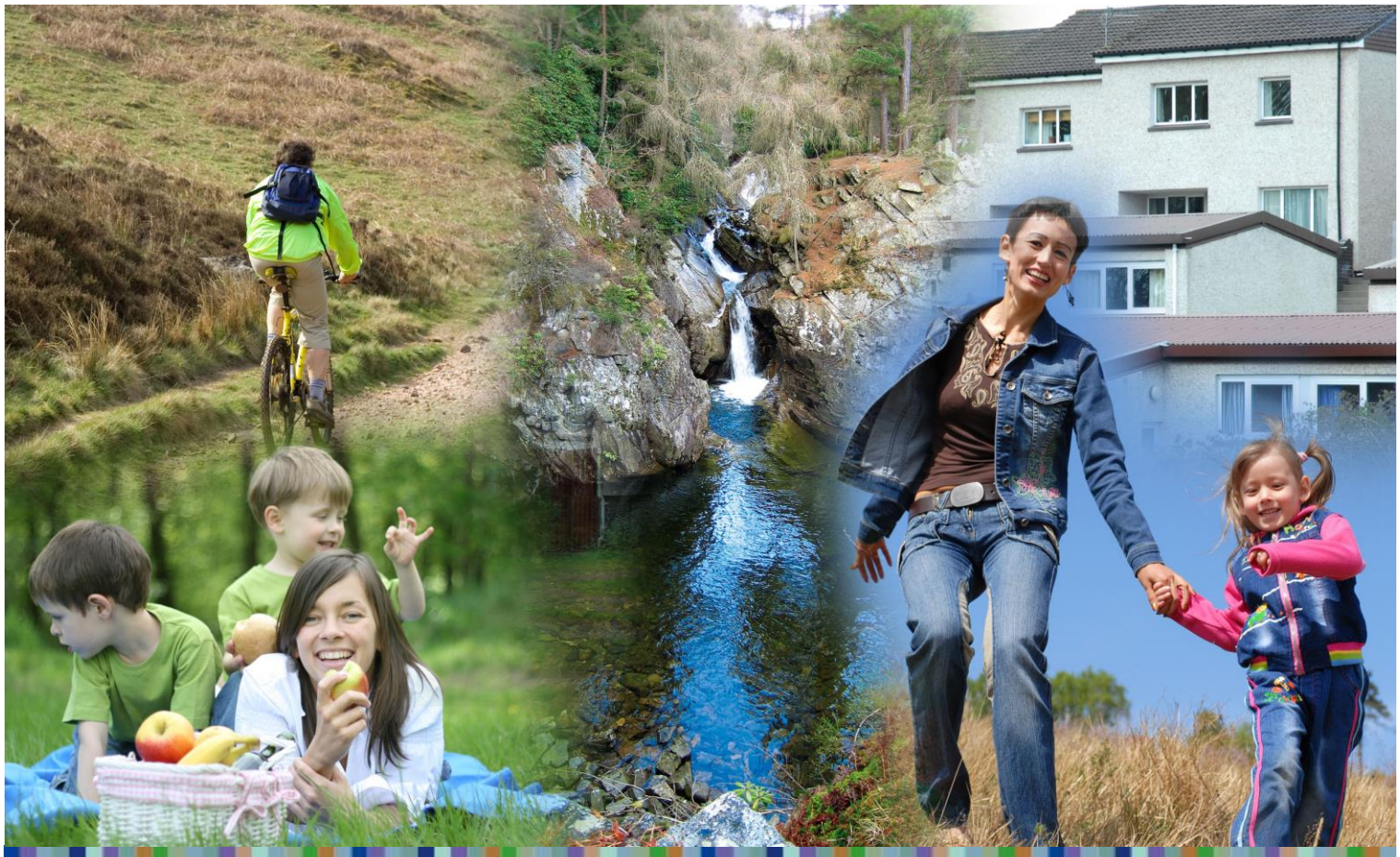
PERTH & KINROSS COUNCIL

SEA Environmental Report

Perth & Kinross draft Forest Plan



SEA ENVIRONMENTAL REPORT – COVER NOTE
PART 1

To:

SEA.gateway@scotland.gsi.gov.uk

or

SEA Gateway
Scottish Government
Area 1 H (Bridge)
Victoria Quay
Edinburgh
EH6 6QQ

PART 2

An Environmental Report is attached for:

Perth and Kinross Draft Forest Plan

The Responsible Authority is:

Perth and Kinross Council

PART 3

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PART 4

Signature (electronic signature is acceptable)	
Date	

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NON-TECHNICAL SUMMARY

This is the non-technical summary of the Environmental Report for Perth and Kinross Forest Plan. It has been prepared by Perth and Kinross Council as part of the Strategic Environmental Assessment process.

Perth & Kinross Council must determine whether a full Strategic Environmental Assessment (SEA) is required as part of the Environmental Assessment (Scotland) Act 2005 for all new plans, policy and strategies. This also fulfils a European directive that requires SEA's to be carried out for certain kinds of plans.

Perth and Kinross Council determined that the Draft Forest Plan required an SEA to be undertaken to identify and minimise any environmental effects the Forest Plan may cause.

The Main focus of the SEA is that by making sure environmental features (e.g. plants, animals, climate, air quality, human health, water quality and historical remains) are considered as the Plan is made. This ensures that the Plan is less likely to be detrimental to these features. The environmental features are considered through the SEA in two main ways;

Screening stage: Initially, information is gathered with help from relevant consultation authorities on all the environmental features in order to predict whether significant effects are likely to arise from implementation of the Plan
Scoping stage: if the SEA identifies "significant" environmental effects, information on how the Plan should be changed and measures implemented to reduce the harmful effects of the Plan is gathered with help from the consultation authorities.
SEA Report: The final outcome of the Plan should state how it will ensure minimum harm and maximum benefit to the environment.

The SEA process is also about making the planning process transparent, making the information used in environmental predictions for the Plan open to the public. The public have an opportunity to comment on the SEA process once the environmental report is published, along with the Draft Forest Plan.

The Forest Plan shows that the majority of the woodlands will be managed on a low intervention continuous cover basis i.e. no clear felling and replanting of woodlands. The proposed management of the woodlands specified in the Forest Plan has been assessed and consulted on and deemed to have no significant effect on the landscape and designated sites. Sites that were anticipated to have significant effect from the Forest Plan have been consulted on by the relevant authority and means of avoidance or mitigation measures have been considered. (See table 2.2)

Whilst some existing woodlands will be partially restructured as a consequence of the plan, no new planting has been suggested on or near designated sites.

Overall the Forest Plan is expected to have a positive effect on the health and wellbeing of the authority population through encouraging taking part in active recreation and education promoted by use of the Woodland network for walking, cycling, bird watching, orienteering, gathering wild food. The Forest Plan will also have a positive effect on biodiversity, soil, air, water quality and cultural heritage. (See appendix 2 Compatibility of PPS objectives)

Mitigation.

In areas where the SEA determined there may be potential negative impacts on the environment, consultation has taken place with local and government experts, such as SNH, Historic Scotland, RSPB, Scottish Wildlife Trust and Perth and Kinross Heritage Trust. Through this discussion and liaison process, solutions have been found to minimise any potential negative impacts identified.

Monitoring.

Once the Forest Plan and SEA has been formally adopted, Perth and Kinross Council intends to continue monitoring the effects of the plan. In addition, PKC will work with SNH, HS, and SEPA and utilise ongoing monitoring schemes to help provide a picture of the impact of the Plan. This would include SNH – site condition monitoring. Consultation with experts will take place if any of the designated sites are identified to be degrading through the monitoring process.
All the monitoring results arising from the SEA will be reviewed alongside the Forest Plan, every 5 years.

Consultation.

This SEA has gone through a 3 step process, (see table 1.1) Screening Report, Scoping Report and finally this Environmental Report. At each stage the Consultation Authorities (SNH, SEPA, and HS) have been consulted on the depth, level and content of the SEA. Public consultation has been possible for the Scoping report following its publication along with the Draft Forest Plan at the informal consultation period between June 2011 and June 2013. The public will have the opportunity to comment on the Environmental report during the formal consultation between April 2014 and June 2014.

This report will be available, along with the Draft Forest Plan on Perth and Kinross Council web site and through libraries and public centres and offices. Comments should be sent to Richard Brough, Tree & Woodland Policy Officer, The Environment Service, Perth and Kinross Council, Pullar House, 35 Kinnoull Street, Perth PH1 5GD. rbrough@pkc.gov.uk

SECTION 1. INTRODUCTION

1.1 Purpose of this Environmental Report and summary of the SEA process

As part of the preparation of the Forest Plan, Perth and Kinross Council is carrying out a Strategic Environmental Assessment (SEA). SEA is a systematic method for considering the likely environmental effects of certain Plans, Policies and 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.

SEA is required by the Environmental Assessment (Scotland) Act 2005. The key SEA stages are:

Screening	determining whether the Plan is likely to have significant environmental effects and whether an SEA is required
Scoping	deciding on the scope and level of detail of the Environmental Report, and the consultation period for the report – this is done in consultation with Scottish Natural Heritage (SNH), The Scottish Ministers (Historic Scotland) and the Scottish Environment Protection Agency (SEPA)
Environmental Report	publishing an Environmental Report on the Plan and its environmental effects and consulting on that report
Adoption	providing information on: the adopted plan; how consultation comments have been taken into account; and methods for monitoring the significant environmental effects of the implementation of the plan
Monitoring	monitoring significant environmental effects in such a manner so as to also enable the responsible authority to identify any unforeseen adverse effects at an early stage and undertake appropriate remedial action.

