Loch Lomond & The Trossachs National Park

Trees and Woodland Strategy

THIS IS A CONSULTATION DRAFT ONLY.

The final strategy document will incorporate more design work to illustrate the Loch Lomond & The Trossachs National Park Authority's vision for trees and woodlands.

Contents

Convener's Foreword to Consultation

Here at Loch Lomond & The Trossachs National Park, we believe that our woodland resources, including productive conifer forests, native woodlands and the trees of our settlements, park lands and farmlands, are at the very heart of the history, character and lifeblood of the National Park. They are absolutely central to its future too.

Our native woodlands are of global importance for nature. They are part of the world's rare temporal rainforests and mark the most southerly remnants of Scotland's ancient Caledonian pine forest. Over the centuries, they have underpinned the identity and economy of the Park as a source of food, firewood, construction materials, charcoal and bark. This pivotal role has continued into the modern era of forestry, with a newer understanding of the sustainable environmental, economic and social benefits that Scotland derives from its trees. They are integral to the scenery, recreational experience and quality of life for those who choose to live in, work in and visit the National Park.

This is an important time for our woodlands and forests. Significant steps such as the establishment of the Great Trossachs Forest and other new native woodlands are well underway. There is a resurgence of interest in community engagement in woodlands, and an increased focus on using the woodlands of the National Park as an outdoor classroom for Scotland's Central Belt. As our forestry systems evolve, the landscape fit of our productive forests have improved through the application of modern approaches to forest planning and management.

There is a kaleidoscope of new challenges and opportunities in the National Park and we need our woodlands and forests to help us to address these. The completion of devolution of forestry to Scotland marks a new era and we can maximise the contribution to our environment, culture and economy by making more use of woodland for flood management, water quality, carbon capture, empowering people and meeting national biodiversity targets.

The National Park Partnership Plan 2018-2023 and Scotland's Forestry Strategy 2019-2029 provide a strong direction for expanding and improving our woodland resource over the coming years. Following on from their recent publication, this Trees and Woodlands Strategy will set out a clear direction for bringing their objectives to life in this National Park through the further expansion and improved management of our diverse woodland resources over the next 20 years.

I am very grateful to the many people who have already contributed their expertise and enthusiasm to the preparation of this consultation document. It is my real hope that everyone who believes in the future of Loch Lomond & The Trossachs National Park will continue to engage and to assist by taking the time to read and respond to the consultation. I thank you in advance for doing so.

James Stuart
Convener, Loch Lomond & The Trossachs National Park Authority

Executive Summary

This strategy sets out a clear, ambitious vision for how trees and woodlands are to be protected, enhanced and used within Loch Lomond & The Trossachs National Park. It is a key document for land managers and regulators to inform and offer direction to forest, woodland and tree proposals over the next twenty years.

The strategy covers all types of woodland, from small-scale tree planting to landscape and productive forestry. It will help deliver both Scottish Government and National Park priorities relating to climate change, biodiversity and sustainable development.

Approximately 30% of the National Park is covered by woodland: around 22.5% productive conifers and 7.5% native woodlands. By comparison, the current woodland extent for Scotland is about 17%, yet the European Union's average is 38%. Our native woodlands are of global importance for nature, including rare temporal rainforests and the most southerly remnants of Scotland's ancient Caledonian pine forests

The strategy covers all scales and types of woodland management from small scale tree planting for landscape and amenity, farm woodlands to native woodlands and productive conifer schemes of all sizes. It will also guide local implementation of the new national Scotland's Forestry Strategy 2019 -2029, as well as helping to achieve national woodland creation targets[1] of which 3,000 – 5,000ha per year are native woodland.

There are seven strategic objectives:

1. Increasing woodland cover.
2. Improving woodland condition and diversifying woodland management.
3. Protecting and enhancing the National Park's Special Landscape Qualities.
4. Maintaining and enhancing economic sustainability through forestry-related skills and business development.
5. Promoting cooperative woodland management and creation as part of an integrated land management approach.
6. Improving community empowerment and resilience through active engagement in woodland management.
7. Encouraging and promoting public access to woodlands for recreation and improving people's quality of life.

[1] 10,000ha to be planted each year up to 2021 when targets will rise, in steps, to 15,000ha each year by 2025

The strategy highlights five main themes that will help the National Park deliver its strategic objectives. Any forestry proposal should consider these where appropriate.

Habitat enhancements – The strategy includes guidance on expanding woodland habitat networks, riparian and montane woodland and priority woodland habitats to increase diversity and protect flagship species. The importance of tackling invasive non-native species is also documented, as well as the restructuring of productive conifer forests (including PAWS restorations), climate change and tree health.

Landscape integration – The strategy offers direction on how to design forestry proposals that enhance and protect Special Landscape Qualities, such as views valued by visitors and local communities. In this section, the National Park has been divided into ten areas, looking at the landscape character of each and how this would be taken into account in any forestry proposals.

Integrating woodland with other land uses – Guidance is included for designated sites, open ground habitats, herbivore management, deer fencing and agricultural land management (including how to integrate woodland creation and management with existing agricultural businesses). This could include the establishment of Land Use Partnerships.

Rural economic development – Opportunities for economic expansion within the National Park are highlighted. In particular, there is focus on improving woodland management skills, maintaining and diversifying the production of timber products, haulage and timber transport. As woodland creation and management proposals can affect the local landscape, tourism and visitor services, communities are encouraged to engage with woodland proposals through the consultation process.

Woodlands and people – The National Park's woodlands are used for tourism and outdoor recreation activities. The Trees and Woodland Strategy promotes responsible access and encourages the public use of woodland for recreation and outdoor education.

The strategy contains strategic maps showing potential areas for native woodland expansion. These maps are included as a guide, however, there remains a need for site-specific surveys and stakeholder engagement to be carried out before any woodland creation proposal is submitted to the Scottish Forestry.

The strategic guidance applies to both existing woodland management as well as woodland creation proposals to deliver innovative 21st century forestry proposals appropriate for the first national park in Scotland.

1 Introduction

1.1 Strategy Purpose

The purpose of the strategy is to help deliver the outcomes and objectives set out in the National Park Partnership Plan 2018-23 and Scotland's Forestry Strategy 2019-2029, by developing opportunities that:

- Create new woodlands – both native woodlands and productive conifer forests;
- Improve woodland biodiversity;
- Enhance the existing contribution of woodlands to the special landscape quality (SLQ) of the National Park; and
- Improve the resilience and sustainability of woodlands, both environmentally and economically.

The strategy promotes sustainable forestry based on delivering environmental, economic and social benefits now and in the future.

The strategy will detail with the considerations for woodland creation and woodland management within the National Park. It will also be used as a decision making tool to help drive the delivery of woodland objectives within the National Park and support effective consultation between all partners on woodland creation and management proposals. It is intended to review this document in ten years' time.

Why a Trees and Woodland Strategy? Rather than referring to a 'Forestry Strategy', we have named this document a 'Trees and Woodland Strategy' in order to recognise the importance of individual trees and tree groups in the landscape and their contribution to natural capital in the context of integrated land management in the National Park. In this document the terms 'woodland' and 'forest' are used interchangeably.

