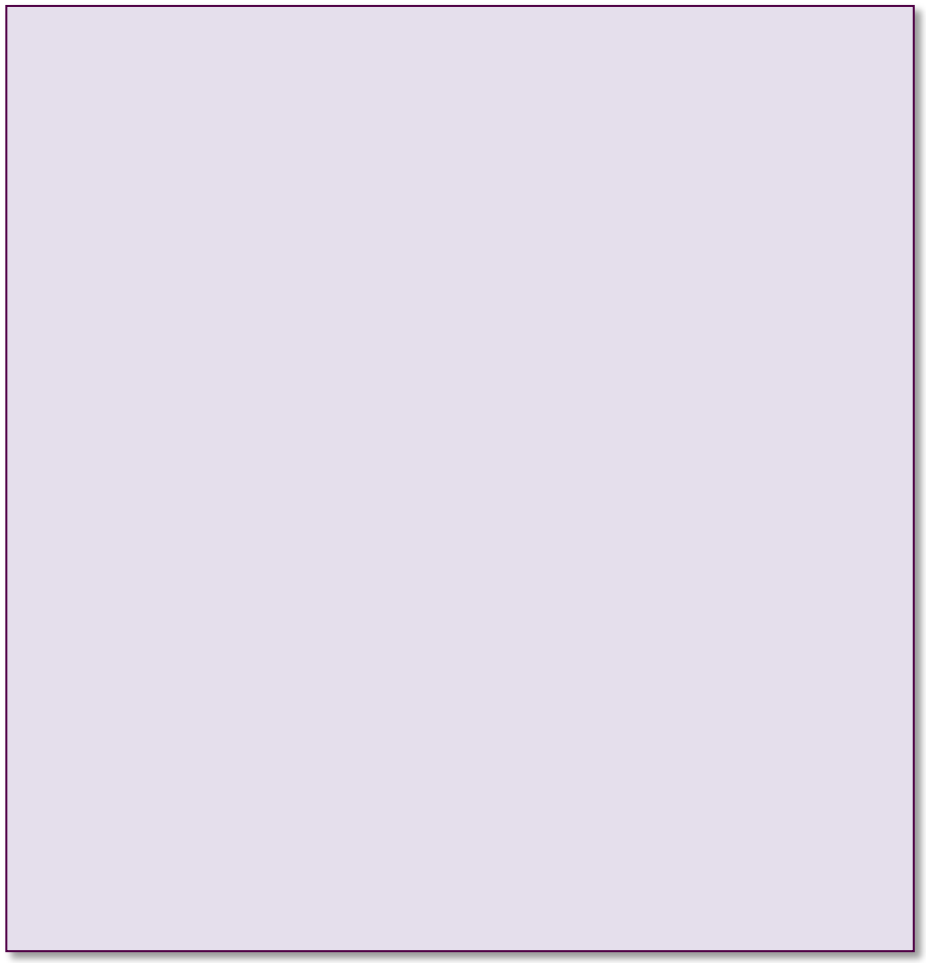
Within the National Park two minority languages, both of which have undergone significant language shift towards English, are still spoken, namely Scottish Gaelic and Scots (MacKinnon, 1991; Withers, 1984; Smith, 2000). The languages belong to contrasting linguistic families, the former being a member of the Goidelic branch of the Insular Celtic family (Price, 2000), the latter being a part of the same dialect continuum as English (Smith, 2000).

Gaelic, which was bought to Scotland from Ireland in around AD 500, was once spoken throughout the area. Though the language is now spoken by but a minority in the National Park, it is a visible and inseparable part of the area's identity, as it continues to dominate the names of places, both built and natural. Nevertheless, it is classified by UNESCO as being 'Definitely endangered'[5] (Moseley, 2010). Currently, the CNPA seeks to support the Gaelic language through

its Gaelic Language Strategy (Cairngorms National Park Authority, 2013).

Scots, which takes the form of its Northern / North-eastern dialect, Doric (McColl Millar, 2007), is also spoken throughout the National Park, but is stronger in the east where the influence of the lowlands is greatest. The language has also seen a fall in use since its apex in the Medieval period (Smith, 2000), with around 5,400 (29.3%) of the National Park's population claiming to be able to speak it in 2011). It is classified by UNESCO as being 'Vulnerable'.

A sense of place may be defined at its simplest as the human interpretation of space (Tewdwr-Jones, 2002) and therefore the linguistic landscape, be it in the form of visible displays on advertisements or signage, or interpreted through the names written on maps or in literature, may form a strong part of this interpretation (CoUpland, 2012). Place-names, for example, can offer a strong insight into the culture, history, environment and wildlife of an area.



Topic 8: Population and Human Health

Population

Population statistics within the Cairngorms National Park are calculated using an aggregate of data zones that roughly correspond with its boundary.

Population and Households

In 2014[6] the estimated population of the National Park was 18,594, with 9,186 males and 9,408 females.

The National Park has a distinctly different population profile to the national, with a higher proportion of people falling within the 55 to 74 age cohorts. When compared to other rural parts of Scotland, the Cairngorms National Park also has a relatively high proportion of residents in the 10 to 29 age cohorts (see NRS (2014). This is thought to be due to the relatively high number of opportunities for employment in the outdoor and tourism sectors. There is also a spike in the 10 to 15 year cohort, which is replicated across Scotland as a whole.

Human Health

Life Expectancy

Human Health covers a wide range of issues, many of which have strong relationships with other topic areas. Life expectancy is a good indicator of the overall health of a population. While there is no official data available for life expectancy specifically within the National Park, quantitative reasoning, based on statistics available for Local Authorities, Health Board Areas, SIMD deciles and Urban / Rural Categories, may be used to gain a reasonable estimate.

Taking the Local Authorities and Health Board areas that cover the National Park's areas as a starting point all have life expectancies that are above the Scottish average. Estimates range from 77.6 to 79.3 for males and 81.4 to 82.8 for females and it is not unreasonable to assume that the National Park's overall life expectancy falls somewhere within this range.

Estimates may also be derived from the SIMD 2012; according to NRS (2014), male and female life expectancy increases and the gap between male and female life expectancy decreases as the level of deprivation decreases. Consequently, NRS have estimated life expectancy according to SIMD decile. Based on the position of the National Park's data zones within the SIMD therefore, an estimate of its life expectancy may be derived. Furthermore, because data zones represent discreet geographies, potential variations in life expectancy across the National Park may be mapped (**Figure**).

It should be noted that the SIMD measures deprivation and not affluence, therefore the data displayed by **Figure** should not be translated as 'life expectancy of the rich versus that of the poor'. It should also be noted that NRS estimates are generalised and the criteria that result in an overall SIMD rank may vary greatly between data zones. The life expectancies presented therefore should not be viewed as geography specific absolutes, but as rough approximations based on national data.

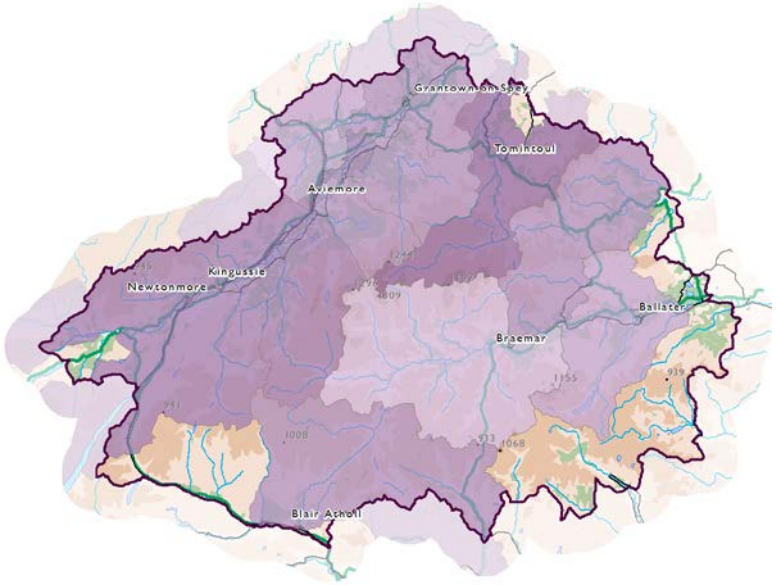


Figure 44 Life expectancy within the Cairngorms National Park by SIMD Decile. Based on NRS (2014).

Scale:
1:700,000

Estimating life expectancy via this means offers a range of 76.7 to 80.9 for males and 81.1 to 83.3 for females living within the National Park. This is a broader range than the estimate based on the Local Authorities and Health Boards, but is close enough to support the theory that the life expectancy falls within this initial estimate.

If the deprivation based estimates are weighted according to the population of the National Park's data zones, then the estimated life expectancy of the National Park is 79 for males and 82.3 females. This estimate is not unreasonable as it falls within 1% of figures for the Scottish Government's Urban Rural Classification areas, which estimates life expectancy for males to be 79.2 and females to be 82.6 in remote rural areas (National Records of Scotland, 2014), which the whole of the Cairngorms National Park is identified as.

Irrespective of the exact figures, it is possible to say with some confidence that the residents of the Cairngorms National Park have a greater life expectancy than the Scottish average and live around 6 to 9 years longer than people living in the most deprived parts of Scotland.

Health

Evidence suggests that the population in the National Park is healthier than the Scottish average. According to the 2011 Census, the proportion of people with long term health problems whereby their day-to-day activities are limited a lot was only 6.8% (Scotland 9.6%) while the proportion of people claiming very good to fair health was higher (96.6% compared to Scotland's 94.4%) and the proportion claiming bad to very bad health lower (3.4% compared to Scotland's 6.1%) (**Table**). This is supported by evidence from the proportion of Incapacity Benefit and Severe Disability Allowance claimants within the National Park, which in 2012 ranged between 1.1 and 1.8% of the

16+ population, compared to Scotland's 2.7 to 4.1%.

Table 9 Census health indices, 2011.

Indicator	CNP	Scot.
Long-term health problem or disability (Table LC3101SC)		
Day-to-day activities limited a lot	6.8%	9.6%
Day-to-day activities limited a little	10.2%	10.1%
Day-to-day activities not limited	83.0%	80.4%
General health (Table LC3102SC)		
Very good health	55.6%	52.5%
Good health	30.7%	29.7%
Fair health	10.3%	12.2%
Bad health	2.7%	4.3%
Very bad health	0.7%	1.3%
Provision of unpaid care (Table LC3301SC)		
Provides no unpaid care	90.9%	90.6%
Provides 1 to 19 hours unpaid care a week	5.7%	5.2%
Provides 20 to 34 hours unpaid care a week	0.8%	0.9%
Provides 35 to 49 hours unpaid care a week	0.6%	0.8%
Provides 50 or more hours unpaid care a week	2.0%	2.5%

Outdoor Recreation

Standardised measures of deprivation aside, there are many factors that can have an influence on a population's health and it is probable that the high quality environment described in this report is a contributory factors. Another factor is likely to be the ability of the population to easily access this environment for leisure and recreational purposes.

Significantly, the Cairngorms National Park is a world renowned area where both residents and visitors can enjoy an unparalleled range of outdoor recreation opportunities. People are able to explore the area on foot, in a wheelchair, on horse-back, on a bicycle or even in a boat or canoe, as long as they do so in a responsible manner, with respect for other people and for the environment, and in accordance with the Scottish Outdoor Access Code.

One important means of access is via the National Park's public footpath network, of which the Core Paths network plays a significant role (see **Figure** 45). The CNPA has a duty under the Land Reform (Scotland) Act 2003 to prepare a Core Paths Strategy. Section 17 (1) Act states that the core paths network should be: '… *sufficient for the purpose of giving the public reasonable access throughout the area*'.

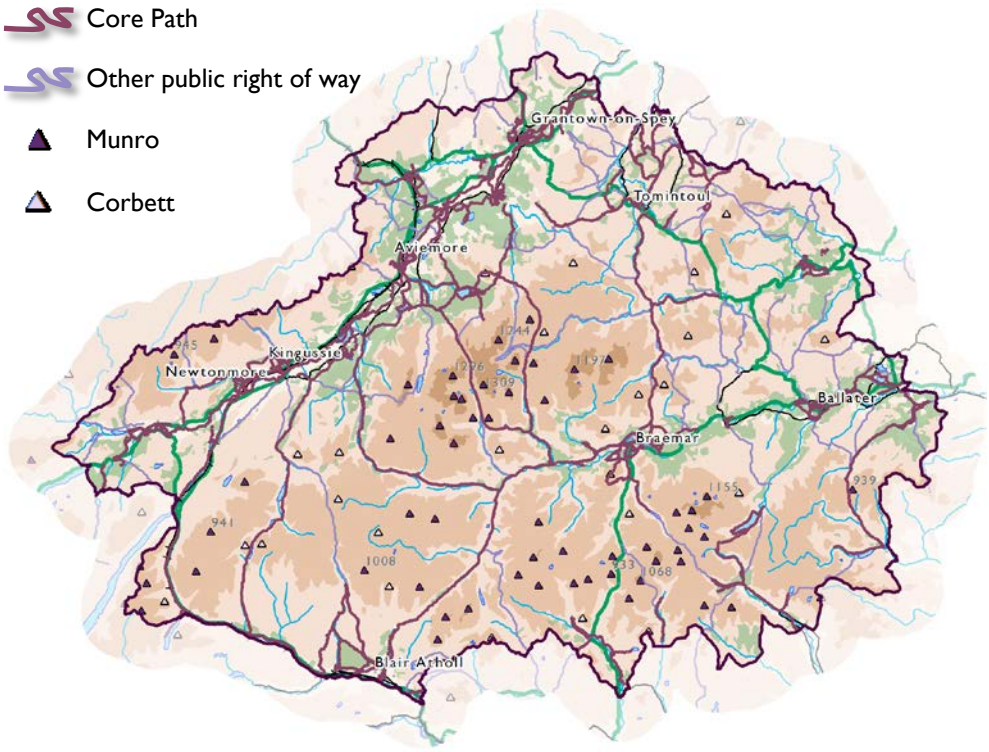


Figure 45 Public footpath network and 'listed' mountains of the Cairngorms National Park.

Scale: 1:700,000

The CNPA has recently published its Core Paths Strategy (2015), which was developed in Partnership with the Local Outdoor Access Forum and Inclusive Cairngorms. The aim of the Strategy is to help people enjoy and understand the special qualities of the National Park through the identification of outdoor access opportunities. The path network should satisfy the needs of visitors and local people to get around, and link to the wider path network and beyond.

The network is made up of a mixture of existing and new paths, which together provide a cohesive system. The National Park now has a network that totals 1,073km of core path, 88km of which is on water (River Spey). Furthermore, over 300km of the network has been signed and promoted with a further 100 or so km to be developed and improved.

The CNPA chairs and convenes the Active Cairngorms Partnership which includes NHS, SNH, Paths for All and SUSTRANS as increasing activity can relieve many conditions such as reducing stress and heart disease and improving mental health.

There are two dedicated bike trail centres in woodland within the CNP, one at Laggan Wolftrax and Bike Glenlivet at the Glenlivet Estate, both encompass areas of commercial forestry.

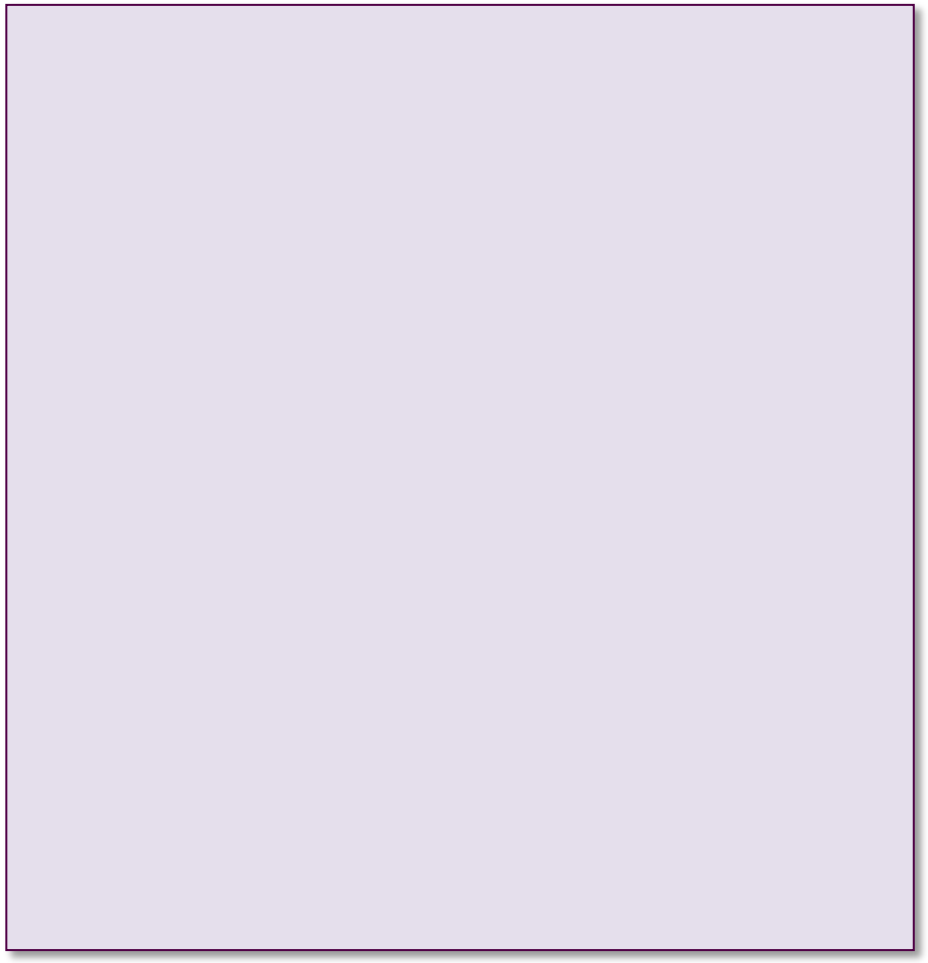
Visitors

There has been an overall increase in the number of visitors to the Cairngorms National Park since 2009 with 1.64 million visitors in 2014. Between 2012 and 2014, visitor numbers have increased by 8.6% and visitor days by 9.6% (STEAM, 2015).