The purpose of this draft Environmental Report is to:

- Provide information on Perth and Kinross draft forest plan
- Identify, describe and evaluate the likely significant effects of the Plan and its reasonable alternatives;
- Provide an early and effective opportunity for the Consultation Authorities and the public to offer views on any aspect of this Environmental Report.

1.2 Key facts relating to Perth and Kinross Draft Forest Plan.

Name of Responsible Authority	**Perth and Kinross Council**
Title of Plan	**Perth and Kinross Draft Forest Plan**
What prompted the Plan (e.g. legislative, regulatory or administrative provision)	The creation of the Forest Plan process by the Forestry Commission and the need to manage the Councils woodlands in line with the Scottish Forestry Strategy.
Subject (e.g. transport)	Woodland Management
Period covered by Plan	2014-2034
Frequency of updates	These will link in with local development plan updates in the future which are expected take place every 5 years under present planning legislation.
Area covered by Plan	36 sites – 256 Ha
Purpose and/or objectives of Plan	To bring together all of the woodlands owned by the Council along with urban greenspaces with significant tree cover in one management plan.
Contact point	Richard Brough Greenspace Policy Officer (Trees & Woodlands). Pullar House, 35 Kinnoull Street, Perth. PH1 5GD rbrough@pkc.gov.uk Tel. 01738 475282

1.3 SEA activities to date

Table 1.1 Summarises the SEA activities to date in relation to Perth and Kinross Draft Forest Plan

Table 1. 1 SEA activities to date

SEA Action/Activity	**When carried out**	**Notes** (e.g. comment on data availability, particular issues or any advice from the Consultation Authorities that has now been taken into account)
screening to determine whether the PPS is likely to have significant environmental effects	May 2011	SNH & HS agreed that SEA would be appropriate for protection and enhancement of designated sites. SEPAs comment was that the plan would have no significant effect within their water/ pollution protection remit. Perth and Kinross Council determined that an SEA was required for the Draft Forest Plan.
scoping the consultation periods and the level of detail to be included in the Environmental Report	May 2013	Scoping report sent round to the SEA Gateway and interested parties and stakeholders who were consulted on content and inclusion of information in scoping report (e.g. TLBAP, and PKC Transport, Planning, environment services). SNH, HS and SEPA comments on providing appropriate avoidance of disturbance/ mitigation measures for designated sites and also of identifying more identifiable indicators for monitoring effects on designated sites.
Outline and objectives of the PPS	Dec 2013	
Relationship with other PPS and environmental objectives	Dec 2013	
Environmental baseline established	Dec 2013	
Environmental problems identified	Dec 2013	
Assessment of future of area without the PPS	Dec 2013	
Alternatives considered	Dec 2013	

Environmental assessment methods established	Dec 2013	Environmental Assessment Methods decided on in conjunction with SNH/ HS and Perth and Kinross Council.
SEA Action/Activity	**When carried out**	**Notes** (e.g. comment on data availability, particular issues or any advice from the Consultation Authorities that has now been taken into account)
Selection of PPS alternatives to be included in the environmental assessment	Dec 2013	Established in the scoping report
Identification of environmental problems that may persist after implementation and measures envisaged to prevent, reduce and offset any significant adverse effects	Dec 2013	Identified in conjunction with SNH/ HS/ SEPA
Monitoring methods proposed	Dec 2013	Decided on in conjunction with SNH/ HS and Council
Consultation timescales • Timescale for Consultation Authorities • Timescale for public	April 2014 – June 2014	Draft Forest Plan and SEA Environmental report out for Public consultation at the same time.
Notification/publicity action		Implementation

SECTION 2. CONTEXT

Perth and Kinross has a historic, diverse and substantial woodland resource and the favourable soil and climatic conditions make it better than many other parts of Scotland for growing high quality trees. 'We have a unique woodland asset worth being proud of and worth looking after'. The Perth and Kinross Forest and Woodland Strategy PKFWS sets out a vision for Trees, woodlands and forests from 2010 to 2030. It states that 'Woodlands and forests make a significant contribution to Perth and Kinross way of life, supporting the region's economy through timber production and as an important back drop to the tourist industry' The PKFWS identifies appropriate locations for woodland expansion and recommends management practices of existing woods to optimize the contribution that our woods and forests can make to social, environmental and economic benefits'. There are 88,315ha of woodland in Perth and Kinross. The area covered by this Forest Plan (36 sites - 256.46ha) is a small but not insignificant part of this and as publically owned, the woodlands contained within this plan make a significant and positive contribution to the social and environmental benefits woodlands bring to the region. The Perth and Kinross Forest & Woodland Strategy and this Forest Plan has based its strategy on the Scottish Forestry Strategy themes.

2.1 Outline and Objectives of the Draft Forest Plan:

The Council's Forest Plan is a strategic plan that describes the management arrangements for our woodlands over a 20 year period. The plan reflects the objectives of the Scottish Government's Scottish Forestry Strategy and the Council's draft Perth and Kinross Forest and Woodland Strategy. It brings together the management objectives, silvicultural prescriptions, environmental, social and landscape factors into a comprehensive plan that aims to deliver long-term benefits through sustainable forest management.

Perth and Kinross Council owns and manages woodland and trees across the entire local authority area. These range from:

- woodland of ancient semi-natural origin, which have been designated Sites of Special Scientific Interest; Kinnoull Hill in Perth, the Birks of Aberfeldy and Den of Alyth
- woodland of ancient semi-natural origin on non-designated sites; the Knock of Crieff, Lady Mary's Walk, and Puddock Wood also in Crieff, and Black Spout Wood in Pitlochry
- large parks with a wide range and number of trees of considerable character such as the North Inch and South Inch in Perth and MacRosty Park in Crieff
- smaller parks such as Davie Park and Loon Braes in Rattray and Scone Public Park which provide strong landscape features in the urban environment
- wooded strips which have acquired local character, such as Luncarty Woods and Riverside Avenue, Invergowrie.

These areas are important community assets; many are exceptional visitor attractions and are important landscape features. They provide local to national examples of cultural heritage and are rich in biodiversity. The Council aims to

manage its woodland resource through the development of a Forest Plan, bringing together these diverse woodlands under a unified regime. This development is being undertaken in conjunction with the process provided by the Forestry Commission for writing Forest Plans and taking account of Scottish Government policies and initiatives.

There is no legal requirement to produce the Forest Plan but this process is seen to be the most economic, practical and efficient process for managing the Council's woods and trees for the benefit of its communities and the environment. The Forest Plan will help to demonstrate how the draft Perth and Kinross Forest and Woodland Strategy may be realised as part of the national planning framework for forestry. The longer-term approach to management for the Forest Plan also provides vision, consistency and effective financial planning. If the Forest Plan is not implemented these benefits will not be realised.

The proposals must meet the requirements set out in the UK Forestry Standard (UKFS). The standard sets out the criteria and standards for the sustainable management of forests and woodlands in the UK and aims to promote good forestry practice.

The Forest Plan themes and objectives relate closely to the Scottish Forestry Strategy (see table 2.1 below) and aim to promote sustainable forest management with a wide range of economic, social and environmental benefits.

Perth & Kinross Council's draft Forest Plan and the draft Perth & Kinross Forest & Woodland Strategy have a common vision and seek to ensure that:

'Perth and Kinross will be an area of exceptional trees, woods and forests, which enhance the natural and cultural environment, support and strengthen the local economy adding value where possible, and are accessible to local people and visitors alike across a range of activities and interests.'

The Forest Plan will also take account of:

Perth and Kinross Single Outcome Agreement
http://www.pkc.gov.uk/article/3088/Single-Outcome-Agreement

The Perth and Kinross Community Plan 2013 - 2018
http://www.pkc.gov.uk/search?q=community+plan&go=Go

Perth & Kinross Council's Corporate Plan 2013-2018
http://www.pkc.gov.uk/search?q=corporate+plan

And emphasis will be on the Corporate Plan's vision, aims and objectives:

"Our vision is of a confident and ambitious Perth and Kinross with a strong identity and clear outcomes that everyone works together to achieve. Our area will be vibrant and successful; a safe, secure and healthy environment; and a place where people and communities are nurtured and supported."

And on The Environment Service's Service Key Objectives:

1. To promote sustainable development
2. To develop and support a thriving and inclusive economy and promote Perth & Kinross as a place to live, work and visit
3. To manage, maintain and enhance the public realm and provide safe and convenient access for all users
4. To protect and promote the health, safety and wellbeing of communities
5. To provide efficient and effective service.

Perth and Kinross Council the Environment Service Business Management and Improvement Plan 2012 – 2015
http://www.pkc.gov.uk/search?q=business+management+and+improvement&searchmethod=ANY&numresults=500&history=1%2C11%3A1%2C14&next=Next

And taking account of the principles laid down in the Council's Placemaking Guide http://www.pkc.gov.uk/placemakingguide

The Forest Plan will develop the themes of national and local forest strategies:

- Theme 1 - Climate Change - increasing the contribution of forests to help tackle climate change.