1.2 Policy Context

1.2.1 National Park Partnership Plan 2018 – 23: Delivering for Scotland

Our National Park Partnership Plan – which this strategy will help to deliver – sets out how all those with a role in managing the National Park will work together to help deliver national priorities and achieve benefits for the whole of Scotland.

This strategy will contribute towards the following national priorities:

- **Climate Change** – Trees and woodlands in the National Park play an important role in mitigating climate change by storing carbon and slowing water flow, which can help reduce flooding and stabilise slopes prone to landslides.
- **Valuing Nature and Reversing Biodiversity Loss** – The long established and ancient woodlands in the National Park are of national importance for their rich biodiversity. Native woodland expansion and enhancement in the National Park can make a significant contribution to meeting Scotland's 2020 Biodiversity Challenge.
- **Natural Capital** – Scotland's National Parks exemplify the connections between nature, our economy and our quality of life. The National Park is a key place to connect the value of land and woodland management with wider community and sustainable socio-economic benefits.
- **Community Empowerment** – Building on the strong foundation and legacy of community capacity building and action planning in the National Park, there is growing potential and opportunity for communities to own or manage assets and deliver projects including community woodland projects.
- **Sustainable Development and Economic Growth** – Forestry provides a great contribution to the local rural economy through jobs, education, skills, community development, social enterprise, tourism and business development.
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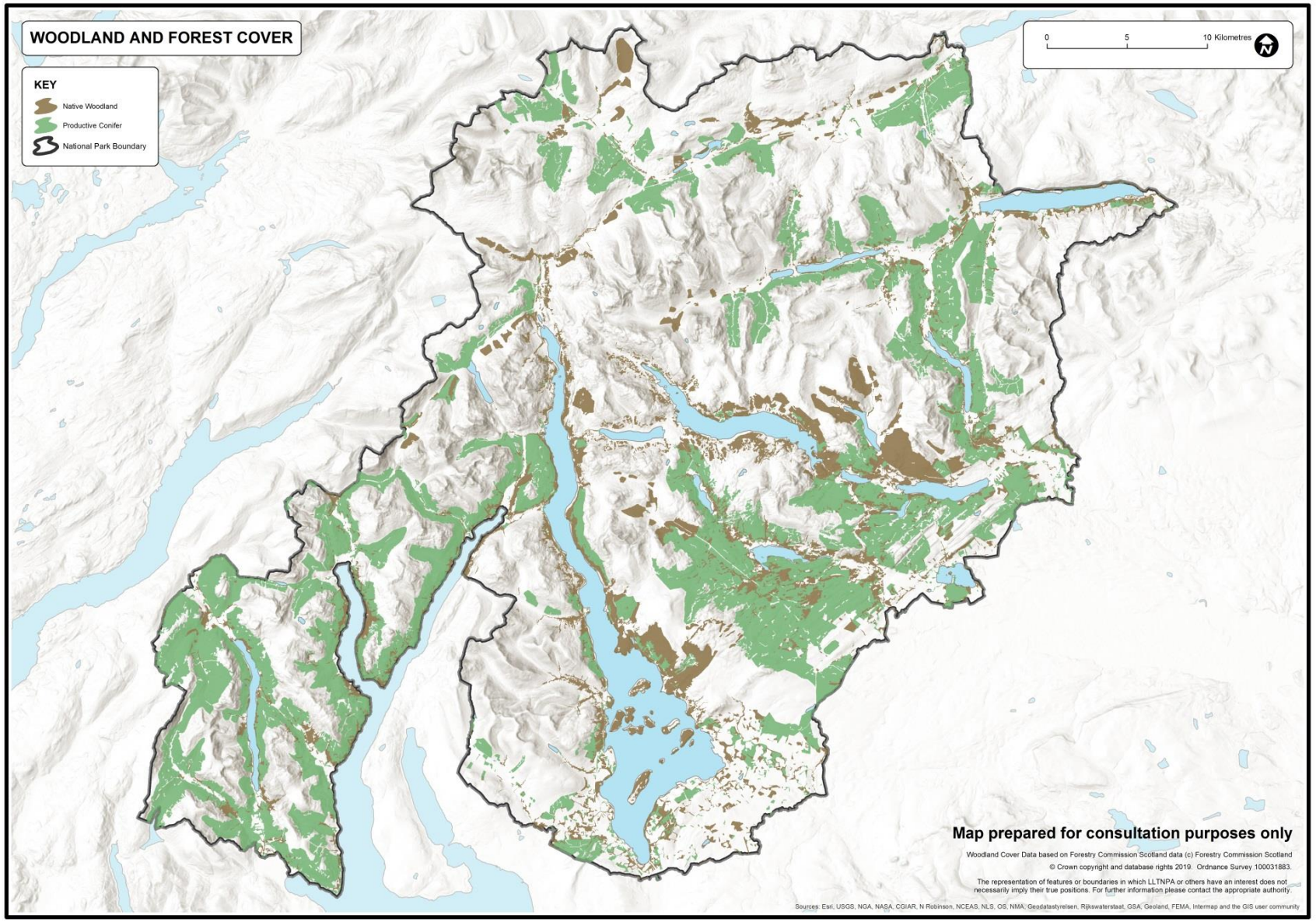
1.2.2 UK Forestry Standard

The UK Forestry Standard (UKFS) details how sustainable forestry will be undertaken by setting out relevant legislation and good practice which all forestry proposals must comply with. It is the standard against which all woodland proposals are assessed, covering biodiversity, climate change, historic environment, landscape, people (including access), soil and water. The importance of National Parks is recognised within the standard and forestry proposals delivering the objectives set out in this Trees and Woodlands Strategy should be in line with UKFS.

In addition to UKFS, there are voluntary certification schemes underpinned by the UK Woodland Assurance Standard (UKWAS). Woodland owners and managers are encouraged to consider these schemes as compliancy with UKWAS would further the delivery of the Park's Trees and Woodland Strategy objectives.


WOODLAND AND FOREST COVER
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Native Woodland
Productive Conifer
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Map prepared for consultation purposes only
Woodland Cover Data based on Forestry Commission Scotland data (c) Forestry Commission Scotland
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The representation of features or boundaries in which LLTNPA or others have an interest does not necessarily imply their true positions. For further information please contact the appropriate authority.
Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

2 Vision

Our vision is for the trees, woodlands and forests of Loch Lomond and The Trossachs National Park to flourish and to expand where appropriate, providing us and future generations with sustainable natural capital.

This will result in a strengthened native woodland habitat network across the National Park at all scales. This will allow a wide range of woodland species to disperse, recolonise and migrate more easily, while delivering a range of wider benefits such as locally sourced timber and other wood products, improved natural flood management, slope stabilisation, water quality improvements and carbon sequestration. Careful woodland management and creation will minimise the potential risks of the spread of plant disease, invasive species and wildfire while having sustainable populations of wild and domestic herbivores.

QUESTION 1

a) Do you agree with the vision?
b) Is there anything you would change about the vision?

3 Strategic Objectives

The following strategic objectives summarise how we aim to achieve our vision:

(i) Increasing woodland cover.
(ii) Improving woodland condition and diversifying woodland management.
(iii) Protecting and enhancing the landscape.
(iv) Maintaining and enhancing economic sustainability through forestry-related skills and business development.
(v) Promoting cooperative woodland management and creation as part of an integrated land management approach.
(vi) Improving community empowerment and resilience through active engagement in woodland management.
(vii) Encouraging and promoting public access to woodlands for recreation and improving people's quality of life.