Whilst the overall numbers have increased, there is still a strong seasonal trend in tourism, with the highest numbers of visitors in the summer months. A continuing challenge for the National Park is creating a more year round tourism economy, and the 2014 data shows some slight improvement in that area with a greater increase in visitors at off-peak times.

The Cairngorms Visitor Survey 2014/15 gathered a range of information about how visitors interact with the National Park. The survey has been repeated every five years since 2003/04 using the same methodology of 2,500 face to face interviews over a 12 month period in a range of locations across the National Park.

The survey found that the area's status as a National Park was of high importance for those deciding to visit the area, particularly for overseas visitors. This also varies considerably between the National Park areas where status is of greater importance to those visiting the Moray area.



Appendix 3: Boundaries and statistical areas used in the analysis of the Cairngorms National Park

Population and Demographics

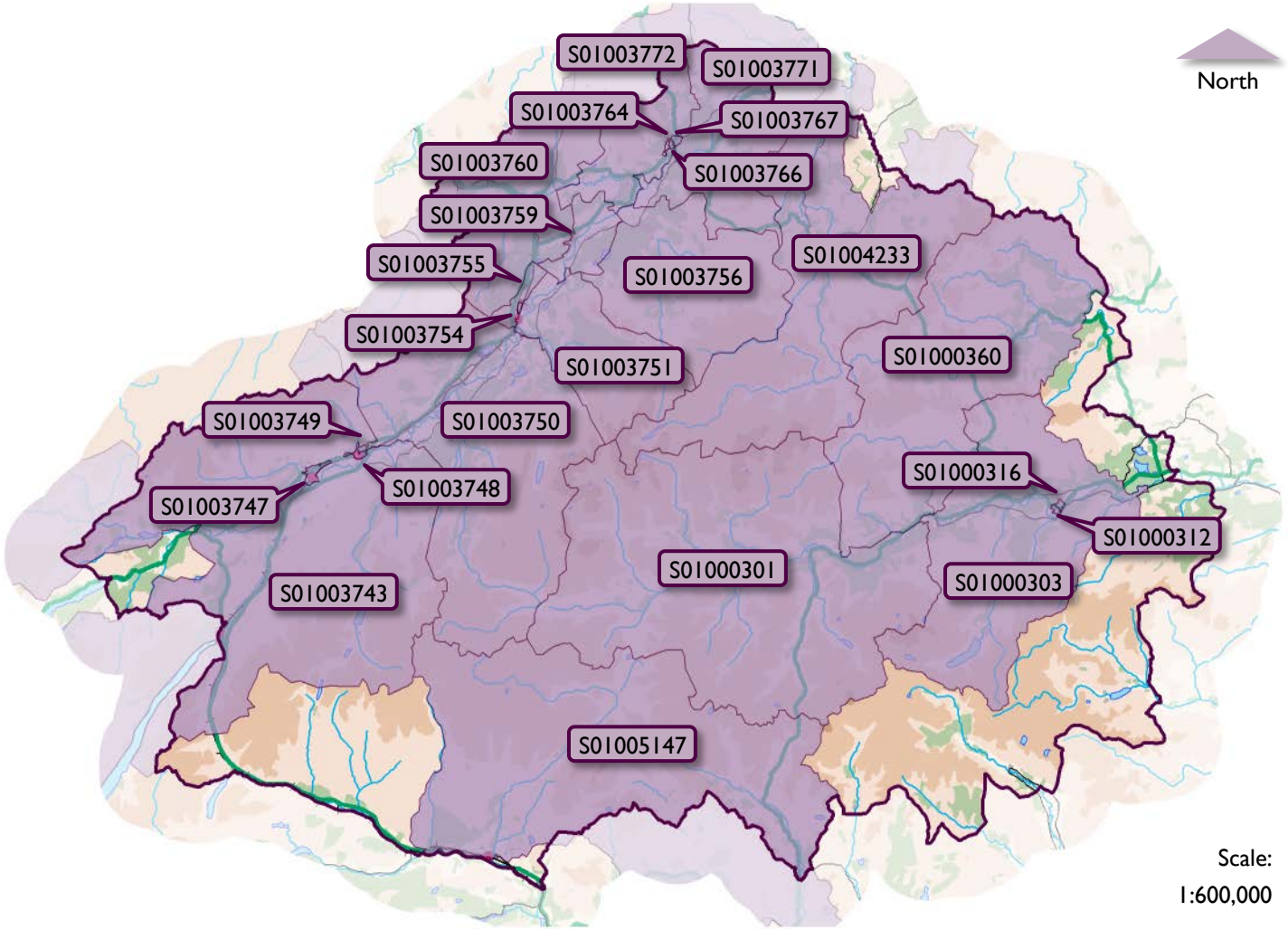
The population and demographic information contained within this publication is mostly based on data zones aggregated to a larger geographical area, which roughly corresponds with the area of the Cairngorms National Park.

Data zones are the standard small area geography used by the Scottish Government (SG). In general they have populations of between 500 and 1,000 residents. Data zone boundaries do not exactly match the National Park boundary and so, for the purpose of statistical analysis, data zones are included or excluded based on the 'population weighted centroid'.

The population weighted centroid is essentially the point in the area where population density is the same all around the point, or put more simply, the population 'centre of gravity' of the area. A data zone has been allocated to the National Park area if the population weighted centroid lies within it.

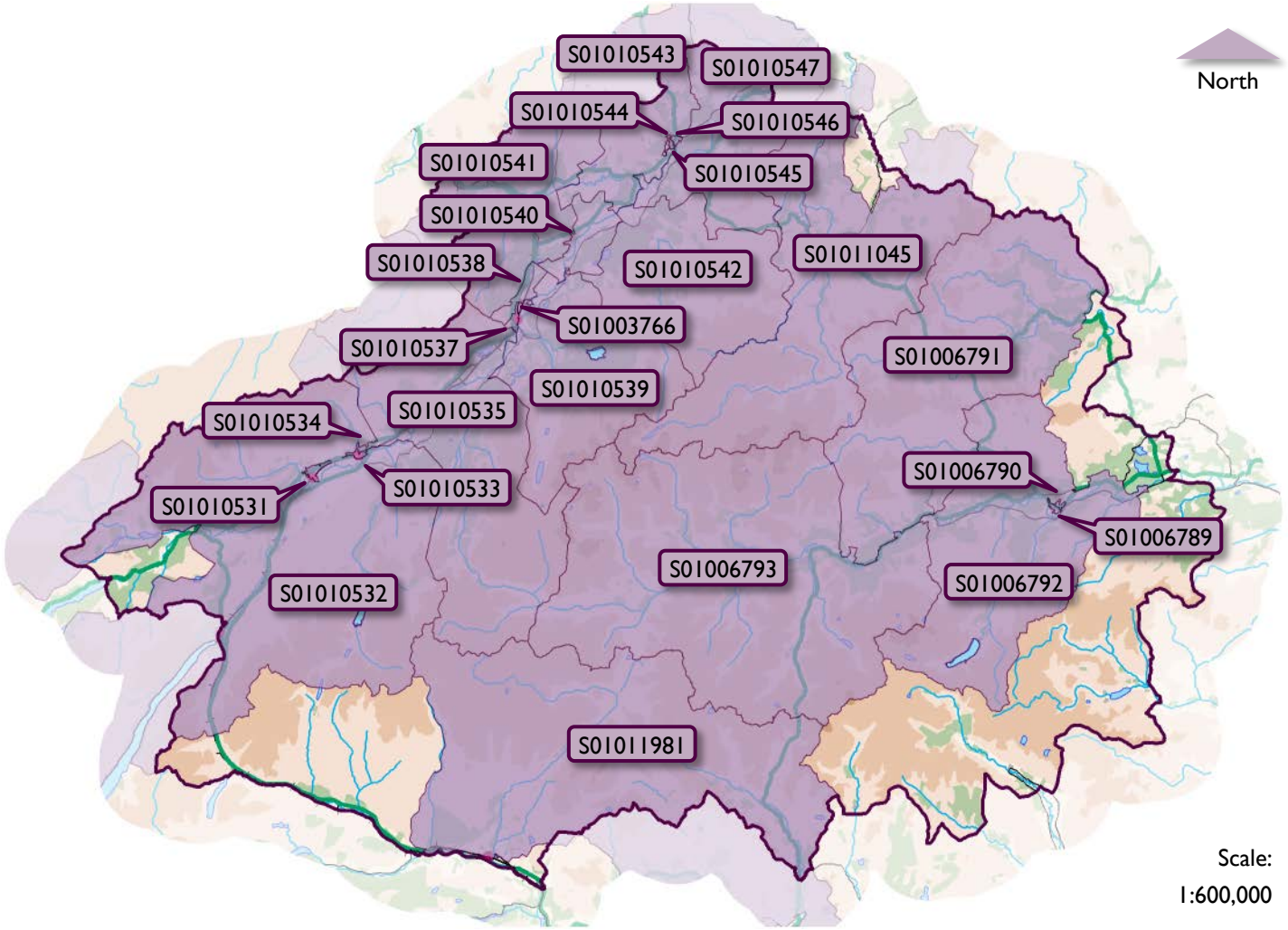
This is a standard procedure for assigning the population of a small geography to a large geography if the former does not wholly fit within the boundaries of the latter or lies across the border of two large geographies. This is the methodology used in National Records of Scotland's (NRS) population projections for National Parks and Strategic Development Plan Areas (National Records of Scotland, 2014), and while NRS has used a different geography in its most recent projections (National Records Scotland, 2016), it remains a useful methodology for building a consistent aggregate if the National Park.

It should be noted that the Scottish Government published revised 2011 Data Zones on 6 November 2014 and that these geographies replace the original 2001 boundaries used in the NRS population projections (National Records of Scotland, 2014). At a National Park level the changes are very minor with the 2011 data zone boundaries corresponding closely with those of the 2001 ones. This however means that within this document both 2001 and 2011 data zones are used, as at the time of writing large amounts of data was not yet available in for the revised data zones. Based on this methodology, the data zones shown in **Figure 5** and **Figure 6** have been chosen to represent the National Park.



2001 Scottish Data Zones		
	Aberdeenshire	S01000301 S01000303 S01000312 S01000316 S01000360
	Highland	S01003743 S01003747 S01003748 S01003749 S01003750 S01003751 S01003754 S01003755 S01003756 S01003759 S01003760 S01003764 S01003766 S01003767 S01003771 S01003772
	Moray	S01004233
	PKC	S01005147

Figure 5 2001 Scottish Data Zones.



2011 Scottish Data Zones		
	Aberdeenshire	S01006789 S01006790 S01006791 S01006792 S01006793
	Highland	S01010531 S01010532 S01010533 S01010534 S01010535 S01010536 S01010537 S01010538 S01010539 S01010540 S01010541 S01010542 S01010543 S01010544 S01010545 S01010546 S01010547
	Moray	S01011045
	PKC	S01011981

Figure 6 2011 Scottish Data Zones.

Though the actual National Park boundary does not precisely match the one derived from the data zones, the difference between the two is very small in terms of population. In 2012, data zone populations were estimated to be just 1.89% less than the overall National Park population (National Records of Scotland, 2014).

Notably, the National Park boundary does not coincide with the data zone boundary around Boultenstone and Dinnet to the east, Glen Clova to the south west, Glenlivet to the north east, and the area east of Loch Laggan. Consequently, these areas are omitted with the omission of the area around Glen Clova meaning that no part of the Angus Council area is included in the data zone boundary.

More detailed maps that show the location of population weighted centroids are available within the Scottish Neighbourhood Statistics - Boundary Mapping section of the SG website:

www.gov.scot/Topics/Statistics/sns/BoundMap

A paper describing the methodology for calculating data zone centroids can be found on the Scottish Neighbourhood Statistics - Reference Material page of the SG website:

www.gov.scot/Topics/Statistics/sns/SNSRef

Waterbodies

SEPA are the responsible authority for monitoring water quality in Scotland to the requirements set out by the WFD. The Directive requires all water features in a category (i.e. rivers, lochs, transitional waters, coastal waters and groundwater) above a certain size threshold to be defined as waterbodies. For Scotland, this was carried out using a combination of typology data and data on ecosystem health (from both SEPA data and consultation with external stakeholders). Waterbodies are by definition of the same typology and overall quality along their length. (Scottish Environment Protection Agency, 2007).

By their nature, waterbodies do not exactly match the National Park boundary. It is also clear that factors affecting a waterbody in the upper part of a catchment area may also affect other waterbodies in its lower part. Therefore, a judgment as to the waterbodies to include in the baseline for the National Park must be made. For the purpose of this analysis, all waterbodies located within or overlapping the National Park Boundary have been selected.

Table 11 Waterbodies within or overlapping the Cairngorms National Park.

River Spey Catchment Area		
Rivers		
23084	23115	23141
23085	23116	23142
23086	23117	23143
23090	23118	23144
23091	23119	23145
23092	23121	23146
23093	23122	23148
23094	23123	23149
23095	23124	23150
23096	23125	23151
23097	23126	23152
23100	23127	23638
23101	23128	23639
23102	23129	23640
23103	23130	23641
23104	23131	23907
23105	23132	23908
23106	23133	23909
23110	23134	23910
23111	23136	23913
23112	23137	23914
23113	23138	
23114	23140	
Lochs		
100181	100187	100195
100182	100189	100199
100183	100193	

River Dee Catchment Area		
Rivers		
23332	23351	23362
23339	23352	23363
23340	23353	23364
23343	23354	23365
23344	23355	23366
23345	23356	23367
23346	23357	23368
23347	23358	23372
23348	23359	23577
23349	23360	
23350	23361	
Lochs		
100192	100202	

River Don Catchment Area		
Rivers		
23294	23297	23299
23295	23298	23578

North Esk Catchment Area		
Rivers		
5702	5704	5722
5703	5721	5723
Lochs		
100209		

South Esk Catchment Area	
Rivers	
5800	5810
5801	5813

River Tay Catchment Area		
Rivers		
6523	6598	6608
6524	6599	6609
6536	6600	6610
6540	6601	6836
6541	6602	6911
6544	6603	6912
6545	6605	6914
6546	6606	6915
6552	6607	

River Lochy Catchment Area
Rivers
20347

River Deveron Catchment Area
Rivers
23187

Appendix 4: Consultation Responses to Scoping Report

Table 12 Responses to consultation on the Scoping Report and the actions taken in response.

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
Historic Environment Scotland	General	It is our understanding that the Cairngorms National Park Forest Strategy (CFS) 2018- 2038 will provide the framework for the expansion and management of forests within the Cairngorms National Park.	Comment noted.	No change to the SEA.
		HES note that the historic environment has been scoped into the assessment.	Comment noted.	No change to the SEA.
		On the basis of the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment subject to the detailed comments provided below.	Comment noted.	Individual comments addressed –see below
		You should include within your review of relevant PPS Our Place in Time – the Historic Environment Strategy for Scotland. Scotland's first ever Historic Environment Strategy is a high level framework which sets out a 10 year vision for the historic environment.	Comment noted	Document reference inserted into Appendix 1"Relevant PPS" of the CFS Environment Report
Scottish Natural Heritage	General	We agree with the scoping report that the implementation of the Forest Strategy has the potential for positive and negative impacts on nature and landscape interests within our remit.	Comment noted.	No change to the SEA.
		Content with the proposed scope, SEA objectives and	Comment noted.	No change to the SEA.

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		assessment framework.		
		Appendix 3 Environmental Baseline describes geological interests within the Park under Topic 5 Material Assets (page 99). However unfortunately there is no mention of geological interests in the main methodology section of the scoping report (eg Table 2 Summary of baseline information and main issues on page 19, Table 3 Scope of SEA on page 22, or Table 4 Proposed SEA objectives on page 27). This creates a risk that geological interests will be overlooked in the assessment for the Environmental Report. We therefore recommend that the methodology is revised to ensure it includes reference to geological interests within the Park so that inter-relationships, risks and opportunities are not overlooked.	The CNPA agrees with this suggestion	➢ **'Value, conserve and enhance geodiversity' has been inserted as a sub-objective within the SEA Environmental Report (Appendix 3)**
		For our interests, the two main potential issues that will need to be fully explored in the environmental assessment are: 1.where woodland expansion/regeneration/enhancement may have adverse impacts on protected areas (and wider biodiversity supporting/supported by them) We recommend that the Environmental Report considers these potential areas of	The CNPA agrees with the suggestion. Woodland creation schemes would only take place on designated sites where it meets the objectives of the site and would have no Likely Significant negative Effect on designated features. The creation of Forest	➢ **SEA Assessment includes a section on mitigation for Biosecurity and invasive species within Objective 6a Species & habitats**

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		tension and sets out proposed means of mitigation. Mitigation should aim to ensure that the positive intentions of the Strategy are optimised, while adverse environmental impacts are avoided or minimised. An effective monitoring strategy will also be an important part of ensuring that both predicted and unexpected impacts are identified and that mitigation is effective.	Habitat Networks has the potential to allow the spread of invasive non-natives, but to mitigate this is the creation of functioning ecological networks that have greater resilience against invasive species and disease. For example controlling grey squirrel populations with a healthy pine marten population; and, reducing the likelihood of widespread disease issues by encouraging natural regeneration of diverse species woodlands. The CNPA feel that on balance there are greater benefits to be gained from the creation of Forest Habitat Networks than not but that appropriate mitigation should be applied.	