The Council's assets are considered to make a significant contribution in the local context in mitigating the effects of climate change. The Council's asset is fixed in providing continuous woodland cover.

- Theme 2 - Timber - encouraging a diverse forest estate and maximise the economic potential of the region's timber resources.

The Council's assets are not capable of producing any significant quantities of timber, but niche markets may attract potential buyers of small quantities of timber.

- Theme 3 - Business Development – supporting rural diversification and promote a diverse range of forest based enterprises.

The Council's woodland assets contribute a significant amount to tourism and provide a setting that can promote good business and branding, such as Perthshire Big Tree Country.

- Theme 4 - Community Development - improving the quality of life and well-being of people by supporting community development.

There are opportunities to achieve closer involvement between communities and their environment, and developing opportunities for joint management.

- Theme 5 - Access and Health - encouraging public access and enjoyment through woodlands and forests to help improve physical and mental health.

There are significant opportunities for promoting health on the sites within the Forest Plan in a variety of settings, from easy access to the more demanding, with links to the wider network of the Core Paths Plan and also places that provide relaxation and a feeling of wellbeing to promote mental health.

- Theme 6 - Environmental Quality - protecting the environmental quality of our natural resources (water, soil and air), contributing to and improving our scenery, and helping to make the most of our unique historic environment.

The Council's woodland assets are able to make a significant contribution in the local context in mitigating the effects of flooding, soil erosion and pollution. The Council's asset is fixed in providing continuous woodland cover.

- Theme 7 - Biodiversity - helping to restore, maintain and enhance biodiversity, and increasing awareness and enjoyment of it.

The Council's assets provide some of the best examples of their kind of semi-natural woodland in Perth and Kinross. Wooded areas also help to provide connectivity with adjacent wooded areas, or provide a woodland resource in an otherwise impoverished environment. There are many opportunities for community involvement and education.

The Perth & Kinross Forest and Woodland Strategy is based on the Scottish Forestry Strategy themes. For each, key actions have been identified, and the table below sets out these key actions along with examples of how the management of the woodlands in the draft Forest Plan will support them.

Table 2.1 Scottish Forestry Strategy Themes

Theme	Key Actions/Objectives	Specific Management Examples
Climate Change	Encourage the expansion of appropriate new woodlands to secure carbon sequestration benefits and minimise woodland removal.	There is no opportunity for new woodland creation, however all woodlands will be retained and any individual tree removal will be replaced with planted or regenerated trees.
Timber	Promote the establishment and management of broadleaved woods to promote quality timber.	Oaks at Black Spout Wood will be thinned by quality, and individual trees sold to local high end users (furniture, wood turning, and beams).
Business Development	Support the establishment of short rotation coppicing for energy production.	The ash at Puddock Wood and the Knock of Crieff should be coppiced on a 10 year cycle and the removed timber sold as firewood.
Community Development	Promote the provision of welcoming and well managed woodlands in and around communities. Encourage the greater use of woodlands for outdoor learning. Maintain constructive engagement with communities on forestry related issues.	All the woodlands have public access and this is to be maintained and improved. Interpretation is to be installed in all woods and the public have responded to the consultation on this plan, have formed user groups (e.g. Kinnoull Woods Group) as well as informal contact with rangers.
Access and Health	Maintain Core Paths, rights of way and other well used routes through woodland. Seek opportunities to improve access where appropriate during lifetime of the plan.	Interpretation is to be installed in all woods. Core paths, rights of way and other well used routes maintained. Core paths way marked to promote access.

Theme	Key Actions/Objectives	Specific Management Examples
Environmental Quality	Encourage sensitive forest management to enhance the visual impact of woodlands on internal and external views.	Ensure the views are not reduced from the summits on The Knock of Crieff and Kinnoull Hill by tree removal and selectively removing regeneration. Ensure views to the water are not blocked out at the Birks of Aberfeldy, Blairgowrie riverside, Den of Alyth, and Lady Mary's walk by selectively removing regeneration.
Biodiversity	Restore and improve the condition of native woodlands. Encourage conservation effort on species listed in Species Action Plans which are dependent on woodland management.	The gradual removal of non-native species, (apart from those with strong cultural connection to the sites), will restore most of the sites to native woodlands. Species listed in the Tayside Biodiversity Action Plan will be supported through management practices such as retaining standing deadwood. The Council will work with SNH and FCS to maintain a sustainable deer population. (See Deer Management Statement Appendix 10)

2.2 Relationship with other Plans, Policies, Strategies and environmental objectives.

The Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes an outline of the Plans relationship with other Plans, policies and strategies and how environmental protection objectives have been taken into account in the Plan preparation. This section covers these issues and describes the policy context within which the Plan operates, and the constraints and targets that this context imposes on the Plan. **For list of linked PPS - See Appendix 3**

Table 2.2 Scoping of Environmental Topics

Environmental Topics	Scoped In	Scoped Out	Justification for Decision
Biodiversity, Flora and Fauna	✓		Three of the sites included within the Forest Plan are Sites of Special Scientific Interest. Some sites fall within the River Tay Special Area of Conservation and the Firth of Tay and Eden Estuary Special Area of Conservation and Special Protection Area. Some sites contain European protected species or species which are restricted, nationally, regionally and locally. Many of the other sites have been wooded continuously for a considerable period of time and within urban settings can provide wildlife of local interest. There are some opportunities for improving biodiversity links between sites, such as small urban woodlands in Perth. The effect of the Forest Plan will be positive: • Opportunities for habitat improvement • Opportunities for raising awareness and education on biodiversity issues • Maintaining links with similar or complimentary habitats.
Environmental Topics	**Scoped In**	**Scoped Out**	**Justification for Decision**

Population	✓		The sites are very much part of the community. Opportunities for public access and involvement will be maximised while taking into account of any nature conservation designations or other sensitivities. Local woods will be promoted in urban areas for the first time. Public safety will be addressed by monitoring trees for signs of decay and damage. The effect of the Forest Plan will be positive: • Opportunities for improving access • Opportunities for promoting access • Containing pressures within sensitive areas by direction and promoting the Scottish Outdoor Access Code.
Human Health	✓		The Forest Plan will help provide opportunities to help deliver the Scottish Government's Let's Make Scotland More Active: a Strategy for Physical Activity to contribute towards improving the health of the population. The Council's Ranger Service has been delivering the Woods for Health initiative within the area of the Forest Plan and is demonstrating the potential for the improvement of mental health. The effect of the Forest Plan will be positive: • Opportunities for promoting sites for physical and mental health.
Soil	✓		Soil conservation will be maintained by continuing existing tree cover; any felling will be small and will not contribute to erosion. The effect of the Forest Plan will be positive: • Maintaining a healthy, continuous-cover, diverse forest stand with appropriate species.
Water	✓		Water quality will be maintained by retaining the existing tree cover, which helps to reduce the effects of flooding and contributes to water quality and biodiversity in riparian habitats. The effect of the Forest Plan will be positive: • Maintaining a healthy, continuous-cover, diverse forest stand with appropriate species.
Air	✓		Trees will reduce levels of suspended material, such as dust and vehicle exhausts in urban areas, and will reduce levels of carbon dioxide. The effect of the Forest Plan will be positive: • Maintaining a healthy, continuous-cover, diverse forest stand with appropriate species.
Environmental Topics	**Scoped In**	**Scoped Out**	**Justification for Decision**

Climatic Factors	✓		The tree and woodland assets contribute to the stabilising influence of capturing carbon dioxide and reducing greenhouse gases that lead to climate change. The effect of the Forest Plan will be positive: • Maintaining a healthy, continuous-cover, diverse forest stand with appropriate species.
Material Assets	✓		Taking into account all of the topics in this section the public and environmental value of the Council's woodlands is greatly in excess of its timber value. The effect of the Forest Plan will be positive: • Maintaining a resource contributing to local identity and tourism.
Cultural Heritage	✓		The Council owns many trees which have considerable merit, either by their age or being of unusual species or both, and there are many distinctive features such as avenues; examples being the North and South Inch. Some sites have features of archaeological importance, such as the Iron Age homestead in Black Spout Wood at Pitlochry, or the Kinnoull Tower folly. There are no listed Gardens and Designed Landscapes included in the Forest Plan, but many sites have equal value. The effect of the Forest Plan will be positive: • Maintaining a resource contributing to local identity and tourism.
Landscape	✓		The Council's woodlands are very important landscape features in rural areas, on the urban fringe and within settlements. Some sites have poor woodland structure, such as the conifer plantation on St. Magdalene's Hill in Perth, which require restructuring. Sites like Kinnoull Hill, the Birks of Aberfeldy and Black Spout Wood, Pitlochry have significant features of geological diversity, which are enhanced by the continuous woodland cover. The effect of the Forest Plan will be positive: • Maintaining a healthy, continuous-cover, diverse forest stand with appropriate species. • Opportunities for landscape improvement by restructuring using appropriate species. • The Council will work with SNH and FCS to maintain a sustainable deer population. (See Deer Management Statement Appendix 10)

2.3 Relevant aspects of the current state of the environment.

Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes a description of "the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme", and "the environmental characteristics of areas likely to be significantly affected". This section aims to describe the environmental context within which the Plan operates and the constraints and targets that this context imposes on the Plan.