3.1 Rationale

3.1.1 Increasing Woodland Cover

The current target set out in the National Park Partnership Plan is 2,000 ha of woodland expansion by 2023 – this includes both new native and productive woodlands which would contribute to the Scottish Government Climate Change plan woodland creation targets. Supporting and encouraging land managers in the National Park to sensitively expand woodland cover is a priority in the National Park Partnership Plan, with a key focus on improving connectivity of existing native woodland and scrub habitats – particularly in the uplands, along hillside burns, and also waterside woodlands on the banks of rivers, burns and lochs in the lowland areas of the Park.
While new native woodland is a priority due its lower percentage in the current woodland resource, it is recognised that sensitively sited and well-designed new productive forest also plays an important role in delivering multiple benefits in the National Park. Early engagement by land managers with stakeholders will ensure that all woodland creation proposals are appropriate.

Implementing Objective 1

The Trees and Woodland Strategy promotes woodland creation that provides multiple benefits for the National Park, especially where it delivers on the conservation objectives outlined in this document.

3.1.2 Improving Woodland Condition and Diversifying Woodland Management

Given the current extent of woodland cover in the National Park (approximately 30%), the sustainable management of existing native and productive conifer woodlands is a priority in order to enhance biodiversity and landscape quality as well as producing timber and non-timber products and services. The key constraints are unsustainable herbivore impacts (both domestic and non-domestic), invasive species, woodlands with limited species diversity and age structure, and limited woodland management options. Productive conifer woodland with suitable management and species diversity can contribute to a woodland habitat network, as well as providing habitat for some priority species, contributing to landscape character, and producing timber. Tree health and woodland resilience are key themes for forestry in the 21st century and development of diverse woodlands will improve resilience and provide more capacity to enable them to respond to rapidly changing natural or socio-economic conditions.

Implementing Objective 2

The Trees and Woodland Strategy will identify issues and solutions to enhance woodland management, with a focus on priority woodland habitats and flagship species found within the National Park (as defined in the *National Park Partnership Plan 2018 – 2023*). The Strategy will encourage increased woodland diversity in species and age structure to deliver more resilient woodlands.

3.1.3 Protecting and Enhancing the Landscape

The National Park is a nationally important landscape whose Special Landscape Qualities are defined by the characteristics that give rise to its renowned outstanding scenery. Protecting and enhancing these features is a priority Conservation and Land Management outcome set out in the *National Park Partnership Plan*. Therefore the location and design of new woodlands, as well as restructuring of existing woodlands and the retention and replacement of parkland and roadside trees, requires recognition of these greater sensitivities.

Good woodland design takes into account a range of different factors such as public access, key visitor destinations, location and type of woodland. In order to be effective, the impact of woodland on the landscape experience should be considered. For example, poor design could lead to negative implications for the landscape character, sites of archaeological importance, local features or key views from main transport corridors, visitor destinations and settlements and valued by local communities and visitors.

In sensitive landscapes where large-scale woodland creation may not be appropriate, there may be capacity for individual tree planting or small-scale woodland planting. This would contribute to improvement in natural capital as well as environmental and economic sustainability.

Implementing Objective 3

The Trees and Woodland Strategy will identify how different types of woodland and tree planting could be located to bring landscape enhancement while not detracting from the Special Landscape Qualities of the National Park. The Strategy will provide a toolkit to assist with woodland landscape assessment and design.

3.1.4 Maintaining and Enhancing Economic Sustainability through Skills and Business Development

As well as supplying softwood into traditional markets, there is potential to further increase the local economic contribution of forestry in rural areas, such as focussing on the benefits of processing and using wood resources near to source, identifying solutions to problematic timber haulage or extraction issues, and delivering tourism and recreation services. This would also include improvement of the local skill base and specialist machinery resources.

New woodlands or improved management of existing woodlands can provide new income streams to farms or estates, while also providing direct benefits such as shelter for livestock. In the face of a warmer, wetter and windier climate, we wish to promote better integration of woodland creation and management alongside others types of land use, including agriculture, game management, tourism services, recreation and renewable energy production.

Implementing Objective 4

The Trees and Woodland Strategy will promote sustainable woodland management of both productive conifer and broadleaf woodlands and integrated land management techniques where appropriate, identifying new economic markets and seeking solutions to issues preventing harvesting/timber haulage of existing conifer forests.

3.1.5 Promoting Cooperative Woodland Management and Creation as Part of an Integrated Land Management Approach

Woodland creation and management has a direct impact on the ecosystems and the economy of a specific location, but can also have wider landscape-scale impacts such as causing changes to the movement of deer, disrupting established sheep hefts or other implications for rural businesses. Even when balanced and informed decisions are taken by individual landowners, these can have impacts on neighbouring properties as well as at a landscape scale. These constraints and opportunities could be assessed at a larger (perhaps even catchment) scale, enabling delivery of complementary land use based on the sustainable land use principles set out in the Scottish Government Land Use Strategy.

Implementing Objective 5

The Trees and Woodland Strategy will encourage and support land managers/owners and local communities to identify the best ways to co-ordinate and manage a balanced approach to woodland management and creation as part of integrated land management to support a healthy environment along with a sustainable rural economy. This support could be achieved by the formation of Land Use Partnerships.

3.1.6 Improved Community Empowerment and Resilience From Active Engagement in Woodland Management

There are a number of existing mechanisms for communities to have greater involvement with woodlands through engagement and consultation on management plans or proposals and discussion with woodland owners and managers. Through the well-established forestry consultation process, local communities can highlight opportunities and constraints which forestry proposals must consider. Recent changes in legislation, including the Community Empowerment Act and Land Reform legislation, has increased the opportunities available for community ownership and community engagement through mechanisms such as the Community Right to Buy, Asset Transfer Requests and guidance on engaging communities in decisions relating to land.

Implementing Objective 6

The Trees and Woodland Strategy will encourage better engagement between local communities and woodland owners or managers to explore opportunities for greater involvement in the use and management of woods, as well as greater understanding of the opportunities and constraints associated with woodland management and creation.

3.1.7 Encourage and Promote Public Access for Recreation and Improving People's Quality of Life

The woodlands of the National Park form a vital part of its recreational resource. Many core paths, long distance trails, community path networks, promoted cycle routes and upland paths are located wholly or partly inside woodlands. Our wooded loch shores are hugely popular for day visitors and camping and the overall landscape of the National Park, of which woodland forms a defining characteristic. The Forest Parks with their extensive access network and diverse forest types make a significant contribution to the National Park's recreational resource. Tourism is the largest economic sector in the National Park and an estimated four million visitors come here each year, whether it is for recreation such as active outdoor pursuits, education, art, contemplation or simply enjoying the view and connecting with nature. New tracks for woodland management can create recreational opportunities and link path networks.