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		2. How to manage woodlands for recreation whilst avoiding damage to important habitats and/or disturbance of sensitive species such as Capercaillie	The CNPA agrees that this should be considered and the strategy encourages the use of Recreational Access Management Plans to ensure that the needs of timber producers, visitors, sporting interests and conservation are balanced. The development of any new paths through core Capercaillie areas or recreational centres for example would require assessment through the HRA process before permission was granted.	No change.
SEPA	Relationship with other plans and policies	Some of the PPS included in the Scoping Report have themselves been subject to SEA. Where this is the case you may find it useful to prepare a summary of the key SEA findings that may be relevant to the Cairngorms Forest Strategy. This may assist you with data sources and environmental baseline information and also ensure the current SEA picks up environmental issues or mitigation actions which may	Yes we have used summaries from the recently completed SEA for the National Park Partnership Plan to inform data collection	No change

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		have been identified elsewhere.		
SEPA	Baseline info	It has been identified in the scoping report that SEPA holds significant amounts of environmental data which may be of interest in preparing the environmental baseline, identifying environmental problems, and summarising the likely changes to the environment in the absence of plans, policies or strategies, all of which are required for the assessment. We confirm many of these data are now readily available on SEPA's website.	We have used and referenced SEPA information in our baseline information	Noted
SEPA	Baseline Info – Topic 3	In relation to Topic 3 Water, the scoping report covers water quality well and refers to SEPA data where appropriate. We welcome reference to the EU Water Framework Directive (WFD) however, we recommend the SEA widen scope to include all aspects of Scotland's River Basin Management Plan. In addition to water quality and water quantity, we request morphology/physical condition, fish barriers and invasive non-native species are also considered. These five themes are reflected in Scotland's river basin plans and should also be referred to in the SEA.	We will refer to the five themes	Included within the SEA
SEPA		SEPA is currently reviewing how we classify rivers for morphology and new data should be available early in 2018. There will be some changes to waterbody	Riparian planting is an objective for the CFS, an indicative riparian zone	No change

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		classification next year. However, if this is not available before the publication of the Environmental Report, we request waterbodies morphology improvements to be considered generally. This includes riparian zone, crossing points (all – not just bridges but also culverts), quality of in-stream habitat and presence of INNS on the bankside.	has been placed around all waterbodies within the CNP. We discuss how riparian planting can also help stabilise banks improving river morphology but think that bridges and culverts are outside the scope of the strategy	
SEPA		We consider that the environmental problems described generally highlight the main issues of relevance for the SEA topics within our remit	Noted	No Change
SEPA		We note that alternatives are still being considered. Any reasonable alternatives identified during the preparation of the plan should be assessed as part of the SEA process and the findings of the assessment should inform the choice of the preferred option. This should be documented in the Environmental Report	Noted	Reasonable Alternatives have been included within the Environmental Report
SEPA		Where it is expected that other plans, programmes or strategies are better placed to undertake more detailed assessment of environmental effects this should be clearly set out in the Environmental Report.	Noted	No change

<table>
<tr><th>Consultation Authority</th><th>Section of Scoping Report</th><th>Comment</th><th>Response of CNPA</th><th>Change to SEA</th></tr>
<tr><td>SEPA</td><td>Mitigation</td><td>We welcome the commitment to use the SEA as a way to improve the environmental performance of individual aspects of the final CFS and include enhancement of positive effects as well as mitigation of negative effects where possible.</td><td>Noted</td><td>No change</td></tr>
<tr><td>SEPA</td><td>Mitigation</td><td>We would encourage you to be very clear in the Environmental Report about mitigation measures which are proposed as a result of the assessment. These should follow the mitigation hierarchy (avoid, reduce, remedy or compensate). Where the mitigation proposed does not relate to modification to the plan itself then it would be extremely helpful to set out the proposed mitigation measures in a way that clearly identifies: (1) the measures required, (2) when they would be required and (3) who will be required to implement them. The inclusion of a summary table in the Environmental Report such as that presented below will help to track progress on mitigation through the monitoring process.
<table>
<tr><th>Issue / Impact Identified in ER</th><th>Mitigation Measure</th><th>Lead Authority</th><th>Proposed Timescale</th></tr>
</table>
</td><td>Noted</td><td>Mitigation measures have been incorporated in the format suggested</td></tr>
</table>

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
		Insert effect recorded in ER | Insert mitigation measure to address effect | Insert as appropriate | Insert as appropriate etc | etc | etc | etc		
SEPA	Enhancements	Following on from our comments above in section 2, the draft report lists all waterbodies with Good and High status however the Cairngorm Forest Strategy area also includes water bodies at less than good status. As stated above these should also be included in baseline data to identify possible enhancement opportunities the Forest Strategy may help to deliver.	Yes we will include a section on this	Section added
SEPA	Monitoring	We are pleased to note the commitment to monitor the significant effects following adoption of the CFS in accordance with the Act and that the proposals for monitoring indicators will be confirmed in the Environmental Report.		
SEPA	Consultation	We are satisfied with the proposal for a 6 week consultation period for the Environmental Report.	Noted	No change
SEPA	Outcomes of	Whilst we note consultee comments will be	We will include a	This table incorporated

Consultation Authority	Section of Scoping Report	Comment	Response of CNPA	Change to SEA
	scoping exercise	considered and the SEA work amended where appropriate, we would find it helpful if the Environmental Report included a summary of the scoping outcomes and how comments from the Consultation Authorities were taken into account.	summary table of consultee responses	into Environmental Report

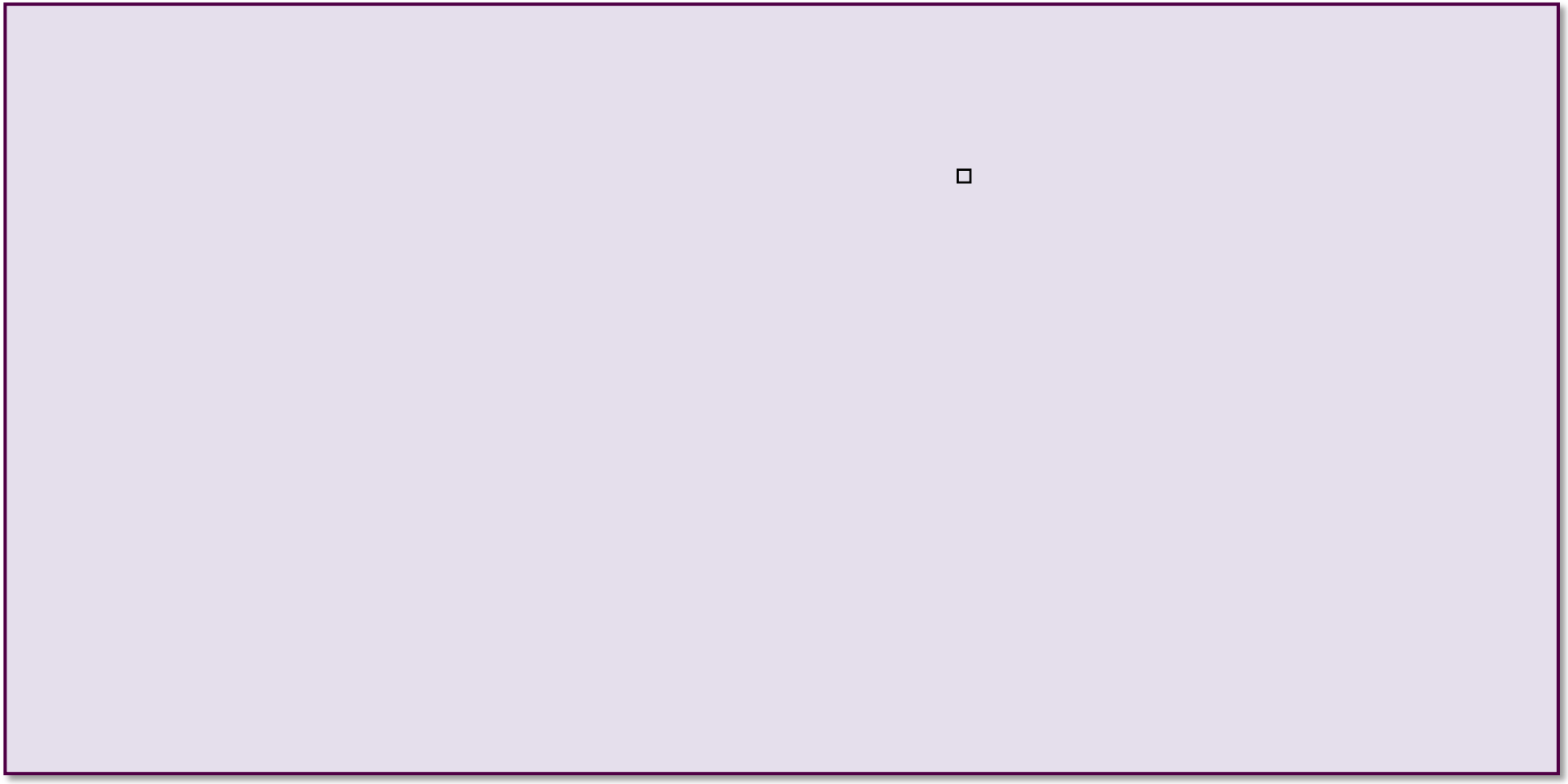
Appendix 5: SEA Assessment Key

Table 13 SEA Assessment Key.

Significance of Effect	
Option would have a **major positive** effect in its current form as it would resolve an existing issue or maximise opportunities. **SIGNIFICANT.**	**++**
Option would have a **minor positive** effect.	**+**
Effect of Option is **uncertain**.	**?**
Option would have **no predicted** effects or **no site specific** effects**.**	**□**
Option would have a **minor adverse** effect.	**-**
The Option would have a **major adverse** effect as it would create significant new problems or substantially exacerbate existing problems. Consider exclusion of option. **SIGNIFICANT.**	**--**

Scale and Permanence of Effect	
Local (e.g. settlement or community council level)	**L**
Regional (e.g. National Park or neighbouring LA level)	**R**
National (i.e. Scotland)	**N**
International (i.e. trans-national boundary effects)	**I**
Permanent	**P**
Temporary	**T**

Appendix 6: Assessment of Outcomes and Policies



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	While not explicitly stated, the crucial aspect of the Vision with regard to reducing GHG emissions is the link to nature and people thriving together. Such an approach requires the management of the National Park to take on principles that limit negative impacts on the environment and encourage positive change; these may have either direct or indirect positive benefits in meeting the SEA Objective. Promoting woodland expansion plays a strong role in the storage and sequestration of carbon.	R	P	+	+	+	
Objectives							
a. Creation of new woodlands that complement other land use	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs.	R	P	++	++	++	
b. Enhance the condition of existing forests	Enhancing the condition of existing forests is likely to involve the production of more biomass which will in turn sequester carbon and GHG's	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
c. Restore lost or vulnerable forest ecosystems	Restoration of woodland will promote and increase in GHG's storage and sequestration of carbon	R	P	+	+	+	
d. Encourage natural regeneration of native forests	Increase in woodland cover will increase GHG's storage and sequestration of carbon.	R	P	++	++	++	
e. Promote the creation and enhancement of productive forests	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in less GHG emissions. Increase in woodland cover will increase GHG's storage and sequestration of carbon	R	P	++	++	++	
f. Protect forests from disease and invasive species	This will reduce tree loss from pests and disease thus maintaining tree cover and reduce GHG's emissions.	R	P	+	+	+	
g. Increase employment in the forestry sector	There are no predicted effects associated with this policy.			□	□	□	
h. Encourage innovation in the use and marketing of native forest products	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in less GHG			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	emissions. However, economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it is likely to result in an increase in GHG emissions. Overall the impact is likely to be neutral over a longer timescale.						
Reasonable Alternative 3hi Encourage innovation in the use and marketing of non-native forest products	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in less GHG emissions. However, economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it is likely to result in an increase in GHG emissions. Overall the impact is likely to be neutral over a longer timescale.			□	□	□	
i. Promote responsible access and active enjoyment of forests	Increasing local use of woodland resource could result in less travel for recreation and so less emissions, however this could be counter balanced by providing a high quality visitor experience which could lead to an increase in visitor numbers. Since	**R**	**P**	-	-	-	Active Travel is promoted within other CNP strategies including the NPPP

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	visitors to the Cairngorms National Park overwhelmingly use private motor vehicles as their mode of transport to and around the National Park, there is likely to be an increase in associated GHG emissions.						
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			□	□	□	
Policies							
Managed moorland	Landscape scale habitat management techniques such as woodland enhancement and expansion and the sustainable management of moorland and peatland which can play an important role in the storage and sequestration of carbon.	**R**	**P**	+	+	+	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms can play an important role in the storage and sequestration of carbon.	**R**	**P**	+	+	+	
Peatlands	Enhancing the health and connectivity of habitats, expanding woodlands and securing the effective management of peat and carbon rich soils can play an important role	**R**	**P**	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	in the storage and sequestration of carbon.						
Deer management	The sustainable management of deer is actively aimed at allowing natural woodland regeneration and the recovery of fragile woodland remnants which will increase the storage and sequestration of carbon.	R	P	++	++	++	
Deer fencing	Fencing to keep deer out will allow natural regeneration and ensure the success of tree planting schemes which will increase the storage and sequestration of carbon.	R	T	+	+	+	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing opportunity for carbon storage	R	P	-	-	-	Fencing is still required in some situations
Landscape and Wild Land	There are no predicted effects associated with this policy.			□	□	□	
Designated Sites	Increased woodland cover on designated sites would increase opportunity for carbon storage as long as site integrity is maintained	R	P	+	+	+	
Reasonable Alternative: No woodland planting on designated sites	Would not increase the opportunity for increased carbon storage			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Forest habitat networks	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs over a large area	R	P	++	++	++	
Reasonable Alternative: No tree planting or regeneration to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no increase in C storage			□	□	□	Allow woodland expansion to connect habitats after consideration of risks of invasive and disease spread
Montane Woodland	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs	R	P	+	+	+	
Riparian Woodland	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs	R	P	+	+	+	
Aspen	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Woodland Remnants	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs	R	P	+	+	+	
Ancient & Semi-natural woodlands	There are no predicted effects from this policy.			□	□	□	
Harvesting	The use of Low Impact Silvicultural Systems causes less change to the environment and will result in less tree loss and ground disturbance than clear felling systems so resulting in less GHG emissions arising from soil degradation.	R	P	++	++	++	
Reasonable Alternative: No limits on clear-felling activity	This will result in the loss of more trees and increased loss of C storage	R	P	-	-	-	
Biosecurity, invasives & wildfire	This will reduce tree loss from pests and disease and wildfire thus maintaining tree cover and reduce GHG's emissions.	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Rural Development	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in less GHG emissions. However, economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it is likely to result in an increase in GHG emissions.			?	?	?	
Employment	There are no predicted effects associated with this policy.			□	□	□	
Productive Woodland	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs	R	P	+	+	+	
Natural Flood Management	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of GHGs, it is hoped there will also be a reduction in hard engineered options which require large amounts of concrete	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Low carbon and carbon trading	The low carbon agenda is directing more people to use wood as a fuel, the strategy will promote opportunities for the production of local timber for fuel and therefore reduce emissions from fossil fuels and reduce emissions from transportation.	L	P	++	++	++	
Responsible access	Increasing local use of woodland resource could result in less travel for recreation and so less emissions, however this could be counter balanced by providing a high quality visitor experience which could lead to an increase in visitor numbers. Since visitors to the Cairngorms National Park overwhelmingly use private motor vehicles as their mode of transport to and around the National Park, there is likely to be an increase in associated GHG emissions.	L	P	-	-	-	Increase in Active Travel promoted through other CNP strategies
Health	There are no predicted impacts resulting from this policy			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	While not explicitly stated, the crucial aspect of the Vision with regard to increasing resilience to climate change is the link to nature and people thriving together. Such an approach requires the management of the National Park to take on principles that limit negative impacts on the environment and encourage positive change; these may have either direct or indirect positive benefits in meeting the SEA Objective. Promoting better connected habitat with more diverse woodland will increase resilience to the effects of climate change.	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Objectives							
a. Creation of new woodlands that complement other land use	Through the promotion of woodland expansion, there is likely to be an increase in ecological permeability allowing species to adapt to climate induced change.	R	P	++	++	++	
b. Enhance the condition of existing forests	Enhancing the condition of existing forests will increase habitat diversity. create more available habitat and increase ecological permeability	R	P	++	++	++	
c. Restore lost or vulnerable forest ecosystems	Restoration of woodland will increase ecological connectivity	R	P	++	++	++	
d. Encourage natural regeneration of native forests	Natural regeneration significantly reduces the risk of introducing pathogens into native forests	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
e. Promote the creation and enhancement of productive forests	Increase in productive woodland cover with fast growth rates will increase sequestration of carbon	R	P	++	++	++	
f. Protect forests from disease and invasive species	This is crucial as the threat from pathogens and pests is likely to increase with climate change	R	P	+	+	+	
g. Increase employment in the forestry sector	There are no predicted effects associated with this policy.			□	□	□	
h. Encourage innovation in the use and marketing of native forest	Increase in the demand for locally available native timber will lead to an increase in planting of native species	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
products							
Reasonable Alternative 3hi Encourage innovation in the use and marketing of non-native forest products	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in less GHG emissions. However, economic growth is rarely achieved without generating additional energy needs or transportation requirements and as such it is likely to result in an increase in GHG emissions. Overall the impact is likely to be neutral over a longer timescale.	**R**	**P**				
i. Promote responsible access and active enjoyment of forests	There are no predicted effects associated with this policy.			☐	☐	☐	
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			☐	☐	☐	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Policies							
Managed moorland	Landscape scale habitat management techniques such as woodland enhancement and expansion and the sustainable management of moorland and peatland can play an important role in the storage and sequestration of carbon.	R	P	+	+	+	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms can play an important role in the storage and sequestration of carbon.	R	P	+	+	+	
Peatlands	Enhancing the health and connectivity of habitats, expanding woodlands and securing the effective management of peat and carbon rich soils can play an important role in the storage and sequestration of carbon.	R	P	++	++	++	
Deer management	The sustainable management of deer is actively aimed at allowing natural woodland regeneration and the recovery of fragile woodland remnants which will increase the storage and sequestration of	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	carbon.						
Deer fencing	Fencing to keep deer out will allow natural regeneration and ensure the success of tree planting schemes which will increase the storage and sequestration of carbon.	R	T	+	+	+	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing opportunity for carbon storage	R	P	-	-	-	Fencing is still required in some situations
Landscape and Wild Land	This policy aims to see a mosaic of well-connected habitats throughout the landscape which will increase ecological permeability.	R	P	++	++	++	
Designated Sites	This policy will protect the integrity of designated sites, which is essential for CC adaptation.	R	P	++	++	++	
Reasonable Alternative: No woodland planting on designated sites	This would protect the integrity of on designated sites but would not increase the opportunity for increased carbon storage	R	P	□	□	□	
Forest habitat networks	This policy aims to see a mosaic of well-connected habitats throughout the	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	landscape which will increase ecological permeability and allow for climate change adaption and movement of species.						
Reasonable Alternative: No tree planting or regeneration to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no increase in C storage and no increase in woodland connectivity so reduced ability of species adaptation to climate change			□	□	□	Allow woodland expansion to connect habitats after consideration of risks of invasive and disease spread
Montane Woodland	Through the promotion of montane woodland there will be a net gain in montane woodland cover, arguably one of the most vulnerable habitats to the effects of climate change.	**R**	**P**	**++**	**++**	**++**	
Riparian Woodland	Increased riparian cover will help to shade watercourses and lower water temperature, it will also make banks less susceptible to flood erosion.	**R**	**P**	**++**	**++**	**++**	
Aspen	An increase in aspen stand age and expansion of aspen coverage throughout	**R**	**P**	**++**	**++**	**++**	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	native woodlands will increase ecological permeability for aspen specific species						
Woodland Remnants	Through the promotion of woodland expansion, there is likely to be an increase in the storage and sequestration of carbon	R	P	+	+	+	
Ancient & Semi-natural woodlands	There is no predicted effect associated with this policy			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Harvesting	The use of Low Impact Silvicultural Systems will ensure there's near continuous cover therefore ensuring there's no barrier to species movement eg for some invertebrate species dispersal ranges may be as small as a few metres.	**R**	**P**	**+**	**+**	**+**	
Reasonable Alternative: Harvesting –no limits on clear felling	If clear fell is not discouraged there will be an increase in GHG release	**R**	**P**	**-**	**-**	**-**	
Biosecurity	It is likely that the threat from pest and diseases will increase as climates change, this policy is aimed at increasing the resilience of woodlands by promoting species diversity and woodlands with varying age structure.	**R**	**P**	**+**	**+**	**+**	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Invasive non-natives	It is likely that as climates change invasive species may become more of an issue, the woodland strategy will look to reducing the opportunity for non-native species within the CNP and supporting initiatives aimed at saving our native species	R	P	+	+	+	
Rural Development	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in more carbon storage	R	P	+	+	+	
Employment	There are no predicted effects associated with this policy.			□	□	□	
Productive Woodland	Productive woodland has a large capacity to absorb carbon, an essential service to combat climate change	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Natural Flood Management	Landscape scale habitat management and natural flood management techniques, such as woodland expansion and river restoration offer means of creating rich habitats that provide important ecosystem services with regard to climate change adaptation.	R	P	++	++	++	
Low carbon and carbon trading	The low carbon agenda is directing more people to use wood as a fuel, the strategy will promote opportunities for the production of local timber for fuel and therefore increase carbon uptake .	R	P	++	++	++	
Responsible access	Promotion of path networks close to communities will encourage less travel for recreation, combined with the CNAP Active Cairngorms strategy there will be more opportunity for local recreation.	R	P	+	+	+	
Health	Promotion of path networks close to communities within woodland will promote local recreation	R	P	+	+	+	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	While not explicitly stated, the crucial aspect of the Vision with regard to increasing resilience to climate change is the link to nature and people thriving together. Promotion of woodland creation and better management close to villages and towns will benefit localised air quality	L	P	+	+	+	
Objectives							