Perth and Kinross is located in the heart of the country just north of the central belt bordering Aberdeenshire, Angus, City of Dundee, Fife, Clackmannanshire, Stirling, Argyll and Bute and Highland Council areas (Figure 1.1). Covering 5,286 km2, Perth and Kinross is the fifth largest unitary authority in Scotland and is one of outstanding natural beauty, encompassing both highland and lowland landscapes.

The area is characterised by a diverse mix of rural and urban land use, from the main population centre of Perth to extremely remote communities such as Kinloch Rannoch in the highland area. In 2005 the area had a population of 138,400 (approximately 30% of which resided in Perth) making it the 14th largest population in a Scottish unitary authority.

Table 2.3 Key Baseline information – Perth & Kinross

Baseline facts		
Resource	**Key facts**	**Data Source**
Biodiversity	4.6% of Scotland's priority Species 3.5% of Scotland's semi natural woodland UK BAP Species include:-Otter, Water vole, Red Squirrel, Capercaillie, Spotted flycatcher, Scottish crossbill, Great crested Newt, 3x wood ant species Pearl bordered fritillary, Slender naiad, Twin flower, Small cow-wheat & Juniper. Tayside BAP Species include:- Otter, Water vole, Red Squirrel, Capercaillie, Spotted flycatcher, Scottish crossbill, Great crested Newt, 3x wood ant species, Pearl bordered fritillary, Slender niad, Twin flower, Small cow-wheat & Juniper. Tayside BAP Habitats: Mesotrophic Lochs, Native Pinewoods & Upland Oakwoods.	SOE Report 2007 UK & Scottish BAP Tayside LBAP
Resource	**Key facts**	**Data Source**
Designated nature conservation sites	118 SSSI's (both biological and geological) 4 Ramsar sites 8 SPAs 2 NNRs 22 SACs 1 LNRs 61 SWT Wildlife sites. 6 SWT Wildlife Reserves	SNH web site 2014 SWT Pers. com

Designated Historic environment	750 Scheduled ancient monuments 8500 Other archaeological sites (non-designated) 360 Linear archaeological sites. 35 Conservation areas 162 A Listed buildings 1457 B Listed Buildings 1449 C listed Buildings	PKHT Pers.com PKC Buildings conservation Pers. com
Cultural landscapes	5 NSAs 42 Gardens and designated landscapes **% of Land use in Perth and Kinross (Hectares)** 33.0 % Agriculture 178,788 ha 15.6 % Forestry/woodland 84,444 ha 44.6 % Scrub/ Heath/Moor 242,039 ha 2.9 % Water Bodies and Bog 15,701 ha 0.6 % Inter-tidal sand and mud 3,069 ha 0.2 % Inland Rock 857 ha 0.0 % Minerals and waste 127 ha 2.0 % Urban (Industrial/commercial) 10,634 ha 0.9 % Urban (Predominantly Residential) 4,677 ha 0.4 % Outdoor Recreational / open space 2,068 ha 0.0 % Not categorised 73 ha	SNH Website 2014 SOE Report 2007
Water	15,701 ha of standing waters 4 catchments of major rivers (Tay, Earn, Isla & Garry)	SOE Report 2007 SEPA
Resource	**Key facts**	**Data Source**

Population, Health and wellbeing.	2011 Census: 146,652 people Population density 28 people per/ km2 61,610 of population in employment (FT/PT/ – not including self-employed) 2005/6 survey of method of transport to work showing 72% use Car/van; 19% cycle/walk; 7% use public transport.	PKC 2007 Census

Table 2.4 details the quality of the rivers and lochs and gives appropriate site management measures in relation to the Forest Plan

Table 2.4

Waterbody	Other Designations	Status	Pressure from	Site Management Measures
Lower Tay estuary	SAC, SPA, NVZ	Good	Sewerage disposal	Not applicable.
River Tay (Isla to Earn Confluence)	SAC, DWPZ, NVZ	Moderate	Morphological alterations Sewerage	It is not within the scope of the Forest Plan to advise on morphological alterations and the total length of the woodland sites is small compared to the length of the bank.
Alyth Burn	SAC, NVZ	Poor	Morphological alterations Sewerage	It is not within the scope of the Forest Plan to advise on morphological alterations and the total length of the woodland sites is small compared to the length of the bank.
River Erich	SAC, NVZ	Good	Diffuse source pollution of phosphorous from arable farms	Trees absorb phosphorous and can be used to reduce diffuse pollution. However the sites are not located adjacent to sources of pollution so their impact can only be negligible.

Waterbody	Other Designations	Status	Pressure from	Site Management Measures
Urlar Burn	SAC	Moderate to Poor	Abstraction	The management of the woodland sites cannot influence the rates of upstream abstraction. However, trees can reduce evaporation and increase infiltration therefore could be used upstream to reduce the amount of water required.
River Tummel	SAC	Moderate	Morphological alterations and flow regulation	The management of the sites has not affected the morphology (recently) due to the distance between them. Flow regulation is also not affected by the woodlands; however the use of the river for energy production could be off-set by using biomass from woodlands as a renewable energy source.
Loch Rannoch	SAC	Good	Abstraction and morphological alterations	The management of the sites has not affected the morphology. Flow regulation is also not affected by the woodlands; however the use of the river for energy production could be off-set by using biomass from woodlands as a renewable energy source. Trees also reduce evaporation and increase infiltration therefore could be used upstream to reduce the amount of water required off site.
River Earn	NVZ	Good	Sewage	Not applicable.
Ruthven Water	NVZ	Good	No pressures	Not applicable.

Waterbody	Other Designations	Status	Pressure from	Site Management Measures
River Devon	DWPZ	Poor	Abstraction and flow regulation	Flow regulation is not affected by the woodlands; however the use of the river for energy production could be off-set by using biomass from woodlands as a renewable energy source. Trees also reduce evaporation and increase infiltration so trees could be used upstream to reduce the amount of water required off site.

Whilst the management of the woodland sites will not improve the condition of the rivers due to the relative size of the woodland sites compared to the river catchment areas, the appropriate management of trees and woodlands can have a positive impact on water quality as follows:

- Intercept sediments, nutrients and pesticides draining from adjacent land;
- Regulate water temperatures by providing the 'right balance' of light and shade;
- Tree roots help stabilise river banks, and roots and stumps provide refuge for fish and other aquatic wildlife;
- Forest canopies can increase the capture of acid pollutants and reduce stream pH;
- The variety and seasonality of leaf litter, and associated microbial processes, can maintain energy and nutrient flows. Terrestrial invertebrates that fall from woodland canopies provide food for aquatic organisms; and Forests can reduce water flows

Biodiversity

Biodiversity plays an important role in all aspects of our lives and is one of the themes of the Scottish Forestry Strategy. Managing woodlands for biodiversity is not only a key component of UKWAS (UK Woodland Assurance Standard); it is also an inherent responsibility to maintain the ecological value of our countryside for generations to come.

Species action plans and habitat action plans are an integral part of the UK Biodiversity Action Plan and set the guidance into a local context. The management of woodlands (and other land uses) should be undertaken with these species and habitats in mind. The tables 2.5 and 2.6 below gives brief descriptions of the species and habitats relevant to the woodlands in the draft Forest Plan, along with those sites that are particularly relevant and the management actions to be undertaken.

Table 2.5 Species Action Plans

Species	Description of Habitat Requirements	Forest Plan Sites	Action
Barn Owl	Nest in hollow trees and hunt in rough grassland, forest edges, hedges, field margins and tracks and rides. Decline is due to extensive farming practices and removal of hedgerows.	Include Puddock Wood, Black Spout Wood, Birks of Aberfeldy, Den of Alyth and Abernethy Glen.	With advice from the Tayside Barn Owl Interest Group, install Barn Owl boxes at these sites in large trees at the edge of woodlands.
Adders	Undisturbed and uninhabitable countryside of heathery hills and forest rides. Threats include increased access of the countryside from hikers and mountain bikers.	Open areas of Black Spout Wood and small areas of Kinnoull Hill.	Maintain dedicated footpaths and mountain bikes trails to reduce disturbance.
Otter	Streams with an abundance of fish and amphibians for food, and holts can be within bankside tree roots and dense vegetation.	Rumbling Bridge, Den of Alyth, Birks Of Aberfeldy,	Follow the FC's Forest and Water Guidelines by undertaking surveys and sensitive woodland management practices along rivers.
Red Squirrels	Wooded habitats, from conifer forest to broadleaf woodland, including urban parks and gardens. Most abundant in woodlands of Scots Pine or mixed conifers. Can also survive well in broad leaf woodland, especially those with plentiful hazel nuts.	None of the woods in this plan are considered priority woodlands; however they all can provide food and habitat for red squirrels. Black Spout Wood, Den of Alyth, Kiliechonan and The Birks of Aberfeldy are all in the northern part of Tayside where Red Squirrels outnumber greys.	Ensure all woods have species that provide food for Red Squirrels (Pine, Spruce, Larch and Hazel are important species). Increase the amount of these species in the northern woodlands. Consider trapping grey squirrels. Take advice from Perth and Kinross Red Squirrel Group.