However, there are certain operations such as felling or deer control that have the potential to conflict with recreational use. Other plans and strategies in the National Park have a leading role in delivering this objective, including the Core Paths Plan, Outdoor Recreation Plan, Education and Volunteering programmes and the Your Park Camping Management Strategy. These all depend on woodlands, so the design, siting and implementation of new woodlands, the infrastructure for woodland management and ongoing woodland management operations need to be considered and undertaken with care to ensure that they contribute to maintaining and improving this tremendous national resource.

Implementing Objective 7

The Trees and Woodland Strategy will encourage and promote responsible access as detailed in Land Reform legislation and related guidance, while encouraging and supporting the diversification of the public use of woodland, including for recreation and education opportunities.

QUESTION 2

a) Do you agree with the seven objectives and rationale?
b) Are there any changes you would make to the objectives and rationale?

4 Delivering National Park Partnership Plan Priorities

4.1 Management of Existing Woodlands

Given the extent of woodland cover within the National Park, the management of the existing woodland has a key role in delivering the objectives of this strategy. Opportunities to deliver the priorities detailed in section 4 of this document should be identified during the production of any management plan. The delivery of specific priorities would depend on the location and opportunities presented by each forest.

4.1.1 Native Woodland

Management of native woodland (including designated sites) should aim to deliver improvements in woodland condition such as increased structural diversity. The priority management actions are:

- Management of herbivore impacts to sustainable levels.
- Control of invasive species.

Focusing on designated sites and ancient woodland sites is key to creating and maintaining resilient woodland as these are core areas in the wider habitat network.

In some circumstances it may be appropriate to undertake thinning or other silvicultural interventions however this should be in combination with a holistic management approach rather than as a standalone operation.

4.1.2 Productive Conifer Forests

The key enhancements that management of productive conifer forest should deliver are:

- Creating landscape-scale woodland habitat networks across ownership boundaries incorporating prioritised areas (including PAWS) for native woodland conversion and use of Low Impact Silvicultural Systems (LISS).
- Extending age class diversity throughout a forest to optimise structural diversity and extend economic opportunities.
- Manage herbivore impacts to sustainable levels.
- Enhance the contribution of forests to the landscape character and cultural heritage through design of the felling coupes, use of LISS and replanting proposals which maintain species and visual diversity.
- Careful planning and construction of forest roads and other infrastructure.

- Benefiting flagship species that are indicators of habitat condition such as black grouse, red squirrel and brown trout.

The enhancements are in line with UKFS General Forestry Practice Requirements:

- No. 11: 'In Designated areas, for example National Parks, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.'
- No. 14: 'Forests should be designed to achieve a diverse structure of habitat, and species and ages of trees, appropriate to the scale and context.'

In order to deliver these requirements, considerations such as additional open ground, increased species diversity or smaller felling coupes may be required in designs.

QUESTION 3

a) Do you agree with the Management of Existing Woodlands section?
b) Is there anything you would change about this section?

4.2 Targeting Woodland Creation

The National Park Partnership Plan has a clear ambition for sensitive woodland expansion within the five-year plan period. This expansion will deliver multiple benefits such as carbon sequestration, habitat connectivity, landscape enhancement, natural flood management and increased recreational opportunities. However, the careful selection of location, along with design and species choice for any scheme is essential to ensure that multiple benefits are delivered and negative impacts avoided. The landscape of the National Park is integral to its identity and culture as well as being the foundation of its largely tourism-dependent economy. Proposals for the creation of new woodlands and forests in the National Park need to be designed to high standards, and National Park Authority officers are able to provide advice and support to help deliver this.

As part of the due diligence process for any proposals, such factors such as deep peat, designated features, landscape character, cultural heritage, priority species and habitats or other wildlife constraints must be assessed on a site-by-site basis. Early engagement with relevant stakeholders is key to identify the opportunities and issues with a specific site.

There are opportunities to establish woodland using wide variety of species, both native and non-native, however careful selection is required based on soil types and climatic factors in order to design a scheme which fulfils the owner's objectives while being appropriate for the local landscape.

The use of the Landscape Toolbox will aid in proposals being designed to take into account the sensitivities present for a particular scheme. (see section 4.2 for details).

The National Park hosts a wide range of open habitats important for the wildlife they support, the jobs they provide and the wider ecosystem services they deliver. These include farmland providing habitat for wading birds; peatlands; moorlands and species-rich grasslands hosting a broad diversity of fungi, plants and animals. If carried out sensitively, new woodland creation will compliment and not conflict with these other important land uses.

All woodland creation proposals would be underpinned by UKFS General Forestry Practice Requirements No. 17: 'New forests and woodlands should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape.'

4.2.1 Native Woodland

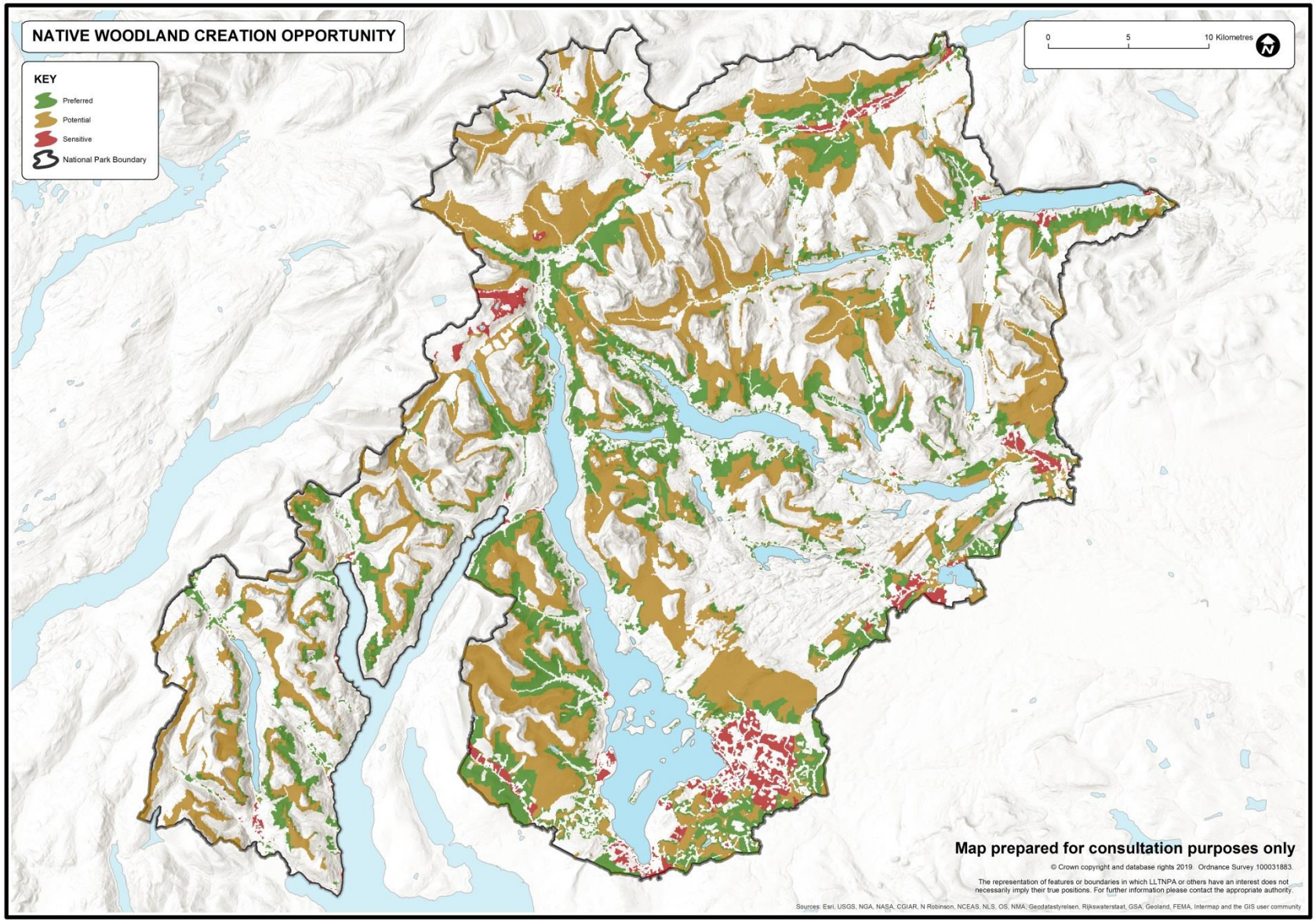
There is great scope to expand native woodland in the National Park for the biodiversity, landscape and socio-economic benefits previously mentioned.