a. Creation of new woodlands that complement other land use	Creation of new woodlands will benefit air quality	L	P	+	+	+	
b. Enhance the condition of existing forests	There are no predicted effects associated with this policy.			□	□	□	
c. Restore lost or vulnerable forest ecosystems	Restoration of woodland will benefit air quality	L	P	+	+	+	
d. Encourage natural regeneration of native forests	Natural regeneration and an increase in woodland coverage will benefit air quality	L	P	+	+	+	
e. Promote the creation and enhancement of productive forests	Increase in productive woodland cover will benefit air quality	L	P	+	+	+	

f. Protect forests from disease and invasive species	There are no predicted effects associated with this policy.			□	□	□	
g. Increase employment in the forestry sector	There are no predicted effects associated with this policy.			□	□	□	
h. Encourage innovation in the use and marketing of native forest products	This policy aims to increase the use of wood fuel and will reduce the need for transportation through increased local processing of timber so will benefit air quality	**L**	**P**	+	+	+	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	This policy aims to increase the use of wood fuel and will reduce the need for transportation through increased local processing of timber so will benefit air quality	**L**	**P**	+	+	+	
i. Promote responsible access and active	This policy aims to increase the amount of visitors the CNP forests, many of which are likely to arrive by car thereby increasing air pollution locally	**L**	**P**	-	-	-	

enjoyment of forests							
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			□	□	□	
Policies							
Managed moorland	There are no predicted effects associated with this policy.			□	□	□	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms can play an important role in improving air quality	**L**	**P**	+	+	+	
Peatlands	There are no predicted effects associated with this policy.			□	□	□	
Deer management	There are no predicted effects associated with this policy.			□	□	□	
Deer fencing	There are no predicted effects associated with this policy.			□	□	□	
Reasonable Alternative: There should be no deer fencing	There are no predicted effects associated with this policy.			□	□	□	
Landscape and Wild Land	There are no predicted effects associated with this policy.			□	□	□	

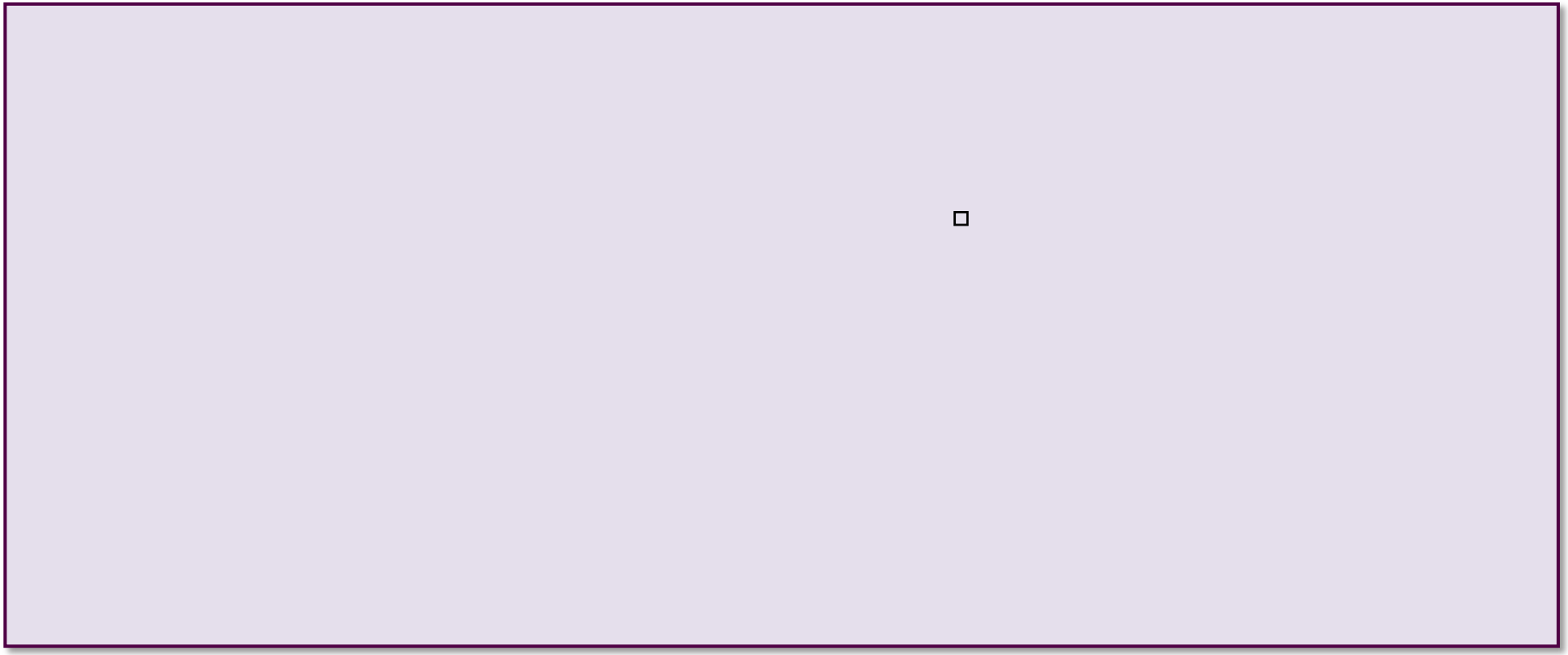
Designated Sites	There are no predicted effects associated with this policy.			☐	☐	☐	
Reasonable Alternative: No woodland planting on designated sites	There are no predicted effects associated with this policy.			☐	☐	☐	
Forest habitat networks	Increased forest networks will improve localised air quality	**L**	**P**	+	+	+	
Reasonable Alternative: No tree planting or regeneration to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no added benefit of improving local air quality			☐	☐	☐	
Montane Woodland	There are no predicted effects associated with this policy.			☐	☐	☐	
Riparian Woodland	There are no predicted effects associated with this policy.			☐	☐	☐	
Aspen	There are no predicted effects associated with this policy.			☐	☐	☐	

Woodland Remnants	Through the promotion of woodland expansion, there is likely to be an improvement in air quality	L	P	+	+	+	
Ancient & Semi-natural woodlands	This policy has no likely significant effect on air quality						

Harvesting	There are no predicted effects associated with this policy.			☐	☐	☐	
Reasonable Alternative: There will be no limits to clear fell harvesting	There are no predicted effects associated with this policy.						
Biosecurity	There are no predicted effects associated with this policy.			☐	☐	☐	
Invasive non-natives	There are no predicted effects associated with this policy.			☐	☐	☐	

Rural Development	Increase in locally available timber will reduce transportation costs and increase use of wood fuel over fossil fuel alternatives resulting in improved air quality although there may be localised increases in wood smoke	L	P	-	-	-	
Employment	There are no predicted effects associated with this policy.			□	□	□	
Productive Woodland	Productive woodland has a large capacity to improve air quality	L	P	+	+	+	
Natural Flood Management	This policy will result in more woodland cover so is likely to improve air quality.	L	P	+	+	+	
Low carbon and carbon trading	There are no predicted effects associated with this policy.			□	□	□	
Responsible access	There are no predicted effects associated with this policy.			□	□	□	

Health	There are no predicted effects associated with this policy.			☐	☐	☐	
Forest Culture	There are no predicted effects associated with this policy.			☐	☐	☐	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	The Vision of expanded woodland habitat creation through the landscape will play a role in reducing flood risk through the creation of woodland which slows the flow and provides valuable habitat.	R	P	++	++	++	
Objectives							

a. Creation of new woodlands that complement other land use	Creation of new woodlands will benefit flood risk	R	P	++	++	++	
b. Enhance the condition of existing forests	Better condition including improved ground flora will reduce flood risk	R	P	+	+	+	
c. Restore lost or vulnerable forest ecosystems	Restoration of woodland will benefit flood risk	R	P	+	+	+	
d. Encourage natural regeneration of native forests	Natural regeneration will benefit flood risk	R	P	+	+	+	
e. Promote the enhancement of productive forests	Increase in productive woodland cover will benefit flood risk	R	P	+	+	+	
f. Protect	There are no predicted effects associated			□	□	□	

forests from disease and invasive species	with this policy.						
g. Increase employment in the forestry sector	There are no predicted effects associated with this policy.			☐	☐	☐	
h. Encourage innovation in the use and marketing of native forest products	There are no predicted effects associated with this policy.			☐	☐	☐	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	There are no predicted effects associated with this policy.			☐	☐	☐	
i. Promote responsible access and active enjoyment	There are no predicted effects associated with this policy.			☐	☐	☐	

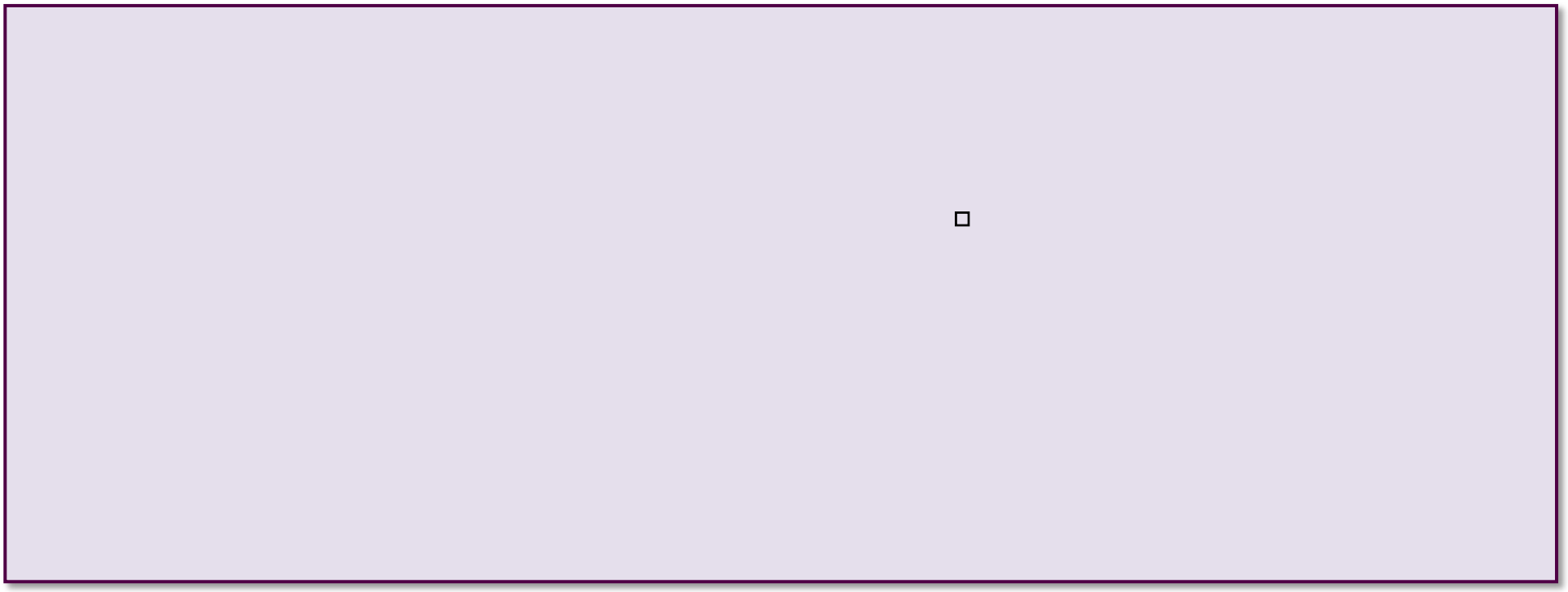
of forests							
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			□	□	□	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit flood risk	**R**	**P**	++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms can play an important role in reducing flood risk	**R**	**P**	+	+	+	
Peatlands	Woodland creation in combination with better managed peatland will benefit flood risk	**R**	**P**	++	++	++	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes	**R**	**P**	+	+	+	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes	**R**	**T**	+	+	+	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing opportunity to deliver benefits for water storage and improving water	**R**	**P**	-	-	-	Fencing is still required in some situations

	quality						
Landscape and Wild Land	There are no predicted effects associated with this policy.			0	0	0	
Designated Sites	There are no predicted effects associated with this policy.			0	0	0	
Reasonable Alternative: There will be no tree planting on Designated Sites	There are no predicted effects associated with this policy.			0	0	0	
Forest habitat networks	Increased forest networks will reduce flood risk	**R**	**P**	++	++	++	
Reasonable Alternative: No tree planting or regeneration to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no added benefit of reducing flood risk			0	0	0	
Montane Woodland	Increased montane woodland will reduce erosion and run-off in upland areas	**R**	**P**	++	++	++	
Riparian Woodland	This policy will reduce run-off reaching burns an rivers and slow the flow within waterbodies	**R**	**P**	++	++	++	
Aspen	There are no predicted effects associated			0	0	0	

	with this policy.						
Woodland Remnants	Through the promotion of woodland expansion, there is likely to be a reduction in flood risk	**L**	**P**	**+**	**+**	**+**	
Ancient & Semi-natural woodlands	This policy is unlikely to have a significant effect						

Harvesting	Low impact silviculture methods will reduce the likelihood of large-scale run off and erosion thereby reducing flood risk	**R**	**P**	++	++	++	
Reasonable Alternative: Harvesting-no limits to clear felling	This could quite possibly increase flood risk as has been seen in the past where run-off rates are greater in clear fell areas	**R**	**P**	-	-	-	
Biosecurity	There are no predicted effects associated with this policy.			□	□	□	
Invasive non-natives	There are no predicted effects associated with this policy.			□	□	□	
Rural Development	There are no predicted effects associated with this policy.			□	□	□	
Employment	There are no predicted effects associated with this policy.			□	□	□	