Species	Description of Habitat Requirements	Forest Plan Sites	Action
Salmon	Fry and Parr eat invertebrates and they require shallow water with a stony substrate, although this gets deeper as they grow bigger. One of the causes for a decline in fish numbers is habitat degradation from intensification of agriculture, sediment run off, grazing of riparian vegetation and bank erosion.	All rivers within woodlands in this plan feed into salmon rivers.	Woodlands should be managed in line with the FC Water Guidelines. Tree cover should be maintained to stabilise banks and reduce run off, and gaps created if the trees are heavily shading the stream.
Bats (two Pipistrelle species, the Brown Long-eared bat, Daubenton's bat and Natterer's bat)	Use deciduous woodland and woodland edges for hunting. Threats are due to loss of roost sites and reduction in diversity of trees and plants which in turn have led to a reduction in associated insects.	All	Leaving standing dead wood in woodlands for roost sites. Encouraging ground flora and diversity in woodland plants.

Table 2.6 Habitat Action Plans

Habitat	Description	Forest Plan Sites	Action
Birchwoods	Silver birch and Downey birch dominate with occasionally very small quantities of oak, hazel, rowan, willow, juniper, ash, aspen or Scots pine. Considered to be a transitional phase before eventual development into pine, oak or ash wood. Threats due to fragmentation, over-grazing and being overrun with non-native species.	Birks of Aberfeldy Kiliechonan	Maintain the dominance of the birch by removing non-native species. Monitor regeneration and protect seedlings if beneath desired levels.

Habitat	Description	Forest Plan Sites	Action
Lowland mixed broadleaved	Encompass a wide range of woodlands, with a variety of tree species reflecting something of their past history and the type and intensity of their management. Oak, ash and birch are the naturally dominant species in semi-natural woodland areas with elm, wild cherry, hazel, etc. present in varying proportions as well as beech and sycamore. Threats have been clearing for other land uses and being taken over by exotic species and fragmentation.	Den of Alyth Parts of Kinnoull Hill Crieff sites Abernethy Glen	Gradually remove beech and sycamore, or manage the regeneration to stop them taking over. The Council will work with SNH and FCS to maintain a sustainable deer population. (See Deer Management Statement Appendix 10)
Wet woodlands	Dominated by alder and willow they frequently occur in an intimate mosaic with other woodland habitats. Threats are from drainage and vegetation changes, especially from invasive plants such as Japanese knotweed.	Areas within Black Spout Wood and to the south of the A9 at Auchterarder	Monitor the sites and remove any exotic vegetation.
Upland Oak Woods	Defined as those woodlands dominated by oak. Birch is generally present in the canopy with varying amounts of Holly Rowan, Hazel and occasionally Aspen present as the predominant understorey species.	Black Spout Wood	Selective felling to create gaps to support an understory of oak should be undertaken.
Upland Pine Woods	Pine is the characteristic tree species in native pine woods though they also contain varying amounts of Birch spp. and other broadleaves, with Juniper often an important component in the understorey. Threats have come from conversion of woodland to moorland for game management, removal for development and loss of regeneration due to deer.	Parts of Kinnoull Hill Provost's walk Auchterarder Parts of the Knock of Crieff	Plant a pine understory and protect with robust tree shelters. Remove non-native species such as sycamore and beech. The Council will work with SNH and FCS to maintain a sustainable deer population. (See Deer Management Statement Appendix 10)

Habitat Networks

75% of Scotland was covered in woodland after the last post-glacial maximum extent. This was reduced to around 4% in the 17th century and it is now around 18%. The woodlands that currently exist are small and many are isolated from one another. The reduction in areas (or core area) has led to increased local extinctions, whilst increased isolation causes a reduction in the exchange of individuals between isolated patches, threatening their long-term viability. Habitat networks are intended to reverse the deleterious effects of fragmentation by linking existing habitat to provide large connected areas which are capable of sustaining a greater biodiversity. The principle objective of a habitat network is to enhance biodiversity. A habitat network specifically focuses on the connectivity of a single habitat, such as 'heathland' in general or the more specific 'Caledonian pinewood' or for a single species, such as red squirrels.

Highland Perthshire Habitat Network

The assessment of the Highland Perthshire Habitat Network commissioned by the FC and SNH in 2003 identified five core forest woodland types and seven forest corridors.
Of the sites in this Plan, the following fall into one of these areas:

- Killiechonan is within the core area of semi-natural birch woodland found on around Loch Rannoch.
- Lady Mary's Walk is along the upper Earn corridor.

The eight aspirations set out to achieve an improvement in the highland Perthshire Habitat Network are to:

1) Restore, expand and link existing areas of semi-natural woodland;
2) Widen corridors;
3) Close gaps;
4) Encourage woodland on watersheds;
5) Expand floodplain forests;
6) Expand high elevation woodland;
7) Redesign large conifer woodlands; and
8) Develop links to other areas.

Of these, due to the limited areas for new planting, only the redesign of conifer woodlands can be supported through this plan. This can be achieved at Provost's Walk, Auchterarder and the woodlands at Tulloch.

Small Scale Habitat Networks

Small scale habitat networks make an important contribution to the wider habitat network. There are a number of sites within this plan that connect similar woodlands to one another, or to other woodlands. These include:

- Lady Mary's Walk connects the semi-urban tree cover of Crieff to Puddock Wood and another 5 km of broadleaved woodland all the way through to Auchingarrich.
- The Knock of Crieff links with the neighbouring property owned by Crieff Hydro

and also connects with other broadleaved woodland through to Monzie Castle.

- The Den of Alyth links 2 km of broadleaved woodland to the west with the new planting Forestry Commission site on the hill of Alyth.
- Kinnoull Hill is adjacent to the FC owned section of the park and Deuchny Wood. Whilst the core area is large, there is little connectivity beyond the main site.
- The Birks of Aberfeldy link areas of coniferous woodlands to the east with birch woods to the west.
- Black Spout Wood is adjacent to the woods owned by the hotel and to the east, as well as a strip of wood on the eastern bank of the River Tummel.
- The woods at Auchterarder form part of a woodland complex that stretches for 3 km to Cornhill.

Due to the distribution of the sites throughout Perthshire, and the limitations of new planting due to landownership and development, it is unrealistic to aim to link the woodlands together. However, in relation to this plan there are a number of management practices that can be undertaken to improve the habitat networks that currently exist. These are to:

- Aim for a species mix that complements neighbouring woodlands;
- Avoid clear-felling sections that act a wildlife corridors;
- Use natural features such as rivers as potential corridors; and
- Communicate with neighbouring properties.

2.4 Environmental Problems.

Schedule 3 paragraph 4 of the Environmental Assessment (Scotland) Act 2005 requires the Environmental report to include a description of existing environmental problems, in particular those relating to areas of environmental importance. This section aims to explain how existing environmental problems will affect or be affected by the Plan and whether the Plan is likely to aggravate, reduce or otherwise affect existing problems.

Table 2.0 contains a description of the environmental issues that were identified through discussions with, SNH, HS, Tayside LBAP officer, RSPB, NTS, Perth and Kinross Leisure, PKC Sustainable Transport Officer, PKC Health and Welfare Officers, PKHT Officers. It also includes suggested data sources for each issue and any implications for the draft Forest Plan.

Environmental Problems Relevant to Perth and Kinross draft Forest Plan

The following environmental problems were identified as likely to have an impact on the Perth & Kinross Forest Plan 2014 – 2034. These environmental problems were identified by evaluating the baseline data and in discussion with Forestry Commission Scotland, Scottish Natural Heritage and the Scottish Agricultural College. Discussion also took place within the Council with the Council's Tree & Woodland Officer, the Senior Community Capacity Building Worker for Community

Greenspace, the Strategic Environmental Assessment Co-ordinator and the Strategic Policy & Sustainable Development Team Leader.

Table 2.7 contains a description of the environmental problems, suggested data sources for each problem and any implications for the Perth & Kinross Forest Plan 2014 – 2034.

Some of the Council's woodlands have been designated Sites of Special Scientific Interest, and some sites are adjacent to Special Protection Areas and Special Areas of Conservation. The importance of these areas is acknowledged, but there will be no operation within the Forest Plan that will have a detrimental effect on the important environmental factors identified in these sites, and management will have a beneficial or contributory beneficial effect on these designated sites.

There are no listed Gardens and Designed Landscapes included in the Forest Plan, but many sites have equal value.

There will be a secondary beneficial effect for designated areas, because the Forest Plan will be used to raise public awareness to the environmental issues in relation to biodiversity in general.