Spatial analysis (Appendix 1) has been undertaken to identity preferred potential and sensitive areas where native woodland creation would deliver this strategy's objectives. The analysis is based on Scottish Forestry data sets, native woodland integrated habitat networks, climate suitability for tree growth and Plantlife's climate suitability for bryophyte habitat. Native woodland creation in these areas could include establishment at productive densities.

- Preferred areas are where native woodland creation would have the greatest impact in improving woodland connectivity, providing a more suitable climate for tree growth and contributing to expansion of the Bryophyte Important Plant Areas.
- Potential areas are those where native woodland creation would contribute to the wider strategy's objectives.
- In sensitive areas, there is limited capacity for woodland creation due to higher value nature conservation or landscape objectives. However, individual tree planting, small-scale planting (less than 0.25 ha) or agroforestry may be supported where it contributes to this strategy's objectives without negative impact on the particular sensitivity.

Notwithstanding the spatial analysis any proposal would still require surveys to be undertaken to identify any site-specific constraints.

While native woodland generally has a lower impact on the landscape, care is still required when designing the planting boundaries and fence lines to ensure they are sympathetic to the landform, existing woodlands and recreational access routes.


NATIVE WOODLAND CREATION OPPORTUNITY
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Map prepared for consultation purposes only
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The representation of features or boundaries in which LLTNPA or others have an interest does not necessarily imply their true positions. For further information please contact the appropriate authority.
Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

4.2.2 Productive Woodland

Given the uncertainty in agricultural markets and support along with the current favourable economics associated with forestry, diversifying into productive woodland is likely to be given greater consideration by many land managers. These options range from small-scale woodlands for firewood or integration with livestock management, as well as large-scale, well-designed productive forests as a renewable resource for timber and other uses. Careful selection of site, design and scale would be required given the National Park's landscape designation and biodiversity consideration. The creative use of native woodland, mixed conifers and mixed broadleaves will often be required to ensure that forest design contributes fully to all of the objectives of the National Park.

4.2.2.1 Productive Conifers

Productive conifer proposals should be designed to deliver multiple objectives of the strategy appropriate to their location. Proposals that combine native woodland creation with diverse conifer and/or productive native or non-native broadleaves would be encouraged where significant multiple objectives of the strategy are delivered in a landscape suitable location.

Productive conifer proposals would be favoured where:

- There is landscape capacity i.e. medium or greater as shown in Appendix 2 for productive conifer woodland that would enhance landscape character, visual amenity, scenic quality or existing management practices – for example where new woodland would improve landscape fit of existing conifer blocks.
- Existing hill track access and the public road network are suitable for timber extraction.
- They would extend the woodland habitat network by connecting existing native woodlands and remnant trees with new native woodland or open ground within the proposed woodland.
- The loss of open ground would not have a significant negative impact on priority habitat and species.
- Where the diversification of land use supports an existing holding in continuing other enterprises.

The introduction of non-native seed sources into upland open habitats, riparian zones, adjacent native woodland or designated sites must be considered and detail of management to prevent establishment of non-native trees in these sensitive areas should accompany any woodland creation proposal.

In the design of the productive conifer scheme, it is likely that some or all of the following may be included:

- Native woodland, for example in riparian zones to create and connect woodland habitat networks or at the margins to improve landscape fit.
- Appropriate conifer and/or productive broadleaves species diversity where conditions are suitable.
- The designing of future wind firm boundaries for both felling coupes and extraction infrastructure.
- Open ground to deliver conservation or landscape enhancements.

Use of different species with different growth rates would not only contribute to diverse woodland as it is established but spread the timing of future felling. Where this is not possible, future thinning should be considered to create a more wind-firm coupe in order to widen the period of felling.

4.2.2.2 Productive Broadleaves

Within the National Park there is potential for broadleaves, both native and non-native, to be managed productively in a new woodland. The use of broadleaves would be encouraged as part of species diversification, contributing to improved landscape fit of a design or as a standalone woodland creation proposal where appropriate.

New productive broadleaf woodland may offer more scope in some locations for new woodlands which are more sympathetic to current landscape character than productive conifer. However, care must be taken when choosing locations of non-native productive broadleaved woodlands so that they do not threaten native woodland by the introduction of non-native tree species.

QUESTION 4

a) Do you agree with the Targeting Woodland Creation section?
b) Is there anything you would change about this section?

5 Strategy Guidance

The following guidance indicates how each topic should be considered to achieve our strategic objectives and is underpinned by UK Forestry Standard along with other national policies and guidance.

5.1 Habitat Enhancements

5.1.1 Woodland Habitat Networks

Habitat networks are areas of habitat that are connected in such a way that dependent species can disperse between the areas to create linked populations. A healthy and sustainable habitat network enables species to be more resilient to environmental changes.

New woodlands can create enhancements in woodland habitat networks both by linking existing woodlands or remnant tree cover, as well as increasing woodland habitat. Improvements in the condition of existing native woodland would also enhance the resilience of this network and are the core areas on which the networks should be based.

In addition, creating new woodland in a currently unwooded area provides expansion of habitat networks for more mobile species while also establishing future core areas for expansion.

When expanding habitat networks, there is a risk of invasive non-native species (INNS) spreading as a result of improved connectivity and this risk must be controlled by INNS management, as well as careful planning of such networks.

As a guiding principle, when productive conifer forests are restructured, a robust and sustainable woodland habitat network should be designed both within the individual holding and across the wider landscape. This can be achieved through creation of additional areas of open ground and native woodland, which could be complemented by the use of low impact silvicultural systems (LISS) to link existing native woodland, open ground, PAWS restoration areas or riparian zones.

The creation of landscape-scale woodland habitat networks requires adjacent land managers cooperating by discussing and sharing their proposals, to ensure that suitable habitat links are created across ownership boundaries.

Forestry proposals that contribute to the improvement of a robust woodland habitat network both within a management unit and at a landscape scale would be encouraged.