Productive Woodland	Productive woodland has a large capacity to reduce flood risk	R	P	++	++	++	
Natural Flood Management	This policy will reduce flood risk	R	P	++	++	++	
Low carbon and carbon trading	There are no predicted effects associated with this policy.			□	□	□	
Responsible access	There are no predicted effects associated with this policy.			□	□	□	
Health	There are no predicted effects associated with this policy.			□	□	□	
Forest Culture	There are no predicted effects associated with this policy.			□	□	□	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	The Vision of expanded woodland habitat creation through the landscape will play a role in improving water quality and maintaining resources as new woodlands store and filter water removing nutrients and trapping solids and provide long term storage of water resources.	R	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands will benefit water resources	R	P	++	++	++	
b. Enhance the condition of existing forests	Better condition including improved ground flora will improve water quality as there's greater vegetative mass to uptake nutrients and filter out solids and store	R	P	+	+	+	

	water						
c. Restore lost or vulnerable forest ecosystems	Restoration of woodland will benefit water resources	**R**	**P**	+	+	+	
d. Encourage natural regeneration of native forests	Increased woodland cover will benefit water resources	**R**	**P**	+	+	+	
e. Promote the creation and enhancement of productive forests	Increase in productive woodland cover will benefit water resources	**R**	**P**	+	+	+	
f. Protect forests from disease and invasive species	There are no predicted effects associated with this policy.			☐	☐	☐	
g. Increase employment in the forestry sector	There are no predicted effects associated with this policy.			☐	☐	☐	
h. Encourage innovation in the use and marketing of native forest products	There are no predicted effects associated with this policy.			☐	☐	☐	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	There are no predicted effects associated with this policy.			☐	☐	☐	

i. Promote responsible access and active enjoyment of forests	There are no predicted effects associated with this policy.			□	□	□	
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			□	□	□	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit water resources	**R**	**P**	++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit water resources	**R**	**P**	+	+	+	
Peatlands	Woodland creation in combination with better managed peatland willensure water resources are maintained	**R**	**P**	++	++	++	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will maintain water resource quality	**R**	**P**	+	+	+	
Deer fencing	This policy will encourage natural	**R**	**T**	+	+	+	

	regeneration and ensure the success of planting schemes that will maintain water resource quality						
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing opportunity to deliver benefits for water storage and improving water quality	**R**	**P**	**-**	**-**	**-**	Fencing is still required in some situations
Landscape and Wild Land	There are no predicted effects associated with this policy.			□	□	□	
Designated Sites	There are no predicted effects associated with this policy.			□	□	□	
Reasonable Alternative: There will be no tree planting on Designated Sites	There are no predicted effects associated with this policy.(If designated sites are in good condition the functioning habitats should provide water quality improvements eg peatlands)			□	□	□	
Forest habitat networks	An increase in forest networks will improve capture and storage of water within the landscape reducing pollution events and maintaining a long-term water resource	**R**	**P**	**++**	**++**	**++**	
Reasonable Alternative: No tree planting or regeneration	No promotion of woodland expansion so no added benefit of improving or safeguarding water			□	□	□	

to connect habitats eg river catchments due to risk of disease and spread of invasives	quality						
Montane Woodland	An increase in montane woodland will reduce erosion and run-off in upland areas	R	P	++	++	++	
Riparian Woodland	This policy will reduce polluted run-off reaching burns and rivers and slow the flow within waterbodies	R	P	++	++	++	
Aspen	There are no predicted effects associated with this policy.			□	□	□	
Woodland Remnants	Through the promotion of woodland expansion, there is likely to be an improvement in water quality and maintenance of resource	R	P	+	+	+	
Ancient & Semi natural woodlands	There are no predicted effects associated with this policy.			□	□	□	

Harvesting	Low impact silviculture methods will reduce the likelihood of large-scale run off and erosion thereby reducing pollution events and will protect water resources	R	P	++	++	++	
Reasonable Alternative: Harvesting-Clear-fell is not limited	Clear fell can cause increased erosion and loss of sediments and nutrients into watercourses	L	P	--	--	--	Limit clear-fell sites and ensure that it doesn't take place on those sites at high erosion risk
Biosecurity	There are no predicted effects associated with this policy.			□	□	□	
Invasive non-natives	There are no predicted effects associated with this policy.			□	□	□	
Rural Development	There are no predicted effects associated with this policy.			□	□	□	
Employment	There are no predicted effects associated with this policy.			□	□	□	
Productive Woodland	Productive well managed woodland has a large capacity to reduce pollution and maintain water resources	R	P	++	++	++	

Natural Flood Management	This policy will retain water resources	R	P	++	++	++	
Low carbon and carbon trading	There are no predicted effects associated with this policy.			□	□	□	
Responsible access	There are no predicted effects associated with this policy.			□	□	□	
Health	There are no predicted effects associated with this policy.			□	□	□	
Forest Culture	There are no predicted effects associated with this policy.			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	The Vision of expanded woodland habitat creation through the landscape will play a role in maintaining soil structure and reducing erosion. Restoration of woodlands will maintain the integrity of soils and their associated microflora, retaining the vital connections between soils and the trees and plants they support. Woodland creation will be carefully aligned with other land management uses to retain the productive capacity of agricultural soils and peatland integrity to maintain carbon capture capacity.	R	P	++	++	++	
Objectives							

a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit soil structure and diversity	R	P	++	++	++	
b. Enhance the condition of existing forests	This is one of the best methods of regenerating soil structure and microbial and fungal associations as soil microflora may still be present in historic woodland sites	R	P	++	++	++	
c. Restore lost or vulnerable forest ecosystems	This is one of the best methods of regenerating soil structure and microbial and fungal associations as soil microflora may still be present in historic woodland sites	R	P	++	++	++	
d. Encourage natural regeneration of native forests	This is one of the best methods of regenerating soil structure and microbial and fungal associations as soil microflora may still be present in historic woodland sites	R	P	++	++	++	
e. Promote the creation and enhancement of productive forests	Shallow cultivation methods can be useful in breaking up compacted agricultural ground and reducing soil erosion	R	P	+	+	+	
f. Protect forests from disease and invasive species	There are no predicted effects associated with this policy.			□	□	□	
g. Increase employment	There are no predicted effects			□	□	□	

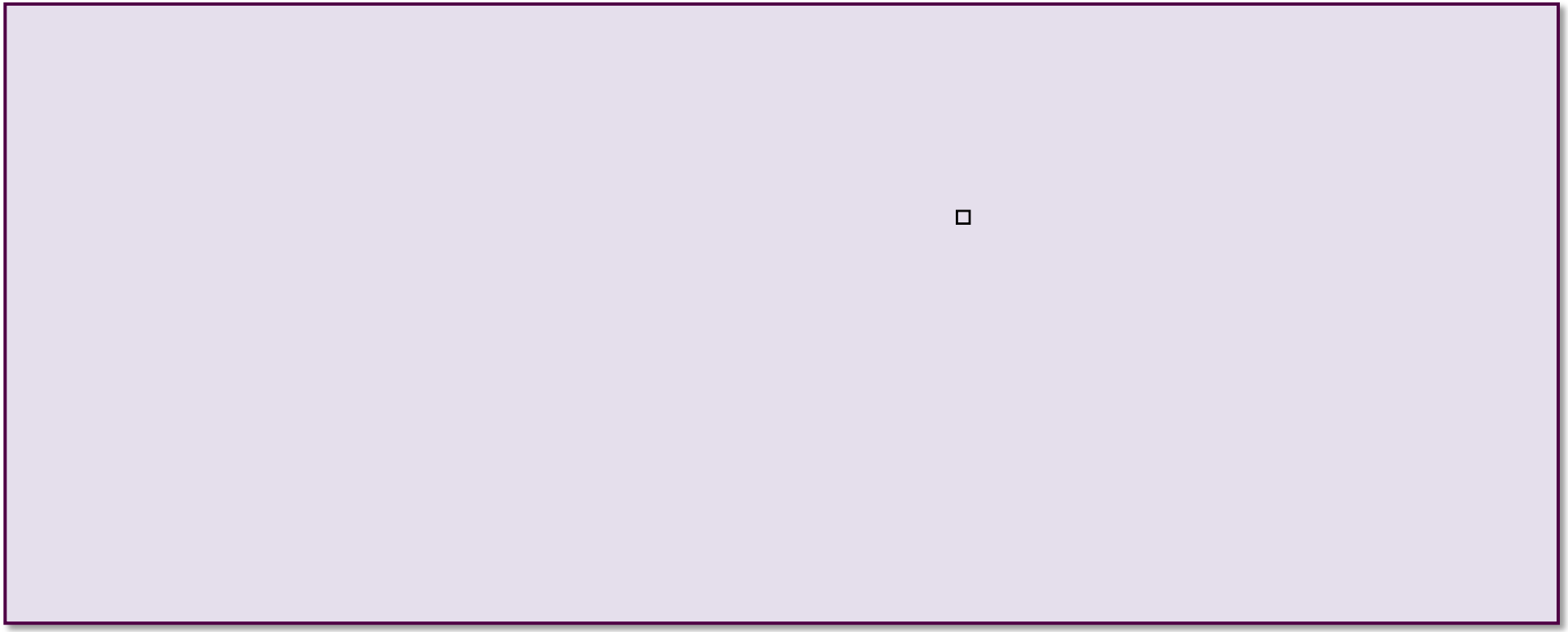
in the forestry sector	associated with this policy.						
h. Encourage innovation in the use and marketing of native forest products	There are no predicted effects associated with this policy.			☐	☐	☐	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	There are no predicted effects associated with this policy.			☐	☐	☐	
i. Promote responsible access and active enjoyment of forests	There are no predicted effects associated with this policy.			☐	☐	☐	
j. Promote community involvement in forest management	There are no predicted effects associated with this policy.			☐	☐	☐	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit water resources	**R**	**P**	++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit soils	**R**	**P**	++	++	++	
Peatlands	Woodland creation in combination with better managed peatland will ensure the integrity of peat soils are maintained	**R**	**P**	++	++	++	

Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will safeguard soils	R	P	+	+	+	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will safeguard soils	R	T	+	+	+	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful increasing likelihood of continued erosion	R	P	-	-	-	Fencing is still required in some situations
Landscape and Wild Land	Safeguarding soils and peat from erosion will have positive landscape benefits	R	P	+	+	+	
Designated Sites	There are no predicted effects associated with this policy.			□	□	□	
Reasonable Alternative: There will be no tree planting on Designated Sites	There are no predicted effects associated with this policy.			□	□	□	
Forest habitat networks	An increase in forest networks will improve capture and storage of water within the landscape reducing pollution events and maintaining soil and peat resources	R	P	++	++	++	
Reasonable Alternative: No tree planting or regeneration to	No promotion of woodland expansion so no added benefit of improving or safeguarding soil			□	□	□	

connect habitats eg river catchments due to risk of disease and spread of invasives							
Montane Woodland	An increase in montane woodland will reduce erosion and run-off in upland areas	R	P	++	++	++	
Riparian Woodland	This policy will reduce erosion alongside burns and rivers	R	P	++	++	++	
Aspen	There are no predicted effects associated with this policy.			□	□	□	
Woodland Remnants	Through the promotion of woodland expansion, there is likely to be an improvement in soil quality	R	P	+	+	+	
Harvesting	Low impact silviculture methods will reduce the likelihood of large-scale run off and erosion thereby maintaining soil and peatland integrity	R	P	++	++	++	
Reasonable Alternative: Harvesting-no limits to clear-fell	Likely to result in more soil erosion and loss	R	P	-	-	-	

Ancient & Semi-natural woodland	Soils in ancient woodland are of paramount importance for their undisturbed structure and the fungal and bacterial communities they support	R	P				
Biosecurity	There are no predicted effects associated with this policy.			□	□	□	
Invasive non-natives	There are no predicted effects associated with this policy.			□	□	□	
Rural Development	There are no predicted effects associated with this policy.			□	□	□	
Employment	There are no predicted effects associated with this policy.			□	□	□	
Productive Woodland	Productive well managed woodland has a large capacity to reduce soil run-off	R	P	++	++	++	
Natural Flood Management	NFM measures are targeted to reduce land run-off and reduce erosion of soils, performing an important function in the agricultural landscape in retaining productive soils	R	P	++	++	++	

Low carbon and carbon trading	There are no predicted effects associated with this policy.			☐	☐	☐	
Responsible access	There are no predicted effects associated with this policy.			☐	☐	☐	
Health	There are no predicted effects associated with this policy.			☐	☐	☐	
Forest Culture	There are no predicted effects associated with this policy.			☐	☐	☐	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	The Vision of expanded well managed woodland habitat creation through the landscape will play a role in maintaining the natural woodland asset	R	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will increase the natural resource	R	P	++	++	++	
b. Enhance the condition of existing forests	This will enhance condition of the existing natural resource	R	P	++	++	++	
c. Restore lost or vulnerable forest ecosystems	This policy acts to conserve fragile woodland resources	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
d. Encourage natural regeneration of native forests	This policy will increase woodland assets	R	P	++	++	++	
e. Promote the creation and enhancement of productive forests	This policy will increase woodland resources	R	P	++	++	++	
f. Protect forests from disease and invasive species	This policy will protect woodland resources	R	P	++	++	++	
g. Increase employment in the forestry sector	This policy is directly linked to an increase in woodland cover and better management of our woodland resource	R	P	++	++	++	
h. Encourage innovation in the use and marketing of native forest products	This policy is directly linked to an increase in woodland cover and better management of our woodland resource and appreciation of its value.	R	P	++	++	++	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	This policy is directly linked to an increase in woodland cover and better management of our woodland resource and	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	appreciation of its value.						
i. Promote responsible access and active enjoyment of forests	This policy will result in improved value and connection of local communities and visitors to the woodland resource for recreation	R	P	++	++	++	
j. Promote community involvement in forest management	This policy will result in improved value and connection of local communities to their woodland resource	R	P	++	++	++	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit both resources	R	P	++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit both resources	R	P	++	++	++	
Peatlands	Woodland creation in combination with better managed peatland will benefit	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	both resources						
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will safeguard woodland resources	R	P	++	++	++	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will safeguard woodland resources	R	T	++	++	++	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing woodland resources	R	P	-	-	-	Fencing is still required in some situations
Landscape and Wild Land	Woodlands are a valued landscape resource	R	P	++	++	++	
Designated Sites	This policy aims to maximise the natural asset value of habitats	R	P	++	++	++	
Reasonable Alternative: There will be no tree planting on Designated Sites	This policy aims to maximise the natural asset value of habitats	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Forest habitat networks	An increase in forest networks will increase the woodland resource	R	P	++	++	++	
Reasonable Alternative: No tree planting or regeneration to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no increase in woodland resource			□	□	□	
Montane Woodland	This policy will increase this scarce resource	R	P	++	++	++	
Riparian Woodland	This policy will increase and connect the woodland resource	R	P	++	++	++	
Aspen	This policy will increase this scarce resource	R	P	++	++	++	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Ancient & Semi-natural woodlands	This policy is aimed at retaining and enhancing ancient and semi-natural woodlands			++	++	++	
Harvesting	Low impact silviculture methods will maintain a valuable economic and biodiverse resource of woodland	R	P	++	++	++	
Reasonable Alternative:Harvesting, no limits on clear-fell	The woodland resource would be depleted in terms of biodiversity	R	P	-	-	-	Limit clear –fell activities to maintain woodland resource and biodiversity
Biosecurity	This policy will increase resilience of woodland to pests and disease	R	P	++	++	++	
Invasive non-natives	This policy will increase the resilience of woodlands to invasive non-natives	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	R	P	++	++	++	
Employment	Aims to maximise employment opportunities from increased and well managed resource	R	P	++	++	++	
Productive Woodland	Will increase the economic worth of woodland assets	R	P	++	++	++	
Natural Flood Management	Will maximise flood amelioration properties of strategically planted woodlands	R	P	++	++	++	
Low carbon and carbon trading	There will be a positive effect if more people are encouraged to use wood fuel to heat their homes	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Responsible access	This policy will result in improved connection of local communities to their woodland assets for recreation	R	P	++	++	++	
Health	This policy will result in improved connection of local communities to their woodland assets for recreation and wellbeing	R	P	++	++	++	
Forest Culture	This policy will result in improved connection of local communities to their woodland resource	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	Biodiversity benefit is at the centre of The Vision of expanded well managed woodland habitat creation through the landscape.	R	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit biodiversity by improving habitat connectivity	R	P	++	++	++	
b. Enhance the condition of existing forests	Provides better habitat and connectivity through the landscape	R	P	++	++	++	
c. Restore lost or vulnerable forest	This policy acts to conserve fragile woodland habitat and the	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
ecosystems	species that rely on them						
d. Encourage natural regeneration of native forests	Utilises the existing seed source of local provenance resulting in a stronger woodland resource. It is more likely that the essential soil micro-biota are already present within the soil to ensure a productive and healthy woodland.	R	P	++	++	++	
e. Promote the creation and enhancement of productive forests	This policy will increase Enhancement of productive forests to include native species, edge planting to increase habitat diversity, having at least 5% ground without tree cover	R	P	++	++	++	
f. Protect forests from disease and invasive species	This policy will protect woodland habitats and encourages the planting of diverse woodlands to increase resilience	R	P	++	++	++	
g. Increase employment in the forestry sector	This policy is not predicted to have an effect			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
h. Encourage innovation in the use and marketing of native forest products	This policy could lead to an increase in native woodland planting which would bring benefit for biodiversity	R	P	+	+	+	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	This would not enhance biodiversity objectives	R	P	-	-	-	
i. Promote responsible access and active enjoyment of forests	This policy is not predicted to have an effect			☐	☐	☐	
j. Promote community involvement in forest management	This policy is not predicted to have an effect			☐	☐	☐	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit both habitats			++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on	R	P	++	++	++	New woodland creation schemes should avoid priority sites for breeding waders