Table 2.7 Environmental Problems Relevant to Perth & Kinross draft Forest Plan 2014 – 2034

Potential Problem	Supporting Data (where available at this stage)	Implications for the Plan
Biodiversity, Flora and Fauna: resources and development pressure.	PKC State of the Environment Report	The number of designated sites which the Forest Plan covers or is adjacent to and the number of environmental initiatives in biodiversity action plans could encourage an expectation that cannot be met from the Council's resources and to maintain SSSIs in a favourable condition. E.g. deer management. (See Deer Management Statement Appendix 10) Development pressure around Forest Plan sites could be detrimental to habitat quality. Declining species richness in woodlands. Whereas this is not the case at the moment and the implementation of the Forest Plan will have a positive impact the above potential problems will need to be monitored. For details of specific site proposals see Appendix 1. SSSI's will be managed in accordance with SNH Site management plans see appendix 7, 8, &9. for Birks of Aberfeldy, Den of Alyth & Kinnoull Hill
Population: visitor pressure.	Visible signs of damage to sites, complaints arising from conflicting groups of users.	Increased visitor pressure due to numbers or certain kinds of activities, possible damage to infrastructure. . The potential for sites to become damaged by visitor pressure will be managed and monitored as part of the Forest Plan. For more detail see Appendix. 1

Soil: erosion.	Visible signs of damage to sites.	Erosion resulting from increased stormy weather or visitor pressure. There are currently no significant issues relating to soil erosion on the Forest Plan sites however this will be monitored as part of the plan.
Water: flooding and increased rainfall.	Indicative Flood Map SEPA Perth and Kinross and Mean Flow at Key gauging Stations (1973 - 2010).	Flooding may damage riparian woodland and will damage paths and bridges used for access through woodlands. This is not currently a problem however this will be monitored as part of the Forest Plan.
Potential Problem	**Supporting Data** (where available at this stage)	**Implications for the Plan**
Air: increased wind speeds.	Increased circumstances when staff and contractors have been called out to deal with damaged trees, especially after storms.	Increased wind speeds causing damage to trees, resulting in loss or damage to groups of trees or individuals. This has become more common in the last 3 years (since May 2011) but has had little if any impact on the woodlands generally. Fallen or damaged trees in woodlands are generally made safe if necessary and left on site to decay.
Climatic Factors	Scottish Environment Statistics.	Increasing mean annual temperatures will affect plant growth and species composition. There have been no significant issues relating to this noted on any of the woodland sites to date but this will be monitored as part of the Forest Plan,
Material Assets: declining condition of trees due to disease	Forestry Commission Plant Health Service	Fungal pathogens such as Phytopthora and Chalara have the potential to reduce the health of the tree and other plant populations, potentially having severe effects. This has become more of an issue in recent years; the Council will adhere to the Scottish Governments guidelines and any relevant legislation regarding Plant Health when implementing the Forest Plan.

Cultural Heritage:	Perth & Kinross Heritage Trust data.	Damage to archaeological features not listed on national registers. Sites in the plan that have archaeological features (See Appendix 1) will be managed sensitively to protect the features. Any subsequent previously unknown features that are discovered through Forest Plan operations will be reported to Historic Scotland and guidance on their protection/preservation will be sought.
Potential Problem	**Supporting Data** (where available at this stage)	**Implications for the Plan**
Landscape: declining tree health and condition.	As set out above.	A cumulative effect of the negative conditions above. Not a significant problem currently but as described above the potential problems will be monitored as part of the plan.

Pests and Diseases

There are a number of tree pests and diseases in Scotland that may have a dramatic impact on the woodland in this Plan, and woodlands in general over the next 20 years. Table 2.8 lists known diseases that have some presence in Scotland in woodlands similar to those in this Plan. Table 8 lists European diseases that may find their way to the UK. In addition, there may well be catastrophic consequences of an introduction to the UK of a pest the scientific community do not yet know about.

Table 2.8: Top Pest and Disease Threats

Tree Species	Disease
Broadleaves	Asian longhorn beetle – wood-boring insect that can cause extensive damage to a range of urban and forest broadleaved trees. Bleeding Canker of Horse Chestnut - is a common canker of horse chestnut trees Aesculus hippocastanum that is known to be caused by infection with several different pathogens.
Ash	Chalara dieback of ash – an aggressive fungal disease of ash trees which causes crown death and wilting and dieback of branches.
Pines	Dothistroma needle blight – formerly known as red band needle blight, and caused by the *Dothistroma septosporum* fungus. Causes mortality and loss of timber yield in pine trees. Main host is Corsican pine, but lodgepole and Scots pine also increasingly affected.
Larch	*Phytophthora ramorum* - a fungus-like organism which attacks many trees and plants. The economically important larch is a host, and large numbers have had to be felled.
Pine	Pine tree lappet moth (*Dendrolimus pini*) –discovered breeding in Inverness-shire pine plantation forests. Can be a serious defoliator of pines and other conifer trees in some parts of its native range in Europe.

The following threats are not yet present in the natural environment in Britain:

- Citrus longhorn beetle (FERA website) – a wood-boring insect that can cause extensive damage to a range of urban and forest broadleaved trees. Very similar in appearance and effects to Asian longhorn beetle.
- Emerald ash borer (Agrilus planipennis) – a wood-boring insect that causes widespread mortality of ash trees and loss of timber value.
- Pinewood nematode – a worm that can cause serious tree damage and mortality.
- Pine processionary moth (Thaumetopoea pityocampa) – a species whose caterpillars can cause serious damage to pine and other conifer trees, and which also cause a public and animal health hazard.

Response and Management

As we do not yet know what diseases will affect the woodlands within this Plan and if they do with what severity, it is difficult to advise on the best course of action. However, there are a number of general rules that can be followed:

- Follow guidelines on biosecurity for Council staff and put up notices for the public.
- Follow the advice of the Forestry Commission and keep up to date with developments in tree pests and diseases.
- Monitoring and quick response – evidence from the Edinburgh City Council Dutch Elm disease program shows that the impact of a disease can be dramatically slowed down by a monitoring and a quick response programme.
- If tree deaths occur, retain as much deadwood as possible (assuming the pest is not breeding from the tree).

SECTION 3. Consideration of Alternatives, Assessment of Environmental Effects and Measures Envisaged for the Prevention, Reduction and Offsetting of Significant Adverse Effects

3.1 Consideration of Alternatives

As part of the plan making process, reasonable alternatives to the strategic action(s) proposed in the plan must be considered and assessed.
The following alternative has been considered which is the only one possible, simply not to have a Forest Plan that will concentrate all of the Council's woodland management into one document.

The management in the plan would include tree maintenance, re-stocking, path maintenance, interpretation and signposting provision and maintenance, biodiversity management, litter removal, site inspections and organised activities.

In the first five years without a plan there would be little impact on some areas, but there would be immediate impacts on the use of woodlands after paths became blocked by fallen trees, overgrown or where path damage after severe weather would not have been repaired. There would be no options for taking action in relation to tree health, due to damage, decay and disease. These would affect visitor use, tourism and the viability of parts of the asset.

The short-term effects would become more acute in the medium-term, visible deterioration from a distance would start to show, and access to woods would become very difficult. There might be improvements for biodiversity with a reduction in disturbance and increase in scrub cover for breeding birds. Roe deer numbers would increase which would add pressure on adjacent gardens.

In the long-term the viability of the woodlands would be lost because they have always been managed structures. Areas would be abandoned by users, significant tree damage would be very obvious, water would run off sites as water courses became blocked and the number of viable trees would be reduced.

(See table 3.1 below)

Key to Table:

✓ Significant positive environmental effects
0 No environmental effects, positive or negative
X Significant negative environmental effects
? Effects unknown

LT Long-term duration of environmental effects 10 -15+ years
MT Medium-term duration of environmental effects 5-10 years
ST Short-term duration of environmental effects 0-5 years
P Permanent environmental effects
T Temporary environmental effects

Table 3.1 Consideration of alternatives/likely future of area without the plan.

Objective / component of Perth & Kinross Forest Plan 2014 – 2034 Alternative: Manage Council woodlands in the absence of a Forest Plan or similar strategic document.	**Biodiversity, flora and fauna**	**Population**	**Human Health**	**Soil**	**Water**	**Air**	**Climatic Factors**	**Material Assets**	**Cultural Heritage**	**Landscape**	**Cumulative or secondary effects**	**Effects on designated areas***
In the first five years without a plan there would be little impact on some areas, but there would be immediate impacts on the use of woodlands after paths became blocked by fallen trees, overgrown or where path damage after severe weather would not have been repaired. There would be no options for taking action in relation to tree health, due to damage, decay and disease. These would affect visitor use, tourism and the viability of parts of the asset.	**X ST**	**X ST**	**0 ST**	**0 ST**	**0 ST**	**0 ST**	**0 ST**	**X ST**	**0 ST**	**0 ST**	**X ST**	**0 ST**
The short-term effects would become more acute in the medium-term, visible deterioration from a distance would start to show, and access to woods would become very difficult. There might be improvements for biodiversity with a reduction in disturbance and increase in scrub cover for breeding birds. Roe deer numbers would increase which would add pressure on adjacent gardens.		**X MT**	**X MT**	**0 MT**	**0 MT**	**0 MT**	**0 MT**	**X MT**	**X MT**	**X MT**	**X MT**	**X MT**

In the long-term the viability of the woodlands would be lost because they have always been managed structures. Areas would be abandoned by users, significant tree damage would be very obvious, water would run off sites as water courses became blocked and the number of viable trees would be reduced.	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP	X LTP

3.2 Cumulative/ synergistic effects and their causes relevant to the Plan.

Synergistic Effects

Synergistic effects can be defined as the cumulative effects that result when the interaction of a number of impacts is greater than the sum of the individual impacts. In order to help determine the synergistic effects of the draft Forest Plan on the environment an analysis of the environmental assessments undertaken for the other plans and policies that may have an effect on the area's environment was carried out. (See Appendix 2 - Assessment Option - Compatibility between objectives).