5.1.2 Riparian Woodland

Native woodland within the riparian zone is important as it delivers multiple benefits:

- Improvement in water quality by reducing diffuse pollution and sedimentation risk from run off;
- Improvement in aquatic habitat for fish by increased provision of food;
- Managing erosion by increased bank stability;
- Shade for management of temperature extremes; and
- Contributing to natural flood management, as well as enhancement of landscape character and visual amenity.

Riparian zones often have remnant woodland and trees; these provide network corridors for both aquatic and terrestrial wildlife. This seed source should be protected and enhanced, for example by excluding grazing or enrichment planting.

The riparian woodland should provide an open woodland canopy with dappled shade. Published Research by Marine Scotland provides guidance as to locations and river bank aspects vulnerable to temperature extremes which should be targeted for planting.

Future management to maintain this open canopy balance in open and wooded areas must be considered when designing riparian woodland.

Establishment of riparian woodland within productive conifer forests can aid the good design of such schemes by creating both visual and habitat links between montane and upper edge woodland and lower woodland, adding diversity of structure, texture and colour, as well as providing additional protection to the riparian zone during harvesting or restocking operations. Where there are non-native conifers within the riparian zone, these should be managed to enhance riparian habitats as part of any approved management plan.

Woodland creation proposals should create riparian native woodland where it is lacking and enhance existing riparian woodland through appropriate design.

5.1.3 Montane Woodland

Within the National Park there are relatively limited areas of native montane woodland as a result of historic land management practices, although remnant trees persist on some inaccessible areas such as cliffs or steep gorges.

The increase in montane woodland would have benefits for many species by providing diversity in habitats and forage. Montane woodland when associated with existing forests would also deliver landscape enhancement by removing a sharp transition between afforested and open habitats by the establishment of natural tree line. These woodlands are generally established at lower planting density with reduced species diversity.

Enhancing remnants of montane woodland and trees by protecting natural regeneration from herbivores should be a priority because these surviving trees will generally be well adapted to the local conditions and likely persistence of mycorrhizal soil fungi (beneficial fungi found near roots); leading to more resilient woodland.

The inclusion of montane and edge woodlands in all appropriate woodland creation proposals would be strongly encouraged due to their contribution to improved landscape fit and habitat provision for priority species, such as black grouse and golden eagles.

5.1.4 Priority Woodland Habitats and Flagship Species

The native woodlands of the National Park feature extensive tracts of Atlantic Oak woodland with internationally important bryophyte assemblages (mosses and liverworts). There are also small remnants of Caledonian Pinewood and other less common woodland habitats, such as wood pasture and parkland trees, that add to the biodiversity of our total woodland resource.

Many of the iconic species of the National Park will benefit from expansion in woodland extent and improved management of existing woodland. The presence of Pearl Bordered Fritillary butterfly would be considered an indicator of good native woodland condition.

5.1.4.1 Key Woodland Types

The Native Woodland Survey of Scotland identified the location of the different native woodland types within the National Park. Any proposal for restocking or woodland creation should use this data to help identify the most appropriate woodland type for creation based on the adjacent existing native woodland as well as other considerations such as soil and altitude. The following woodland types have been identified as key for restoration and creation.

5.1.4.1.1 Atlantic Oak Woodlands

The management of the existing oak woodland and creation of new oak woodland is a high priority within the National Park, due to the designated status of many of the existing native oak woodlands and the need to improve ecological connectivity between them. The high rainfall and humidity of the oceanic climate of the National Park makes them an ideal habitat for internationally important populations of bryophytes. Plantlife's 'Important Plant Area' data for bryophytes has been used to inform the woodland creation priority mapping for this reason. When expansion of oak woodland is consider either by woodland creation or a restructuring proposal use of Plantlife's data would identify suitable areas for, which would have maximal suitability for bryophytes.

5.1.4.1.2 Caledonian Pinewoods

There are two remnant areas of ancient native pine woodland in the National Park and the expansion and improved connectivity of these areas is a priority. Current guidance is that expansion from these core areas into their buffer areas should be by natural regeneration of Scots pine in order to minimise the risk of Dothistroma Needle Blight infection. The inclusion of native pine in the design of restocking proposals would improve connectivity of these remnants, in terms of habitat and landscape, so would contribute to this objective. New native pine woodland has recently been established in Glen Dochart and, where suitable, there are site conditions for new Caledonian woodland within the National Park. These opportunities should be explored as part of any new scheme.

5.1.4.1.3 Ancient Woodland and Trees

Ancient woodland (woodland since at least 1860) should be a focus of enhancement and restoration efforts such as herbivore management and invasive species control due to their high level of biodiversity. This would help to form important core areas of any woodland habitat networks. (See section 4.1.6 regarding PAWS.)

Ancient and veteran trees mainly outside woodland represent significant biodiversity hotspots. They can be found in a formal designed landscape or in wood pasture settings, as well as in the wider landscape. The management of these trees should be accompanied with planting trees to create future hosts of fungi, bryophytes, invertebrates and replacement landscape features.

5.1.4.2 Notable Tree Species

5.1.4.2.1 Juniper

There are locally significant populations of Juniper in the Strathyre area and opportunities to protect and enhance these populations should be encouraged.

5.1.4.2.2 Crab Apple

Research has found that Loch Lomond and its islands have a significant number of true crab apple trees. Opportunities to protect and enhance these populations should be undertaken.

With both these species, establishment of a seed collection and seedling availability for woodland creation would be key steps to delivering these enhancements.

5.1.4.3 Black Grouse

Black grouse are a priority UK Biodiversity Action Plan species, and on the red list of Birds of Conservation Concern due to significant declines in between the last two national surveys (1995 and 2005). As a good indicator of the health of upland ecosystems, they are a priority for conservation action within the National Park and as such are identified as a flagship species in the *National Park Partnership Plan*. Black grouse are widely distributed across the Park although at low numbers. Appropriate native woodland creation in the Great Trossachs National Nature Reserve, along with some open ground management, has led to an increase in and stabilisation of records from 2008 to 2017.

Woodland design features that would benefit black grouse include having a proportion of low-density native woodland, connected open ground focussing on nesting (good quality heathland) and brood-rearing habitat (such as bog myrtle, blueberry rich habitat, wet flushes, bogs and mires). Fencing should be minimised where possible, and carefully sited and marked according to standard guidance for both woodland creation and re-stock sites.

Where possible, appropriate open ground management should be implemented in combination with woodland management or woodland creation proposals in order to maximise benefits for black grouse.

All relevant woodland creation proposals should be assessed to determine potential impacts on black grouse and, if deemed an appropriate location for planting, incorporate measures to benefit the species.

Woodland management proposals must enhance the habitat to benefit black grouse where the woodlands are near known black grouse populations.

5.1.4.4 Red Squirrels

Red squirrels are widely distributed in the National Park apart from the southern Loch Lomond area. The south east boundary of the National Park approximates to the current priority grey squirrel control area. In this area, woodland management and creation proposals should consider grey squirrel control and tree species should be selected to favour red squirrels. However, this needs to be balanced against other benefits from creating diverse native woodland.