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	crofts and farms will benefit both habitat types						
Peatlands	Woodland creation in combination with better managed peatland will benefit both habitats	R	P	++	++	++	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit woodland habitats	R	P	++	++	++	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit woodland habitats	R	T	++	++	++	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing woodland habitat	R	P	-	-	-	Fencing is still required in some situations
Landscape and Wild Land	Woodlands will be integrated across the landscape creating	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	habitat networks						
Designated Sites	Landscape –scale habitat networks will be enhanced	**R**	**P**	**++**	**++**	**++**	No tree planting or regeneration will be promoted in areas where there could be a negative effect on designated site integrity.
Reasonable Alternative: No Tree Planting on Designated Sites	Reduction in potential for designated site to deliver fully on biodiversity benefit	**R**	**P**	**-**	**-**	**-**	Allow tree planting or regeneration where it meets the objectives of the site designation eg montane woodland
Forest habitat networks	An increase in forest networks will increase the ecological permeability of the landscape for many species	**R**	**P**	**++**	**++**	**++**	Increasing ecological permeability is a positive outcome for allowing adaptation to climate change, preventing genetic isolation and increasing species range and strengthening population viability however, care must be taken that permeability is not at the same time increased for invasive non-native species for example grey squirrel, which at present is prevented from accessing Speyside from the south because of the lack of suitable woodlands. Conversely increasing ecological permeability and habitat cover will also increase abundance of predators eg pine marten.
Reasonable Alternative: No tree planting or regeneration to create Forest	No promotion of woodland expansion so no increase in ecological permeability	**R**	**P**	**-**	**-**	**-**	Allow planting or regeneration to connect habitats after careful assessment to ensure no spread of non-natives or disease

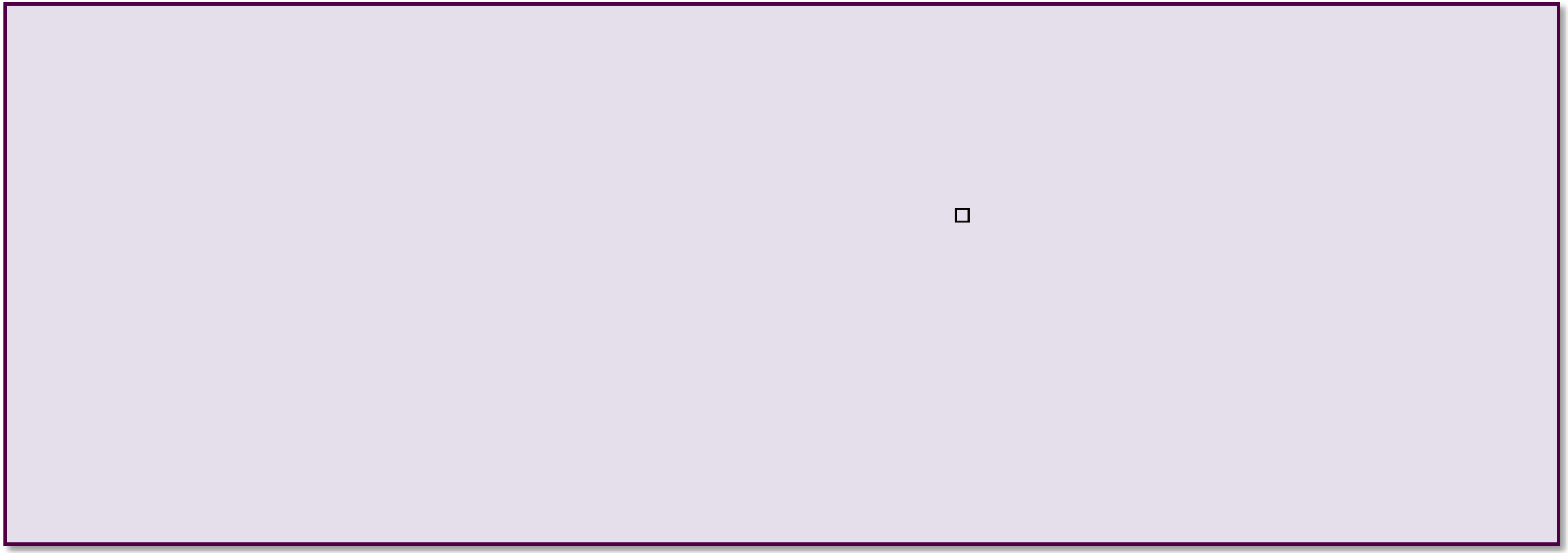
Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Habitat networks and to connect habitats eg river catchments due to risk of disease and spread of invasives							
Montane Woodland	Re-establishment of missing priority habitats-dwarf birch and montane willows	R	P	++	++	++	No tree planting or regeneration will be promoted in areas where there could be a negative effect on designated site integrity.
Riparian Woodland	Will provide valuable habitat linkages within catchments for species movement, provide shading of watercourses to maintain suitable salmon habitat	R	P	++	++	++	It is likely in the future that beaver will be present in the river catchments of the CNP. Populations will require careful monitoring and management to reduce conflicting land use objectives. No tree planting or regeneration will be promoted in areas where there could be a negative effect on designated site integrity.
Aspen	This policy will increase this scarce habitat	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland to improve habitat connection	R	P	++	++	++	No tree planting or regeneration will be promoted in areas where there could be a negative effect on designated site integrity.
Harvesting	Low impact silviculture methods which are based around continuous cover methods will reduce the likelihood of creating ecological barriers to species dispersal	R	P	++	++	++	
Reasonable Alternative: No limits on clear – fell schemes	This would reduce biodiversity potential of forest planting, clear fell reduces the potential to retain habitat networks.	R	P	-	-	-	Limit clear-fell activities as advocated by Low Impact Silviculture Systems which limit the size of areas to be clear-felled and the use of natural regeneration.
Ancient & Semi-natural woodlands	This policy will ensure protection from further fragmentation and enhance condition and management of those woodlands under threat.	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Biosecurity, invasive species and wildfire	This policy will increase resilience of woodland to pests and disease	R	P	++	++	++	The management of non-native species is guided by the three stage hierarchical approach, the key principles of which are prevention, rapid response and control and containment.
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	R	P	++	++	++	
Employment	Aims to maximise employment opportunities from increased and well managed resource	R	P	++	++	++	
Productive Woodland	Will increase the economic worth of woodland assets	R	P	++	++	++	
Natural Flood Management	Will maximise flood amelioration properties of strategically planted woodlands	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Low carbon and carbon trading	There will be a positive effect if more people are encouraged to use wood fuel to heat their homes			++	++	++	
Responsible access	This policy will result in improved connection of local communities to their woodland assets for recreation and value and appreciation of local wildlife eg Boat of Garten and capercaillie *however* increased access also has the potential to disturb capercaillie. Ultimately the objectives of the CFS will result in increased capercaillie habitat.			+	+	+	The strategy advocates the use of Recreational Management Plans which aim to balance the needs of timber producers, visitors, conservation and sporting interests. Any new proposal for the construction of a new pathway, activity centre or access track within core capercaillie areas will be subject to a Habitats Regulations Appraisal to assess impacts on capercaillie. The Capercaillie Framework will provide a strategic framework for effective mitigation. Ultimately the objectives of the CFS will result in increased capercaillie habitat.

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Health	This policy will result in improved connection of local communities to their woodland assets for recreation and wellbeing			+	+	+	The strategy advocates the use of Recreational Management Plans which aim to balance the needs of timber producers, visitors, conservation and sporting interests. Any new proposal for the construction of a new pathway, activity centre or access track within core capercaillie areas will be subject to a Habitats Regulations Appraisal to assess impacts on capercaillie. The Capercaillie Framework will provide a strategic framework for effective mitigation. Ultimately the objectives of the CFS will result in increased capercaillie habitat.
Forest Culture	This policy will result in improved connection of local communities to their woodland resource			++	++	++	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	Biodiversity benefit is at the centre of The Vision of expanded well managed woodland habitat creation through the landscape.	R	P	++	++	++	
Objectives							

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit the multiple benefits gained from different land use	R	P	++	++	++	
b. Enhance the condition of existing forests	A functioning woodland ecosystem can provide a wealth of benefits	R	P	++	++	++	
c. Restore lost or vulnerable forest ecosystems	Recognizes that these fragile remnants require action or they will be lost to the landscape	R	P	++	++	++	
d. Encourage natural regeneration of native forests	Increases native woodland habitat across the landscape	R	P	++	++	++	
e. Promote	Increased ecosystem service delivery from	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
the creation and enhancement of productive forests	productive woodland						
f. Protect forests from disease and invasive species	This policy will protect woodland habitats and encourages the planting of diverse woodlands to increase resilience	**R**	**P**	**++**	**++**	**++**	
g. Increase employment in the forestry sector	This policy will encourage woodland related employment within a variety of sectors	**R**	**P**	**++**	**++**	**++**	
h. Encourage innovation in the use and marketing of native forest products	This policy will benefit the local economy and biodiversity	**R**	**P**	**++**	**++**	**++**	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	This policy will benefit the local economy but not deliver on as many benefits – especially biodiversity as the preferred option would	**R**	**P**	**+**	**+**	**+**	
i. Promote responsible access and active enjoyment of forests	This policy will maximise on recreational benefit from woodlands	**R**	**P**	**++**	**++**	**++**	
j. Promote community involvement in forest management	This policy will maximise on community benefit delivery from woodlands	**R**	**P**	**++**	**++**	**++**	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit both habitats and enable delivery of a wider	**R**	**P**	**++**	**++**	**++**	

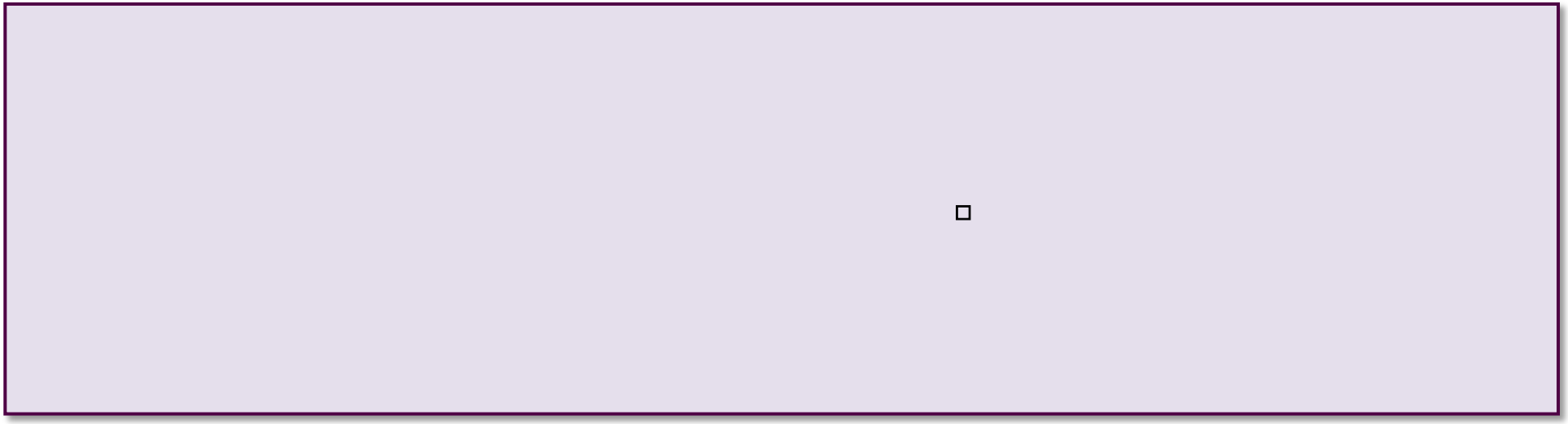
Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	range of ecosystem services						
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit both habitat types and enable delivery of a wider range of ecosystem services	**R**	**P**	**++**	**++**	**++**	
Peatlands	Woodland creation in combination with better managed peatland will benefit both habitats and enable delivery of a wider range of ecosystem services	**R**	**P**	**++**	**++**	**++**	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit woodland habitats and the services they provide	**R**	**P**	**++**	**++**	**++**	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit woodland habitats and the services that they provide	**R**	**T**	**++**	**++**	**++**	
Reasonable Alternative:	Without fencing in some situations planting schemes will not be successful	**R**	**P**	**-**	**-**	**-**	Fencing is still required in some situations

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
There should be no deer fencing	reducing opportunity for provision of woodland services						
Landscape and Wild Land	Woodlands will be integrated across the landscape creating habitat networks that will maximise ecosystem service delivery	R	P	++	++	++	
Designated Sites	Landscape –scale habitat networks will be enhanced and provide maximum benefit from woodland ecosystem service delivery	R	P	++	++	++	
Reasonable Alternative: No Tree Planting on Designated Sites	Potential that opportunity for ecosystem service delivery is reduced	R	P	-	-	-	Allow tree planting or regeneration where it meets the objectives of the site designation eg montane woodland
Forest habitat networks	An increase in forest networks will provide maximum benefit from woodland ecosystem service delivery	R	P	++	++	++	
Reasonable Alternative: No tree planting or regeneration to create Forest Habitat networks and to connect	No promotion of woodland expansion so no increase in ecosystem service delivery						

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
habitats eg river catchments due to risk of disease and spread of invasives							
Montane Woodland	Re-establishment of missing priority habitats-dwarf birch and montane willows	R	P	++	++	++	
Riparian Woodland	Wil provide valuable habitat linkages within catchments	R	P	++	++	++	
Aspen	This policy will increase this scarce habitat			++	++	++	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland to improve habitat connection	R	P	++	++	++	
Ancient and semi-natural woodlands	This policy is aimed at protecting and restoring condition of ancient woodlands and therefore enhancing biodiversity functioning	R	P	++	++	++	
Harvesting	Low impact silviculture methods which are based around continuous cover methods will ensure maintenance of ecosystem service provision	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Reasonable Alternative: No limits on clear –fell	This policy would not enhance biodiversity benefit or wider service provision	R	P	-	-	-	To retain and enhance biodiversity benefit there should be limits on clear felling activities
Biosecurity, invasives and wildfire	This policy will increase resilience of woodland to pests and disease and maintain forests for the future and ensure continuation of woodland ecosystem service delivery	R	P	++	++	++	
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	R	P	++	++	++	
Employment	Aims to maximise employment opportunities from increased and well managed resource	R	P	++	++	++	
Productive Woodland	Will increase the economic worth of woodland assets	R	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Natural Flood Management	Will maximise flood amelioration properties of strategically planted woodlands	R	P	++	++	++	
Low carbon and carbon trading	This maximises the provisioning services of woodlands to provide locally sourced fuel for more homes	R	P	++	++	++	
Responsible access	This policy will result in improved connection of local communities to their woodland assets for recreation	R	P	++	++	++	
Health	This policy will result in improved connection of local communities to their woodland assets for recreation and wellbeing	R	P	++	++	++	
Forest Culture	This policy will result in improved connection of local communities to their woodland resource	R	P	++	++	++	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	An enhanced landscape with a focus on maximising biodiversity, landscape qualities, and historic and cultural assets is central to the Vision for the CFS	N	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit the landscape, restoring ecological functioning	N	P	++	++	++	
b. Enhance the condition of existing forests	Diverse woodlands are visually attractive throughout all seasons, this policy will maximise this benefit	N	P	++	++	++	
c. Restore lost or	Recognizes that these fragile	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
vulnerable forest ecosystems	remnants require action or they will be lost to the landscape, their presence adds structure and diversity and enhances landscape qualities						
d. Encourage natural regeneration of native forests	Increases native woodland habitat across the landscape and enhances Wildland	N	P	++	++	++	
e. Promote the creation and enhancement of productive forests	Promotes the softening of productive conifer woodland edges through native broadleaved planting	N	P	++	++	++	
f. Protect forests from disease and invasive species	This policy will protect woodland habitats and encourages the planting of diverse woodlands to increase resilience, protecting against large scale removal of diseased trees	N	P	++	++	++	
g. Increase employment in the forestry sector	This policy is not predicted to have an effect			□	□	□	
h. Encourage innovation	This policy will benefit the	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
in the use and marketing of native forest products	landscape in the longer term as more planting of native species is encouraged to fuel the market						
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	Large blocks of non-native species can have a negative impact on the landscape	**R**	**P**	-	-	-	Native planting around the perimeter of large blocks of non-natives can soften their appearance as can avoiding planting schemes with hard unnatural edges which don't integrate into the landscape well
i. Promote responsible access and active enjoyment of forests	This policy will encourage people to enjoy and value the woodland environment	**N**	**P**	++	++	++	
j. Promote community involvement in forest management	Encourages promotion of productive community use of woodlands for example small scale harvest to produce wood based products	**N**	**P**	++	++	++	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit the landscape qualities of the CNP	**N**	**P**	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit both habitat types and the landscape qualities of the CNP	N	P	++	++	++	
Peatlands	Woodland creation in combination with better managed peatland will benefit both habitats and the landscape qualities of the CNP	N	P	++	++	++	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit the special landscape qualities of the park	N	P	++	++	++	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit landscape qualities, however fencing can have negative impacts on the landscape	N	T	-	-	-	Only use fencing as a last resort and in places where it is likely to have reduced impact on landscape quality.