This has allowed for an assessment to ascertain whether any negative environmental impacts of the Strategy will be counterbalanced by improvements in other areas, or whether positive environmental effects can be enhanced by similar actions in other areas.

Table 3.2 Cumulative and Synergistic Effects and Mitigation

SEA Topic	Cumulative and Synergistic Effects	Affected Receptor	Causes	Mitigation
Biodiversity, flora & fauna	Negative/Positive impact on Biodiversity Disturbing breeding birds and other wildlife. Damaged habitats	Woodland Network Biodiversity Wildlife Habitats	Forest operations can have a detrimental impact on biodiversity, flora & fauna if guidelines are not followed.	Woodlands will be managed to favour and increase biodiversity by the continued cultivation of appropriate native species. Woodlands will be managed sensitively with activities likely to disturb or damage plant and wildlife carried out at appropriate times of the year to avoid damage and disturbance. Species listed in the Tayside Biodiversity Action Plan will be supported through management practises such as retaining standing and fallen deadwood. The woodlands will be managed on a low intervention continuous cover basis. Perth & Kinross Council will liaise with SNH as required. SSSI's will be managed in accordance with SNH Site management plans see appendix 7, 8, &9. for Birks of Aberfeldy, Den of Alyth & Kinnoull Hill Also see Appendix 10 Deer management Statement
SEA Topic	**Cumulative and Synergistic Effects**	**Affected Receptor**	**Causes**	**Mitigation**

Population & Human Health	The health benefits of woodlands not realised through lack of interpretation/publicity/suitable access paths Overuse and inappropriate use of woodland network e.g. degradation of paths and resulting damage to adjacent flora and disturbance of wildlife.	Woodland Network Human Health Educated Population	Lack of interpretation, access management and monitoring can result in a reduction in healthy activities taking place in woodlands. Forest operations can have a negative impact on woodland access for local populations.	Liaison with NHS Tayside, Live Active Leisure and other organisations to promote the use of woods for physical and mental health. Woodlands will be maintained to forge increased links with communities to increase their understanding of the natural environment Ongoing discussion with communities on the use of their woodlands and developing roles for communities in the management of their woodlands. Woodlands will be maintained to provide safe, welcoming opportunities for access and recreation for local residents and visitors to the area, with links to urban and rural paths promoting the Perth & Kinross Core Paths Plan and local path networks. Monitoring of the condition of woodlands. .
SEA Topic	**Cumulative and Synergistic Effects**	**Affected Receptor**	**Causes**	**Mitigation**

Soil	Negative/positive impact on soil	Quality of soil structure	Forest operations can have a negative impact on soil structure, stability and quality.	Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT), which will maintain soils *in situ*, which is particularly important in areas of long-term cover where the soils have built up a soil flora, fauna and fungi beneficial to a range of organisms. Permanent tree cover will reduce the erosion of soils by wind and rain. Monitoring of the condition of woodlands Liaison with SEPA as required.
Water	Negative/positive impact on water quality	Quality of water	Forest operations can have a negative impact on water quality. E.g. clear felling	Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT). The Woodlands and tree cover in the Forest Plan contribute to the improvement of water quality and diversity in riparian habitats. The Council's woodlands and habitats they support help to mitigate the effects of flooding by providing storage for and uptake of water and help to reduce rapid run-off. Monitoring of the condition of woodlands. Liaison with SEPA as required.
SEA Topic	**Cumulative and Synergistic Effects**	**Affected Receptor**	**Causes**	**Mitigation**
Air	Negative/positive impact on air quality	Air quality	Forest operations can have a negative impact on air quality	Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT), in urban areas; trees will act as a barrier to suspended solids like exhaust fumes and dust, to provide healthier air for breathing. Monitoring of the condition of woodlands. Liaison with SEPA as required.

Climatic Factors	Positive/negative impact on climate	Climate	Forest operations can have a negative impact on climate	Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT) Trees help to reduce exposure from strong winds and the effect of the Council's benefit for properties in Perth and Kinross is significant. Tree cover provides cooler air in warm weather through evapotranspiration. Monitoring of the condition of woodlands. Liaison with SEPA as required.
SEA Topic	**Cumulative and Synergistic Effects**	**Affected Receptor**	**Causes**	**Mitigation**
Material Assets	Positive/negative impact on material assets	Material Assets .	Forest operations can have a negative impact on material assets	Monitoring Council's asset management plan. Liaison with Forestry Commission Scotland, Historic Scotland and SNH. The Forest Plan will bring the Council's woodland assets together to be managed in a consistent, sustainable manner. The asset will provide a small produce of timber for local use, and the asset as a whole will contribute to Perth & Kinross as an attractive area in which to conduct business.

Cultural Heritage	Explore initiatives with Historic Scotland, Forestry Commission Scotland, Perth and Kinross Countryside Trust and Perth and Kinross Heritage Trust.	Cultural Heritage	Forest operations can have a negative impact on cultural assets	Explore initiatives and consult with Historic Scotland, Forestry Commission Scotland, Perth and Kinross Countryside Trust and Perth and Kinross Heritage Trust. In managing the Councils woodland asset the Council shall seek to: • manage the historic environment sensitively • value the cultural history and meaning of forests, woodlands, trees and the historic environment • recognise the tourism potential of the historic environment • encourage the development of living heritage and the arts in woodlands • encourage the use of Scottish timber and traditional
SEA Topic	**Cumulative and Synergistic Effects**	**Affected Receptor**	**Causes**	**Mitigation**

Landscape	Positive/negative impacts on Landscape Quality	Landscape Quality	Forest operations can have a negative impact on Landscape Quality	The Council's woods and trees provide an important setting in the urban and rural setting. Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT). This will allow this enhancement to continue. Landscape will be enhanced by ensuring woodland structure and species provide the best possible cover. Assessments will be carried out before forest operations take place to ensure this. Monitoring of the condition of the woodlands (in particular woodlands with SSSI status) and liaison with Forestry Commission Scotland and SNH will be undertaken.

3.3 Appropriate Assessments

“Under Regulation 48(1) of the Habitats Directive, an appropriate assessment needs to be undertaken in respect of any plan or project which:

A. either alone or in combination with other plans or projects would be likely to have a *significant effect* on a European Site, and

B. is not directly connected with the management of the site for nature conservation”.

Appropriate assessments are required when an action (e.g. maintenance, development or new works) on or in the vicinity of a European designated site (a Natura 2000 site) has the potential to have *significant effect* on the sites designated importance. This is most likely to occur at an implementation stage. At this level of assessment it would appear that the Forest Plan is not likely to have a significant effect on Natura interests.

3.2 Assessment of the draft Forest Plan

In accordance with Schedule 2 of the Environmental Assessment (Scotland) Act 2005, Perth & Kinross Council has considered whether the Perth & Kinross Council draft Forest Plan 2014 - 2034 is likely to have significant environmental effects (positive and negative) on the environmental topics. A summary of the conclusions is presented in the table below – For details see Appendix 1 Description of Sites, links to Scottish Forestry Strategy and Proposals for Management.

Table 3.4 Assessment of Forest Plan

Key to Table:

- ✓ **Significant positive environmental effects**
- **0** No environmental effects, positive or negative
- **X** Significant negative environmental effects
- **?** Effects unknown

- **LT** **Long-term duration of environmental effects** **10 -15+ years**
- **MT** **Medium**-term duration of environmental effects 5-10 years
- ST Short-term duration of environmental effects 0-5 years
- P Permanent environmental effects
- T Temporary environmental effects

1.✓T – The removal of non-native trees from SSSI's and other woodlands in the Forest Plan may have a temporary negative impact on landscape and cultural heritage but in the longer term will improve the condition of the sites involved. SSSI sites will be monitored by SNH and PKC. Note the removal of non-native trees will be carried out over the duration of the plan and if required beyond. This will allow only small numbers of trees to be removed at a time thus reducing any likely negative impacts. See work program and site proposals in the Forest Plan.

2.✓T – The gradual restructuring of conifer plantations at Provosts Walk in Auchterarder and St Magdalenes Hill,Tulloch Wood and Muirton Woods in Perth could have a temporary negative impact on landscape quality however the restructuring will introduce a mixture of native species which will in the longer term have a positive impact on both biodiversity and landscape quality.