While red squirrels thrive in native broadleaved woodland in the absence of grey squirrels, in control areas the exclusion of large seeded broadleaves should be considered to prevent habitat enhancements for grey squirrels. In productive conifer forests, establishing mature stands of species such as Norway spruce, firs and Scots pine provide better forage for red squirrels than species such as Sitka spruce.

There is a healthy population of red squirrels in Cowal and currently the combination of control efforts and woodland composition around Arrochar and Glen Croe helps to maintain conditions that prevent the infiltration of the grey squirrels. Conditions that result in healthy pine marten populations are also an important consideration in suppressing grey squirrel numbers.

Woodland management plans where red squirrels are present should aim to maintain seed bearing stands and design restructuring plans to ensure further seed bearing stands are created. This could be achieved by the use of additional diverse conifer species and use of Low Impact Silvicultural Systems as well as native woodland.

5.1.4.5 Brown Trout

Trout are the most populous native freshwater fish species in Scotland and are ubiquitous in many water bodies of the National Park. They require clean and cool water to thrive and are therefore a good indicator of aquatic health. Well designed and managed riparian woodland would benefit trout by provision of leaf litter and dead wood to enhance insect provision and refuge areas; reduce risk of pollution and sedimentation; and to protect against water temperature extremes.

5.1.4.6 Eurasian Beavers

This native species has recently returned to Scotland following a reintroduction project and unregulated releases. In riparian woodland, beavers can be a valuable addition to the ecosystem by maintaining the matrix of canopy cover and open areas. Currently within the National Park, beavers occur within the upper Tay, Earn and Forth catchments, but evidence suggests that the species is steadily colonising new areas to the south. River systems which have lost historic riparian woodland and trees and have a lack of riparian woodland regeneration limit the extent of suitable beaver habitat, although beavers can disperse through such systems. There is a need to ensure browsing levels by other herbivores in riparian woodlands enables tree regeneration to become established following beaver feeding. There is a minor risk that woodland creation sites close to water courses may become negatively affected by beavers during the establishment phase, particularly if aspen is present. Consideration will be required to protect these areas through stock fencing to ensure establishment.

5.1.4.7 Other Notable Species

Aside from the species highlighted above, there are a number of notable species present within the National Park that require consideration when devising woodland creation and management proposals. This includes species protected by law and those listed on the Scottish Biodiversity List. Depending on the nature and location of proposals, potential impacts on species such as golden eagle, red squirrel, pine marten, bats, otter, water vole and badger may need to be considered. The potential presence of such species should be established through a desk exercise, using sources such as the NBN Atlas Scotland, and early consultation with Scottish Forestry, the National Park Authority and relevant organisations such as RSPB and Raptor Study Groups. This information should then be used to determine if a proposal is appropriate, the need for specific survey work, mitigation measures and inform the design of the proposals to avoid negative impacts and provide enhancement where possible. If the implementation of mitigation measures is not sufficient to avoid offences under protected species legislation, a licence will be required from Scottish Natural Heritage (SNH) before works can proceed. Further guidance on the consideration of protected and priority species in relation to woodland creation and management can be found in section 6.1 of UKFS.

5.1.5 Invasive Non-Native Species

Invasive non-native species (INNS), such as invasive rhododendron and Himalayan balsam, are recognised as one of the major threats to native woodland due to their impact of suppressing tree regeneration, the field and shrub layers, along with impacting on internationally important bryophyte populations. These species (especially rhododendron) can also negatively affect productive conifer forests, due to the impact on restock sites where replanting is delayed.

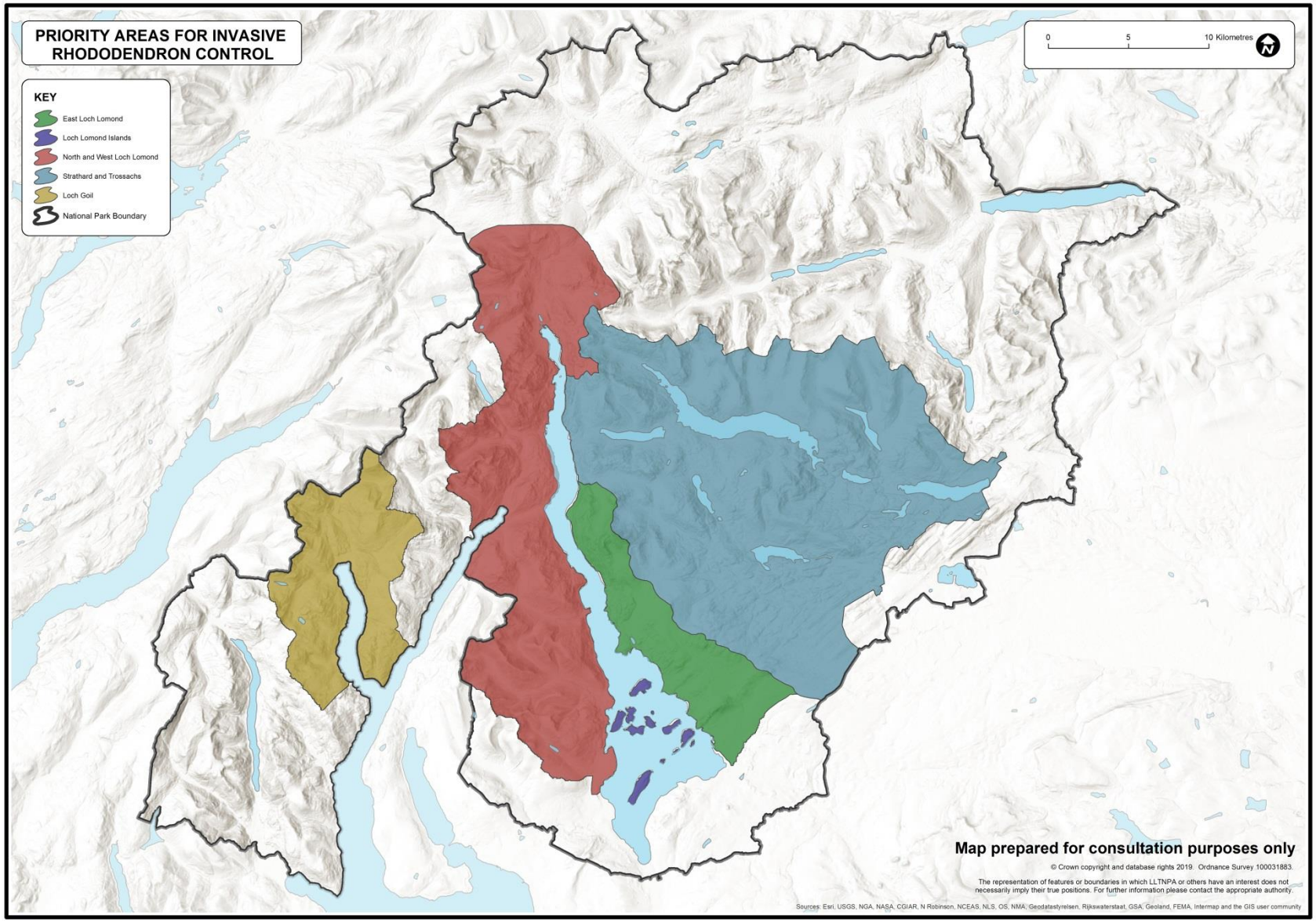
Invasive non-native species control projects should be developed and supported where they would deliver sustainable catchment or population-scale protection using designated sites and other important woodland and open habitats as focal points. For example, a rhododendron control project is likely to be based around existing efforts to remove remaining seed sources which often exist outside of woodlands but still represent a significant threat to any sustainable control effort. Any control project would require close and effective partnership working between agencies, land managers or owners, domestic homeowners and community representatives. Such projects will likely have overlap with riparian INNS control efforts and implementation of combined catchment-scale INNS control should be considered. These projects should also consider habitat restoration as well as control of INNS.