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Reasonable Alternative: There should be no deer fencing	Without fencing in some situations planting schemes will not be successful reducing woodland habitat, but there will be landscape benefit in not having fencing	**R**	**P**	**+**	**+-**	**+**	
Landscape and Wild Land	Woodlands will be integrated across the landscape creating habitat networks that will maximise the special landscape qualities and Wild land areas of the CNP	**N**	**P**	**++**	**++**	**++**	
Designated Sites	Landscape –scale habitat networks will be enhanced and provide maximum benefit for the special landscape qualities of the CNP	**N**	**P**	**++**	**++**	**++**	
Reasonable Alternative: No Tree Planting on Designated Sites	Reduced potential to enhance landscape qualities of the CNP	**R**	**P**	**-**	**-**	**-**	Allow tree planting or regeneration where it meets the objectives of the site designation eg montane woodland
Forest habitat networks	An increase in forest networks across the landscape will provide maximum benefit for	**N**	**P**	**++**	**++**	**++**	

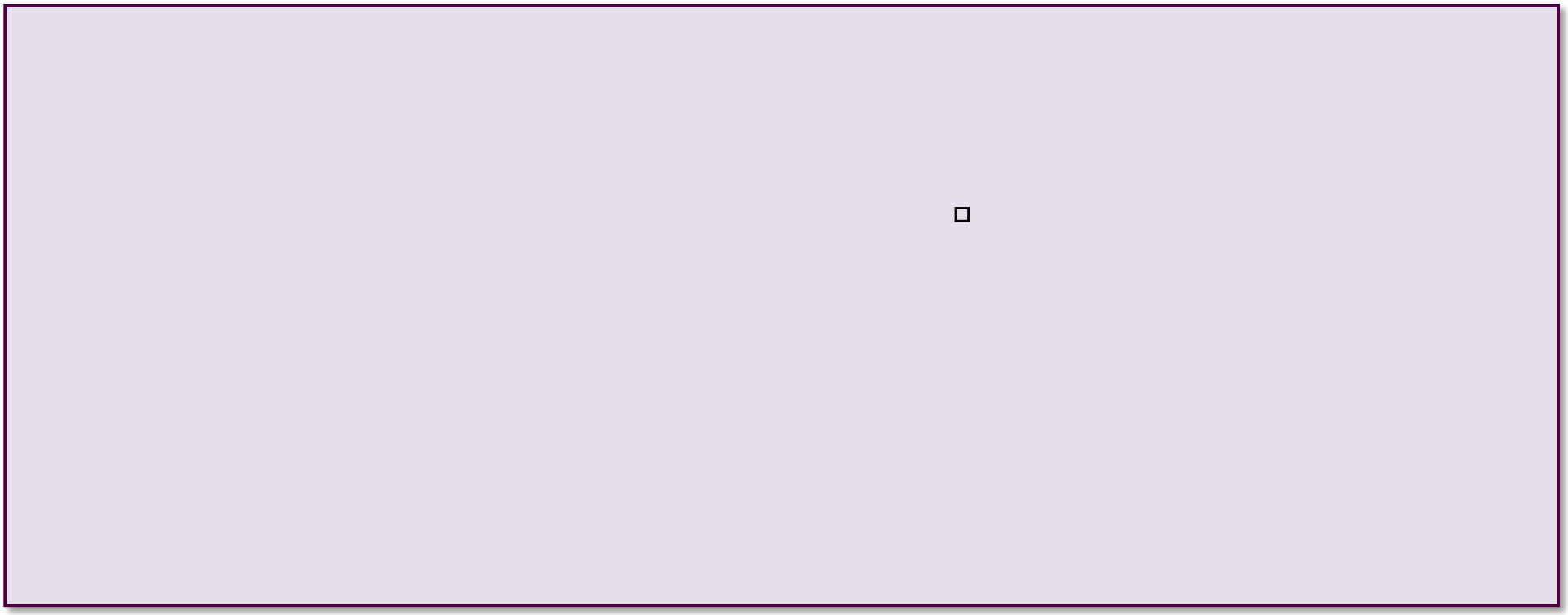
Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	the special qualities of the CNP						
Reasonable Alternative: No tree planting or regeneration to create Forest Habitat networks and to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no benefit to landscape quality						
Montane Woodland	Montane woodland is a missing habitat in most of the upland areas within the CNP. Re-establishment of missing priority habitats-dwarf birch and montane willows will enhance the special landscape qualities	**N**	**P**	**++**	**++**	**++**	
Riparian Woodland	There is much opportunity for riparian woodland creation within the CNP, it provides a visual linkage along river catchments	**N**	**P**	**++**	**++**	**++**	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Aspen	Aspen stands add visual diversity to the landscape of the Straths in the CNP, an increase in cover will enhance the landscape visually and ecologically.			++	++	++	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland to improve habitat connection which will improve landscape qualities	R	P	++	++	++	
Ancient & Semi-natural woodland	This policy is aimed at restoring and enhancing small isolated patches of ancient woodland to improve habitat connection which will improve landscape qualities	R	P	++	++	++	
Harvesting	Low impact silviculture methods which are based around continuous cover methods to retain woodland landscape benefits	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Reasonable Alternative: No limits to clear-fell activity	Clear fell forestry practices have a negative impact on the special landscape qualities of the CNP	**R**	**P**	-	-	-	Limit clear fell activities to areas where there are no negative impacts on the special landscape qualities of the CNP as in the Preferred Option
Biosecurity, invasive species & wildfire	This policy will increase resilience of woodland to pests and disease and reduce the likelihood of large scale removal of infected trees	**N**	**P**	++	++	++	
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	**N**	**P**	++	++	++	
Employment	It is not predicted that this policy will have an effect			□	□	□	
Productive Woodland	Promotes the softening of productive conifer woodland edges through native broadleaved planting	**N**	**P**	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Natural Flood Management	Will enhance landscape connectivity	N	P	++	++	++	
Low carbon and carbon trading	This maximises the provisioning services of woodlands to provide locally sourced fuel for more homes	N	P	++	++	++	
Responsible access	Access is required for recreation and for woodland management, tracks and paths must integrate into the landscape and follow best practice guidelines	N	P	++	++	++	
Health	This policy will enhance peoples enjoyment and appreciation of the landscape. Research has shown that people prefer to be in places with greater ecological diversity with positive resulting effects on increased recreation in woodlands which benefit health	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Forest Culture	This policy will result in improved connection of local communities to their woodland heritage	N	P	++	++	++	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	An enhanced landscape with a focus on maximising biodiversity, landscape qualities, and historic and cultural assets is central to the Vision for the CFS	N	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit the landscape, restoring ecological functioning	N	P	++	++	++	
b. Enhance the condition of existing forests	Diverse woodlands are visually attractive throughout all seasons, this policy will maximise this benefit	N	P	++	++	++	
c. Restore lost or	Recognizes that these fragile	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
vulnerable forest ecosystems	remnants require action or they will be lost to the landscape, their presence adds structure and diversity and enhances landscape qualities						
d. Encourage natural regeneration of native forests	Increases native woodland habitat across the landscape and enhances Wildland	N	P	++	++	++	
e. Promote the creation and enhancement of productive forests	Promotes the softening of productive conifer woodland edges through native broadleaved planting	N	P	++	++	++	
f. Protect forests from disease and invasive species	This policy will protect woodland habitats and encourages the planting of diverse woodlands to increase resilience, protecting against large scale removal of diseased trees	N	P	++	++	++	
g. Increase employment in the forestry sector	This policy is not predicted to have an effect			□	□	□	
h. Encourage innovation	This policy will benefit the	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
in the use and marketing of native forest products	landscape in the longer term as more planting of native species is encouraged to fuel the market						
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	Large blocks of non-native species can represent reduced access and reduces the woodland experience of changing colours, diversity of species, birdsong and feeling of well being	**R**	**P**	--	--	--	Don't plant large blocks of non-natives close to settlements
i. Promote responsible access and active enjoyment of forests	This policy will encourage people to enjoy and value the woodland environment	**N**	**P**	++	++	++	
j. Promote community involvement in forest management	Encourages promotion of productive community use of woodlands for example small scale harvest to produce wood based products	**N**	**P**	++	++	++	
Policies							
Managed moorland	Woodland creation in combination with better managed moorland will benefit	**N**	**P**	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	the landscape qualities of the CNP						
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit both habitat types and the landscape qualities of the CNP	N	P	++	++	++	
Peatlands	Woodland creation in combination with better managed peatland will benefit both habitats and the landscape qualities of the CNP	N	P	++	++	++	
Deer management	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit the special landscape qualities of the park	N	P	++	++	++	
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit landscape qualities, however fencing can have negative impacts on access	N	T	-	-	-	Ensure there are gates in deer fencing to retain access through areas of planted woodland

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Reasonable Alternative: No Deer fencing	Will retain access through areas of woodland , however it may result in the failure of new planting schemes and therefore reduce the opportunity for enhanced woodland recreation	**N**	**P**	**?**	**?**	**?**	
Landscape and Wild Land	Woodlands will be integrated across the landscape creating habitat networks that will maximise the special landscape qualities and Wild land areas of the CNP	**N**	**P**	**++**	**++**	**++**	
Designated Sites	Landscape –scale habitat networks will be enhanced and provide maximum benefit for the special landscape qualities of the CNP	**N**	**P**	**++**	**++**	**++**	
Reasonable Alternative: No Tree Planting on Designated Sites	Reduced potential to enhance landscape qualities of the CNP	**R**	**P**	**-**	**-**	**-**	Allow tree planting or regeneration where it meets the objectives of the site designation eg montane woodland
Forest habitat networks	An increase in forest networks across the landscape will provide maximum benefit for	**N**	**P**	**++**	**++**	**++**	

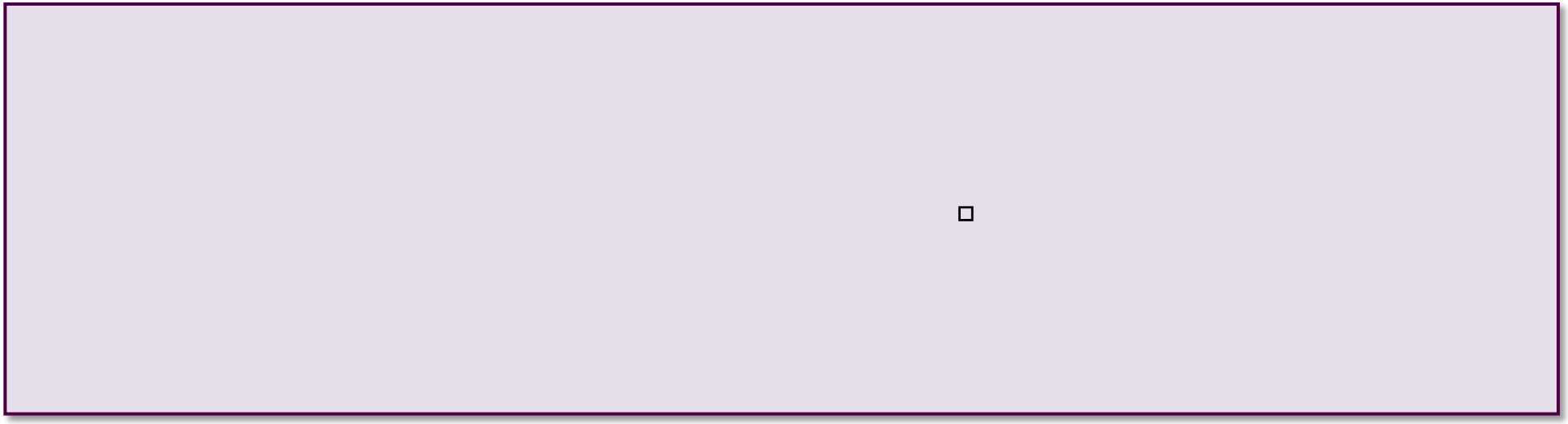
Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	the special qualities of the CNP						
Reasonable Alternative: No tree planting or regeneration to create Forest Habitat networks and to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no benefit to landscape qualities. This policy is not predicted to have an effect.			□	□	□	
Montane Woodland	Montane woodland is a missing habitat in most of the upland areas within the CNP. Re-establishment of missing priority habitats-dwarf birch and montane willows will enhance the special landscape qualities	**N**	**P**	++	++	++	
Riparian Woodland	There is much opportunity for riparian woodland creation within the CNP, it provides a visual linkage along river catchments	**N**	**P**	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Aspen	Aspen stands add visual diversity to the landscape of the Straths in the CNP, an increase in cover will enhance the landscape visually and ecologically.			++	++	++	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland to improve habitat connection which will improve landscape qualities	N	P	++	++	++	
Ancient & Semi-natural woodlands	This policy is aimed at retaining and enhancing ancient woodland sites. People enjoy the experience of walking through ancient woodland eg Caledonian Pinewoods with its range of tree ages from the granny pines to regenerating seedlings with a well established ground and shrub layer	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Harvesting	Low impact silviculture methods which are based around continuous cover methods to retain woodland landscape benefits	N	P	++	++	++	
Reasonable Alternative: clear-felling not limited in any way	Continuous cover will not be retained, instead there will be large areas where trees are removed which can often look stark and industrial 'a scar on the landscape' and reduce the feeling of naturalness and wildness which promotes wellbeing	N	P	-	-	-	Limit clear-fell activity in areas of high recreation or areas which can be seen from popular vantage points
Invasive non-natives	This policy will increase the resilience of woodlands to invasive non-natives and ensure continuation of woodland ecosystem service delivery	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	N	P	++	++	++	
Employment	It is not predicted that this policy will have an effect			□	□	□	
Productive Woodland	Promotes the softening of productive conifer woodland edges through native broadleaved planting	N	P	++	++	++	
Natural Flood Management	Will enhance landscape connectivity	N	P	++	++	++	
Low carbon and carbon trading	This maximises the provisioning services of woodlands to provide locally sourced fuel for more homes	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Responsible access	Access is required for recreation and for woodland management, tracks and paths must integrate into the landscape and follow best practice guidelines	N	P	++	++	++	
Health	This policy will enhance peoples enjoyment and appreciation of the landscape. Research has shown that people prefer to be in places with greater ecological diversity with positive resulting effects on increased recreation in woodlands which benefit health	N	P	++	++	++	



Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Vision: The forests of the Cairngorms National park are flourishing and expanding to provide new and better connected habitat, more diverse and enhanced landscapes, greater capacity to store carbon, outstanding recreation experiences and greater opportunities for enterprise, innovation and business development.	An enhanced landscape with a focus on maximising biodiversity, landscape qualities, and historic and cultural assets is central to the Vision for the CFS	N	P	++	++	++	
Objectives							
a. Creation of new woodlands that complement other land use	Creation of new woodlands in the right place will benefit the landscape, restoring ecological functioning and enhancing community access	N	P	++	++	++	
b. Enhance the condition of existing forests	Diverse woodlands are visually attractive throughout all seasons, this policy will maximise this benefit	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
c. Restore lost or vulnerable forest ecosystems	Recognizes that these fragile remnants require action or they will be lost to the landscape, their presence adds structure and diversity and enhances landscape qualities and user benefit	N	P	++	++	++	
d. Encourage natural regeneration of native forests	Increases native woodland habitat across the landscape and enhances Wildland Experience	N	P	++	++	++	
e. Promote the creation and enhancement of productive forests	Promotes the softening of productive conifer woodland edges through native broadleaved planting	N	P	++	++	++	
f. Protect forests from disease and invasive species	This policy will protect woodland habitats and encourages the planting of diverse woodlands to increase resilience, protecting against large scale removal of diseased trees so retaining greater access	N	P	++	++	++	
g. Increase employment in the	This policy will increase the availability of local jobs in the	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
forestry sector	woodland sector						
h. Encourage innovation in the use and marketing of native forest products	This policy will benefit the landscape in the longer term as more planting of native species is encouraged to fuel the market. It will also encourage local crafters and makers of bespoke furniture.	N	P	++	++	++	
Reasonable Alternative 3hi Encourage innovation in the use and marketing of *non-native* forest products	Large blocks of non-native species can represent reduced access and reduces the woodland experience of changing colours, diversity of species, birdsong and feeling of well being	R	P	--	--	--	Don't plant large blocks of non-natives close to settlements
i. Promote responsible access and active enjoyment of forests	This policy will encourage people to enjoy and value the woodland environment	N	P	++	++	++	
j. Promote community involvement in forest management	Encourages promotion of productive community use of woodlands for example small scale harvest to produce wood based	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	products						
Policies							
Managed moorland	This policy promotes habitat diversity which will enhance visitor enjoyment and encourage more visits, it also improves moorland habitat functioning enhancing provision of water regulation to reduce downstream flood risk for example			++	++	++	
In-bye agricultural land	Well designed, small-scale woodland creation schemes on crofts and farms will benefit both habitat and rural community access	N	P	+	+	+	
Peatlands	Restoration of peatlands will increase peatland functioning eg improving downstream water quality and regulating flow which will benefit downstream communities as it can reduce flood risk	N	P	++	++	++	
Deer management	This policy will encourage natural	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	regeneration and ensure the success of planting schemes that will benefit the special landscape qualities of the park and peoples enjoyment, increased upland woodland planting plays a role in reducing downstream flood risk						
Deer fencing	This policy will encourage natural regeneration and ensure the success of planting schemes that will benefit landscape qualities and woodland creation, however fencing can have negative impacts on access			?	?	?	Ensure there are gates in deer fencing to retain access through areas of planted woodland
Reasonable Alternative: No Deer fencing	Will retain access through areas of woodland , however it may result in the failure of new planting schemes and therefore reduce the opportunity for enhanced woodland recreation	N	P	?	?	?	
Landscape and Wild Land	Woodlands will be integrated across the landscape creating habitat networks that will maximise	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
	the special landscape qualities and Wild land areas of the CNP						
Designated Sites	Landscape –scale habitat networks will be enhanced and provide maximum benefit for the special landscape qualities of the CNP	**N**	**P**	**++**	**++**	**++**	
Reasonable Alternative: No Tree Planting on Designated Sites	Reduced potential to enhance landscape qualities of the CNP	**R**	**P**	**-**	**-**	**-**	Allow tree planting or regeneration where it meets the objectives of the site designation eg montane woodland
Forest habitat networks	An increase in forest networks across the landscape will provide maximum benefit for the special qualities of the CNP	**N**	**P**	**++**	**++**	**++**	
Reasonable Alternative: No tree planting or regeneration to create Forest Habitat networks and to connect habitats eg river catchments due to risk of disease and spread of invasives	No promotion of woodland expansion so no benefit to landscape qualities. It is not predicted that this policy will not have an effect			□	□	□	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Montane Woodland	It is not predicted that this policy will have an effect as these areas are not directly linked to where people live			□	□	□	
Riparian Woodland	It is not predicted that this policy will have an effect			□	□	□	
Aspen	It is not predicted that this policy will have an effect			□	□	□	
Woodland Remnants	This policy is aimed at restoring and enhancing small isolated patches of woodland to improve habitat connection and access	N	P	++	++	++	
Ancient & Semi-natural woodlands	This policy will benefit people's sense of place as ancient trees are valued and appreciated in the community. Ancient woodlands with their diverse tree species and age ranges, woodland flora and birdsong play a huge role in enhancing wellbeing, increased access is beneficial	N	P				

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Harvesting	Low impact silviculture methods which are based around continuous cover methods to retain woodland landscape benefits	N	P	++	++	++	
Reasonable Alternative: No limits to clear-fell	Would mean that clear fell was not limited near communities, causing reduction in enjoyment of industrial looking environment, reducing cover and so loose benefits of birdsong and squirrel spotting			-	-	-	Limit clear –fell operations
Biosecurity	This policy will increase resilience of woodland to pests and disease and reduce the likelihood of large scale removal of infected trees	N	P	++	++	++	
Invasive non-natives	This policy will increase the resilience of woodlands to invasive non-natives and ensure continuation of woodland ecosystem service delivery	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Rural Development	Rural development will directly benefit from an increased and well managed woodland resource	N	P	++	++	++	
Employment	Increased local employment will directly benefit local communities, small business and crafts people will be encouraged			++	++	++	
Productive Woodland	Promotes the softening of productive conifer woodland edges through native broadleaved planting	N	P	++	++	++	
Natural Flood Management	Will directly benefit downstream communities by reducing flood risk	N	P	++	++	++	
Low carbon and carbon trading	This maximises the provisioning services of woodlands to provide locally sourced fuel for more homes	N	P	++	++	++	

Outcome / Policy	Nature of Effect	Scale	Permanence	Significance			Mitigation and Enhancement
				Short Term	Medium Term	Long Term	
Responsible access	Access is required for recreation and for woodland management, tracks and paths must integrate into the landscape and follow best practice guidelines	N	P	++	++	++	
Health	Increasing access to biodiverse woodlands will directly benefit physical health and mental wellbeing	N	P	++	++	++	
Forest Culture	This policy will result in improved connection of local communities to their woodland heritage	N	P	++	++	++	

Appendix 7: Glossary

Air Quality Management Area (AQMA)

If a local authority finds any places where the air quality objectives are not likely to be achieved, it must declare an Air Quality Management Area there. This area could be just one or two streets, or it could be much bigger. Then the local authority will put together a plan to improve the air quality in this area.