Table 3.4 Perth & Kinross Forest Plan 2014 – 2034 Assessment of Forest Plan Implementation.	Biodiversity, flora and fauna	Population	Human Health	Soil	Water	Air	Climatic Factors	Material Assets	Cultural Heritage	Landscape	Cumulative or secondary effects	Effects on designated areas*
LT Long-term duration of environmental effects 10 -15+ years **MT Medium**-term duration of environmental effects 5-10 years ST Short-term duration of environmental effects 0-5 years	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST	LT/MT/ST
BIRKS OF ABERFELDY (41.6ha)	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	1✓T	✓	1✓T
VICTORIA PARK ABERFELDY (2.15ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ABERNETHY DEN (1.3ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DEN OF ALYTH (20.79ha)	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	1✓T	✓	1✓T
PRIMROSE (WESTERN ROAD) PARK AUCHTERARDER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PROVOST'S WALK, AUCHTERARDER (17.24ha) incl, Primrose Park	✓	✓	✓	✓	✓	✓	✓	✓	✓	2✓T	✓	✓
RIVERSIDE BLAIRGOWRIE (0.78ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LOON BRAES, DAVIE PARK & RATTRAY COMMON (6.11ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	✓	✓

LARGHAN VICTORY PARK (7.9ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MACROSTY/MUNGAL/TAYLOR PARKS (3.68ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
KNOCK OF CRIEFF (29.75ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	✓	✓
LADY MARY'S WALK CRIEFF (6.5ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PUDDOCK WOOD CRIEFF (2.34ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	✓	✓
JUBILEE PARK DUNKELD (1.06ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
INCHTURE PARK (1.96ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RIVERSIDE AVENUE, INVERGOWRIE (2.35ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
KINGOODIE QUARRY INVERGOWRIE (4.9ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	✓	✓
INVERGOWRIE PARK, INVERGOWRIE (0.91ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
KILLIECHONAN PICNIC AREA - LOCH RANNOCH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SPRINGFIELD PARK KINROSS (1.69ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LUNCARTY WOODS (3.58ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
KINNOULL HILL WOODLAND PARK (72.6ha)	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	1✓T	✓	1✓
ST. MAGDALENE'S HILL PERTH (44.2ha)	✓	✓	✓	✓	✓	✓	✓	✓	2✓T	2✓T	✓	✓

VIEWLANDS RESERVOIR PARK PERTH (6.92ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CRAIGIE WOODS PERTH (4.83ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NORTH INCH PERTH (53ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MUIRTON & INVERALMOND WOODS PERTH (45.8ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	2✓T	✓	✓
SOUTH INCH PERTH (31.33ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TULLOCH & PERTH LADE WOODS (3.69ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	2✓T	✓	✓
JEANFIELD CEMETERY & PARK WOODS (16.05ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OAKBANK & BURGHMUIR WOODS (4.74ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BELLWOOD & NORRIE MILLER PARKS (4.72ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SCONE PUBLIC PARK (4.7ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MONCREIFFE ISLAND PERTH (49.23ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BLACK SPOUT WOOD PITLOCHRY (21.9ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	1✓T	✓	✓
TOM NA MOAN PARK PITLOCHRY (1.11ha)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WILDWOOD, STANLEY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

SECTION 4. MONITORING STRATEGY

4.1 Proposals for monitoring the environmental effects.

The SEA Directive requires the responsible Authority to monitor significant environmental effects of the implementation of the Plan. This needs to be done in such a way as to enable PKC to identify any unforeseen adverse effects at an early stage and to enable the Authority to take appropriate remedial action.

In order for the Perth and Kinross draft Forest Plan to continue to have no negative impact on the environment a means of monitoring the woodlands for the future is required to enable appropriate remedial action to be taken if needed.

Monitoring needs to consider both adverse and beneficial effects. Effects relate to the plan as a whole and the monitoring should consider cumulative, secondary and synergistic effects, over and above the impact of the plan.

Monitoring will be co-ordinated once the draft Forest Plan has been adopted.
It is envisaged that PKC will utilise existing monitoring already in place. In addition, fixed point photography and path counters and surveys could be carried out annually, taking into account the type of indicators chosen.

Table 4.1 Proposed monitoring format. – Indicators, Targets and Action

SEA Topic	Effects/ Trends	Indicators	Targets	Sources	Gaps	Action
Biodiversity, Flora and Fauna	Habitat degradation. Species decline. Increased popularity in local habitats for recreation and to see local species.	Erosion/ damage to habitats. Disturbance leading to reduced species numbers and variety. State of the Environment Report. Monitoring results for SSSI sites carried out by SNH	No net loss of local habitats. No net loss of local species populations Favourable status for SSSI sites as determined by SNH	SNH Site condition monitoring. Favourable Conservation Status (FCS) Tayside Biodiversity records. Wildfowler counts/surveys. RSPB bird counts/ surveys Red Squirrel Group counts Deer population counts	No	Continue to review survey data to determine positive or negative effects. Monitoring results of the removal of non-native species. Monitoring of the condition of woodland and tree health Liaising with SNH on the results of site condition monitoring for SSSIs. Liaison with Forestry Commission Scotland. Liaising with other woodland owners on management of adjacent sites.

SEA Topic	Effects/ Trends	Indicators	Targets	Sources	Gaps	Action
Population and Human health	More people taking active recreation in PKC woodlands.	Reduction in coronary heart disease/ obesity/ stress Increase in public wellbeing	% decrease of health related problems. % increase in public recreation in woodland sites.	NHS PKC - Visitor survey data	Yes	Unknown. Investigate and survey results to determine positive or negative results. Discussion with communities on the use of their woodlands and developing roles for communities in the management of their woodlands.
Cultural Heritage	Increased popularity, use and knowledge of cultural heritage.	Increased erosion of sites. Increased visits to sites for recreation and education Liaison with Historic Scotland as required.	No net degradation of sites. Increased use of sites.	HS site condition monitoring. PKHT records. Fixed point photography	Yes	Continue to review survey data to determine positive or negative effects. If sites degrade/ erode and the value of site/ situation is in danger of losing appeal and importance.

SEA Topic	Effects/ Trends	Indicators	Targets	Sources	Gaps	Action
Soil	Soil quality maintained/ improved soil Prevention of further degradation of soil. Compaction, erosion,	Liaison with SEPA as required. State of the Environment Report.	No degradation of soil quality	SEPA State of the Environment Report	Yes	Unknown - Continue to review survey data to determine positive or negative effects. Woodlands will be managed on the principle of the Alternative to Clear-fell system (ACT), which will maintain soils *in situ*, which is particularly important in areas of long-term cover where the soils have built up a soil flora, fauna and fungi beneficial to a range of organisms. Permanent tree cover will reduce the erosion of soils by wind and rain.

SEA Topic	Effects/ Trends	Indicators	Targets	Sources	Gaps	Action
Water	Prevention of further deterioration and promotion, protection and enhancement of the ecological status of the water environment. Water conservation/pollution Reduce/increase flood risk.	Liaison with SEPA as required State of the Environment Report.	No deterioration of the ecological status of the water.	SEPA State of the Environment Report	Yes	Unknown - Continue to review survey data to determine positive or negative effects. Monitor the tree cover to ensure it contributes to the improvement of water quality and diversity in riparian habitats. Monitor to ensure the Council's woodlands and habitats they support help to mitigate the effects of flooding by providing storage for and uptake of water and help to reduce rapid run-off.

SEA Topic	Effects/ Trends	Indicators	Targets	Sources	Gaps	Action
Air	Improved air quality, reduction in levels of air pollution and reduction in levels of nuisance	Liaison with SEPA as required State of the Environment Report.	No reduction in air quality. No increase in pollution. No increase in levels of nuisance.	SEPA State of the Environment Report		Monitor and maintain tree cover in urban areas. Trees will act as a barrier to suspended solids like exhaust fumes and dust, to provide healthier air for breathing, and provide cooler air in warm weather through evapotranspiration.
SEA Topic	**Effects/ Trends**	**Indicators**	**Targets**	**Sources**	**Gaps**	**Action**

Climatic Factors	Climate change Positive or negative effects of climatic events/change affecting the health and condition of woodlands in the Forest Plan	Tree growth Pest & Diseases Condition of Woodlands following extreme weather events. Liaison with SEPA as required. Liaison with Forestry Commission Scotland	Minimise the contribution to climate change and to adapt to the effect of climate change Containment of greenhouse gas emissions Ensure the tree and woodland assets contribute to the stabilising influence of capturing carbon dioxide and reducing greenhouse gases that lead to climate change.	SEPA State of the Environment Report.	Yes	Continue to manage Council owned woodlands as continuous-cover with appropriate species Trees help to reduce exposure from strong winds
SEA Topic	**Effects/ Trends**	**Indicators**	**Targets**	**Sources**	**Gaps**	**Action**

Material Assets	Degradation of material assets Compaction, rutting, erosion Improvement of material assets.	Liaison with the Council's Economic Development Team. Liaison with Forestry Commission Scotland. State of the Environment Report. Degradation of material assets	No degradation of material assets. No compaction, rutting or erosion due to Forest Operations	PKC asset management team Forestry Commission PKC – Community Greenspace		Monitor Council's asset management plan. The plan will seek to minimise compaction, rutting and erosion through the use of working methods appropriate for the site and the ground conditions. Monitor operations and modify, postpone or stop procedures if degradation starts to occur
SEA Topic	**Effects/ Trends**	**Indicators**	**Targets**	**Sources**	**Gaps**	**Action**

Appendix 1 Description of sites, plans, links to Scottish Forestry Strategy and management proposals

Appendix 2. Compatibility of PPS Objectives

Appendix 3. List of linked programs, plans and strategies

Appendix 4. List of sites with archaeological features/designations

Appendix 5. Consultation Responses and how they have influenced the plan.

Appendix 6 SEA Objectives & Relationship with Baseline Data

Appendix 7 SNH Site Management Statement – Birks of Aberfeldy

Appendix 8 SNH Site Management Statement – Den of Alyth

Appendix 9 SNH Site Management Statement – Kinnoull Hill, Perth

Appendix 10 Deer Management Statement

Appendix 11 Habitats Regulations Appraisal