Alternatives

These are different ways of achieving the objectives of the plan. Alternatives are also referred to as policys.

Baseline

Data that describes issues and condition at the inception of the SEA. Serves as a starting point for measuring impacts, performance etc. and is an important reference for evaluations

Biodiversity

The variety of life on Earth at all its levels, from genes to ecosystems, and the ecological and evolutionary processes that sustain it.

Biogenetic Reserve

Biogenetic Reserves area designated under the European network of 'living laboratories' representative of various types of natural environment found in Europe.

Buildings at Risk

Buildings, usually of some historic or cultural importance, that are considered to be at risk or under threat and placed on the Buildings at Risk Register.

Built Heritage

Built heritage represents the historical layers of our built environment in places made of brick, plaster, wood, metal and stone. Built heritage includes cathedrals and cemeteries, factories and fences, houses and hotels, museums and markets. It includes areas, precincts and streetscapes. It is the physical evidence of our cultural development.

Carbon Sink
A natural resource that takes in and stores more carbon than it releases. Important examples are peat bogs, trees and woodlands.

Catchment Area
An area of land bounded by watersheds draining into a river, basin, or reservoir. Also known as a catchment basin, drainage area or drainage basin.

Climate Change
A long term change in the 'average weather' experienced by a given region. 'Average weather' includes features such as temperature, wind patterns and precipitation.

Compensation
Providing for the equivalent of what has been lost. In biodiversity, compensation may be bigger or more than the actual original habitat due to the time delay, often years, for the compensation habitat to reach the size/quality of the original habitat.

Conservation Areas
Conservation areas are areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. Planning authorities may designate areas that are of special architectural or historic interest as Conservation Areas

Consultation Authorities
Organisations with a particular status for involvement in the SEA under the Regulations. In Scotland these are the Scottish Natural Heritage, Scottish Environmental Protection Agency, Scottish Ministers (Historic Scotland).

Contaminated Land
Land that has been polluted or harmed in some way making it unfit for safe development and usage unless cleaned.

Corbett
Corbetts are Scottish mountains that are 2,500–3,000 ft (762.0–914.4 m) high with a relative height of 500ft (152.4 m).

Core Path
Core paths are paths, waterways or any other means of crossing land to facilitate, promote and manage the exercise of access rights under the Land Reform (Scotland) Act 2003, and are identified as such in access authority (either a Local or National Park Authority) core paths plans.

Cultural Heritage
Relates to both the physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present for the benefit of future generations. Includes Scheduled Monuments and other significant archaeological sites and landscapes, listed buildings, conservation areas, historic gardens and designed landscapes included in the published inventory and others of national and corporate importance which are likely to be included.

Cultural Landscape
A landscape that is taken to embrace any kind of human activity that can be related to landscape. It includes the contrived and sometimes pre-eminent expressions of culture, like art or literature, in which the landscape may be depicted or described, as well as the prosaic and commonplace expressions, like the choice of building materials, which were perhaps not intended to create something valuable or special.

Cumulative Effects
The effects that result from changes caused by a project, plan, programme or policy in association with other past, present or reasonably foreseeable future plans and actions. Cumulative effects are specifically noted in the SEA Directive in order to emphasise the need for broad and comprehensive information regarding effects.

Ecological Connectivity
The natural link for species/genetic information to travel between habitats/populations to prevent/reverse the effects of habitats fragmentation and to allow species to adapt better to climate change.

Ecological Footprint
The ecological footprint is a measure of human demand on the Earth's ecosystems, the amount of natural capital used each year.

Ecosystem services
Ecosystem services are the products and services, such as oxygen production, water purification, carbon sequestration etc, which humans receive from functioning ecosystems. These services and products are provided by the natural environment when it is in good condition. For example, a peat bog in good condition can provide services of water purification, carbon sequestration and flood alleviation.

Enhancement
Measures envisaged to maximise the benefits of the positive actions of implementing the plan. Biodiversity enhancements are an improvement to a habitat/species population over and above what is already there. This could be through increasing/restoring habitats or increasing/improving opportunities for species.

Environment
Mostly used in an ecological sense to cover natural resources and the relationships between them. However, more broadly it is the surroundings or conditions in which all persons, animals, or plants live or operate.

Environmental Assessment
A tool for integrating environmental considerations into decision making by assessing the significant environmental effects. In the SEA Directive, an environmental assessment means "the preparation of an Environmental Report", the carrying out of consultations, the taking into account of the Environmental Report and the results of the consultations in decision making and the provision of information on the decision", in accordance with the Directive's requirements.

Environmental Report
Document required by the SEA Directive as part of an environmental assessment, which identifies, describes and evaluates the likely significant effects on the environment of implementing a plan or programme.

European Sites
For the purpose of the SEA, European sites comprise Special Areas for Conservation (SACs), Special Protection Areas (SPA), Ramsar sites and Biogenetic Reserves.

Flood

The temporary inundation of land not normally covered by water.

Flood Prevention
Works, including man-made walls, channels, embankments and flood storage areas that are designed to protect and area from flooding or to reduce its effects.

Flood Risk
A combination of the probability of a flood and of the potential for adverse consequences associated with a flood for human health, the natural and historic environment and economic activity.

Geoconservation
Geoconservation involves recognising, protecting and managing sites and landscapes identified as important for their rocks, fossils, minerals, or other geological or geomorphological features of interest.

Geodiversity
Geodiversity is the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them.

Geological Conservation Review (GCR) Sites
The GCR identifies those sites of national and international importance that show the scientific elements of the Earth heritage of Britain. These sites display sediments, rocks, fossils, and features of the landscape that make a special contribution to our understanding and appreciation of Earth science and the geological history of Britain,

Geomorphology
The branch of geology that is concerned with the structure, origin, and development of the topographical features of the earth's surface.

Habitats Regulation Appraisal (HRA)
An Appraisal of the potential effects of PPS on one or more International sites, both within the Responsible Authority's boundary and any sites that could be affected outside the boundary. The assessment looks at whether a PPS is likely to have a significant effect on an International site,

alone or incombination. If so, an Appropriate Assessment is carried out to see whether the PPS would have an adverse effect on site integrity. If it is found that the PPS is likely to have a significant negative impact on any of the sites, the plan will need to be amended accordingly.

Historic Environment
The historic environment includes ancient monuments, archaeological sites and landscapes, historic buildings, townscapes, parks, gardens and designated landscapes and features, both statutory and non-statutory. It also includes the location of historic features in the landscape and the patterns of past use.

Historic Landscape
A landscape which displays a myriad of features that are the result of the activities of the people who used and shaped the land to serve their needs in the past: they reflect the beliefs, attitudes, traditions and values of those people.

Household
A household is defined as:

- one person living alone, or
- a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area.

Household Waste
Waste from a domestic property, caravan, residential home or from premises forming part of a university, school or other educational establishment.

Indicator
A means by which change in a system or to an objective can be measured.

International Sites
See European Sites.

Inventory of Gardens and Designed Landscapes in Scotland

The Inventory of Gardens and Designed Landscapes in Scotland is a listing of gardens and designed landscapes of national artistic and/or historical significance.

The Inventory of Historic Battlefields
The Inventory of Historic Battlefields is a heritage register listing nationally significant battlefields.

Job Seekers Allowance (JSA)
JSA is an unemployment benefit that can be claim by those looking for work. It can be used as an indicator for employment rates.

Landfill
The permanent disposal of waste into the ground, by the filling of man-made voids or similar features, or the construction of landforms above ground level (land-raising).

Landscape Character
The distinct, recognisable and consistent pattern of elements that occur within a particular landscape and how these are perceived. It reflects particular combinations of geology, landforms, soils, vegetation, land use and human settlement.

Landscape Character Areas
Single unique areas that are the discrete geographical expression of a particular landscape type.

Local Authority
In Scotland, a Unitary Authority with the responsibility for all local government functions within its area.

Listed Buildings
A building or structure of special archaeological or historic interest. Listed buildings are graded A, B or C, with Grade A being the highest. Listing can include the interior and exterior of a building an any building or permanent structure. Historic Environment Scotland is responsible for designating listed buildings in Scotland.

Local Development Plan

The Local Development Plan is a statutory plan which sets out policies and specific proposals for the development and use of land in the county for approximately 5 years and provides strategic direction for the next 20. Local Development Plans were introduced in 2004 following the introduction of the Planning etc. (Scotland) Act 2006.

Mitigation
Measures to avoid, reduce or offset significant adverse effects.

Monitoring
Activities undertaken after the decision is made to adopt the plan or programme to examine its implementation. For example, monitoring to examine whether the significant environmental effects occur as predicted or to establish whether mitigation and enhancement measures are implemented and are working.

Muirburn
Prescribed burning used to improve spring grazing for sheep and deer, but is deployed mainly on driven grouse moors as rotational strip burning ('strip muirburn') of heather moorland to maintain a mosaic of young and old heather to provide forage and cover respectively for red grouse.

Munro
A Munro is a mountain in Scotland with a height over 3,000ft (914.4 m).

National Designations
For the purpose of the SEA, National Designations comprise areas statutorily designated by the UK government i.e. National Nature Reserves and Sites of Special Scientific Interest.

National Park Partnership Plan (NPPP)
The Cairngorms National Park Partnership Plan (NPPP) 2017-2022 will be the management plan for the Cairngorms National Park as required under section 11 of the National Parks (Scotland) Act 2000.

National Nature Reserves (NNR)
NNRs are statutory nature reserves designed under Part III of the National Parks and Access to the Countryside Act 1949.

National Scenic Area (NSA)
NSAs were designated in 1980/1981 in recognition of their outstanding scenery. Along with Scotland's two National Parks, they represent our nation's finest landscapes.

Natura 2000
Under the EU Habitats Directive, SPAs and SACs are together intended to form a European-wide network of protected areas designed to maintain or restore the distribution and abundance of species and habitats of EU interest. Many areas qualify for both SPA and SAC designation and as a matter of Government policy Ramsar Convention sites are afforded the same level of protection.

Natural Flood Management
Natural Flood Management means working with natural processes with the aim of restoring a catchment's natural capacity to deal with floods, thereby reducing flood risk and delivering other important social and environmental benefits.

Objective
A statement of what is intended, specifying the desired direction of change in trends.

Policys
See Alternatives.

Placemaking
A design process aimed at creating integrated communities that are based upon high quality, distinct, accessible areas, which will help, generate strong a sense of community enabling healthy lifestyles.

Planned Towns

A town that was carefully planned from its inception and is typically constructed in a previously undeveloped area.

Plans, Policies and Strategies
Part of Stage A of the SEA process, the 'scoping' stage, requires a thorough review of relevant plans, policies and strategies (PPSs) to be completed. This review is used to inform the SEA process, to ensure the plan is informed by up to date information and is also based on sound evidence.

Potentially Vulnerable Area (PVA)
Potentially vulnerable areas are areas identified by the Scottish Environment Protection Agency (SEPA) in accordance with section 13 of the Flood Risk Management (Scotland) Act 2009 where SEPA considers that significant flood risk exists or is likely to occur.

Prime Quality Agricultural Land
Prime Quality Agricultural Land is land identified as being of Class 1, 2 or 3.1 in the land capability classification for agriculture as developed by the Macaulay Land Use Research Institute.

Protected Areas
Protected areas represent the very best of Scotland's landscapes, plants and animals, rocks, fossils and landforms. They take the form of local, national and international designations, including National Nature Reserves, Sites of Special Scientific Interest, Special Protection Areas and Ramsar sites.

Quantitative Reasoning
Quantitative reasoning is the application of mathematical concepts and skills to solve real-world problems.

Ramsar Site
Wetlands of international importance designated under the Ramsar Convention. The designation recognises the fundamental ecological functions of these areas as well as their economic, cultural, scientific, and recreational value.

Responsible Authority
Under the Environmental Assessment (Scotland) Act 2005, the authority by which or on whose behalf the plan is prepared, or its successor.

Scheduled Monuments
A Scheduled Monument is a monument of national importance that the Scottish Ministers have given legal protection under the Ancient Monuments and Archaeological Areas Act 1979. There are over 200 classes of monuments from prehistoric standing stones and burial mounds, through the many types of medieval site (e.g. castles, monasteries, abandoned farmsteads and villages) to more the recent result of human activity, such as collieries and wartime pillboxes.

Scoping Report
The Scoping Report summarises the findings of Stage A of the SEA process and outlines such matters as identifying other relevant plans, policies and programmes, baseline information, environmental issues (problems and opportunities).

Scottish Index of Multiple Deprivation (SIMD)
The Scottish Index of Multiple Deprivation identifies small area concentrations of multiple deprivation across all of Scotland in a consistent way. It allows effective targeting of policies and funding where the aim is to wholly or partly tackle or take account of area concentrations of multiple deprivation.

Secondary Effects
This concept recognises that achieving economic growth has to be done in such a way that does not harm the environment or squander the natural resources we depend on, whilst at the same time distributing the wealth this creates equally to improve quality of life now and in the future.

Significant Environmental Effects
There is no statutory definition of significance. However, for the purposes of this assessment a significant effect has been defined as an effect that, either in isolation or in combination with others, should, in the opinion of the assessor, be taken into account in the decision-making process.

Sites of Special Scientific Interest (SSSI)
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

Soil Sealing

The covering of the soil surface with impervious materials as a result of urban development and infrastructure construction. Sealed areas are lost to uses such as agriculture or forestry while the ecological soil functions are severely impaired or even prevented (e.g. soil working as a buffer and filter system or as a carbon sink). In addition, surrounding soils may be influenced by change in water flow patterns or the fragmentation of habitats.

Special Areas of Conservation (SAC)
SACs are strictly protected sites designated under the EC Habitats Directive.

Special Protection Areas
SPAs are strictly protected sites classified in accordance with Article 4 of the EC Birds Directive.

Strategic Environmental Assessment
Strategic Environmental Assessment is a systematic method for considering the likely environmental effects of certain PPS. It is required under the SEA Directive.

Sustainable Development
This concept recognises that achieving economic growth has to be done in such a way that does not harm the environment or squander the natural resources we depend on, whilst at the same time distributing the wealth this creates equally to improve quality of life now and in the future.

Sustainable Drainage Systems (SuDS)
An approach to managing rainfall and run off in developments, with a view to replicating natural drainage. SuDS also aim to reduce pollution, control flooding and often provide environmental enhancements.

Synergistic Effects
A type of cumulative effect where two or more impacts combine to produce a complex interaction where the effect may be larger or smaller than component impacts. Synergistic effects are specifically noted in the SEA Directive in order to emphasise the need for broad and comprehensive information regarding the effects.

SEA Directive

Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment.

Waste
Waste is any material or object that is no longer wanted and requires disposal. If a material or object is re-usable, it is still classed as waste if it has first been discarded.

Waste Hierarchy
A framework for securing a sustainable approach to waste management. The Revised Waste Framework Directive 2010 outlines a new hierarchy which should act as a 'priority order' in waste prevention, legislation and policy. The amended hierarchy is Prevention; then Preparing for reuse; Recycling; Other recovery including energy recovery; and finally Disposal.

Wellbeing
A holistic, subjective state which is present when a range of feelings, among them energy, confidence, openness, enjoyment, happiness, calm and caring, are combined and balanced.

Wild Land
Large areas whose largely semi-natural landscapes show minimal signs of human influence. These areas can be mountains and moorland, stretches of undeveloped coast or large areas of peat bog.

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