Development of projects in areas without existing control work would also be considered where sustainable control is considered feasible.

Where INNS are present, any forestry proposals must consider management to control the species present especially when this would contribute to a landscape-scale control project. Where INNS is present on multiple adjacent holdings, the National Park Authority will assist by facilitating discussion between land managers/owners with the aim of ensuring INNS management is sustainable.

Natural regeneration of non-native conifers represents a risk to upland open habitats as well as designated woodland sites and is likely to increase with the reduction of herbivore pressure.

Forest management plans must aim to minimise this risk and should include management as recommended in current guidance to control any establishing stand, along with their removal from riparian zones, peatland and other priority habitats.


PRIORITY AREAS FOR INVASIVE RHODODENDRON CONTROL
KEY
East Loch Lomond
Loch Lomond Islands
North and West Loch Lomond
Strathard and Trossachs
Loch Goil
National Park Boundary
0
5
10 Kilometres
N
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Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

5.1.6 Plantations on Ancient Woodland Sites Restoration

3,450 ha of woodland in the National Park (6.6% of all woodland) are Plantations on Ancient Woodland Sites (PAWS) - i.e. areas that are recorded on the Ancient Woodland Inventory but are currently under non-native tree cover. These areas are a focus for restoration to native woodland as they often retain ancient woodland remnants and consequently produce more diverse native woodland when restored. It should be recognised that ancient woodland remnants, as well as other important native woodland, can be found outside these recorded PAWS areas and so it is likely that detailed surveys of a wider area within a woodland may be required to identify all the priority areas for restoration. Restoration can be undertaken over a number of rotations or by establishing a productive broadleaves crop, as well as conversion to native woodland in a single step. These restoration areas should form part of the woodland habitat network.

5.1.7 Restructuring of Productive Conifer Woodland

As conifer forests mature there are opportunities to increase the resilience of the future forests and deliver an increased range of benefits. While these opportunities are greatest in the first rotation, there may be opportunities in subsequent rotations for consideration. The restructuring is also an opportunity to address issues such as water quality problems like diffuse pollution and acidification, protecting and enhancing archaeological features and improving the landscape fit of original planting designs. These outcomes are often achieved by good felling design which considers proposed coupe shapes and size, and diversifying age classes and species composition of the restock. The dominance in productive conifer forests of a single productive species does present a challenge maintaining productivity while achieving resilience to pathogens and climate change through species and age diversity.

A restructuring proposal should include designed open ground and new native woodland which should be linked with existing native woodland to form a forest habitat network, while increasing species diversity of productive conifer elements, appropriate to the context of the specific forest. This diversity, along with age diversity, aids the development of a resilient forest against future climate change and potential pests or diseases. The development of a restructuring plan also needs consideration of the impact on recreational and visitor experience, along with landscape quality. There are opportunities to innovate how this species diversity is provided, either by trialling novel conifer species or using species in a different manner (such as using broadleaves as a productive element or increasing the delivery of non-timber products and services). The use of thinning where appropriate aids both the timber quality while also adding further diversity to the felling period of future crops. While it is recognised that clear-felling of conifers would remain a preferred silvicultural approach, due to the environmental constraints in many locations, opportunities to establish low-impact silviculture systems (LISS) would be encouraged where they would have a landscape impact. The restructuring should also establish a future felling structure which would minimise landscape impacts and maintain ecological connectivity.

5.1.8 Climate Change and Tree Health

There have been outbreaks of various *Phytophthora* in the National Park and *Chalara* ash dieback is now established within the National Park. The loss of larch due to *Phytophthora ramorum* is already occurring both through felling of infected stands and as larch is no longer recommended for replanting. This will over time have an impact on the visual diversity of the productive conifer forests, especially in prominent locations where a significant proportion of larch is present such as Loch Eck and the Achray Face east of Aberfoyle. Replanting proposals where larch has been felled must consider maintaining the species and seasonal diversity. This is likely to require the use of additional native or non-native broadleaves along with diverse conifer species.

Management of *Chalara* infected ash stands must be carefully considered and conservative intervention such as thinning and protecting regeneration would be encouraged so that any tolerant strains can emerge to maintain ash's contribution to woodland biodiversity. Enrichment planting may be appropriate in some cases, but must be considered on a site-by-site basis and guided by current best practice.

In addition to creating resilient woodland, it is important to raise public awareness both in reporting possible plant health issues and influencing behaviour to reduce the risk of diseases.

Wild fires may be a risk during woodland establishment from drier springs and the build-up of an ungrazed field layer. Once trees are established, introduction of managed grazing can be a possible approach to manage this risk in native woodland.

In woodland creation proposals, assessing the suitability of the site should also include Ecological Site Classification tools based on predicated climate change as this may influence species or provenance selection.

QUESTION 5

a) Do you agree with the strategy guidance on habitat enhancement?
b) Is there anything you would change about this strategy guidance?

5.2 Landscape Integration and Special Landscape Qualities

5.2.1 Special Landscape Qualities and Landscape Character Consideration in Woodland Design

The Special Landscape Qualities of Loch Lomond and The Trossachs National Park (referred to in SNH Commissioned Report No. 376 2010) are defined as 'the characteristics that, individually or combined give rise to an area's outstanding scenery'. Due to the heterogeneous nature of the National Park it is most easily divided into four landscape areas: Argyll Forest, Loch Lomond, Breadalbane and the Trossachs.

The report identifies the qualities that make the landscape and scenery special in the Park's four landscape areas. These qualities are underpinned by the landscape character within them and their key characteristics.

Overview qualities include 'wild and rugged highlands', 'water in its many forms', 'the rich variety of woodlands' and 'tranquillity'. There is already great woodland variety throughout the Park, with ancient native woodland, wood pasture, farmland trees and policy plantings as well as commercial forest cover. Woodlands define the lower and mid glen slopes and distinguish them from the open uplands. They enclose settlements and clothe loch shores and islands. They are important visually, bringing a tapestry of texture and colour that changes throughout the year.

Specific landscape area qualities include:

- 'The dramatic pass of the Rest and Be Thankful' of the Argyll Forest – a natural major route leading through the mountains where wild qualities can be experienced and where scope exists for landscape and visual enhancements to the upper treeline within the upland glen.
- 'The banks of broadleaved woodlands' of Loch Lomond which are characteristic throughout the lowland loch basin with extensive semi-natural woodland and designed landscapes and estates along the shore.
- 'Expansive Glen Dochart' in Breadalbane where the strath and glen floor is characterised by pastoral qualities, riparian woodland and has predominantly forested glen sides.
- 'The gateway town of Callander' in the Trossachs, which is famous for its dramatic natural setting and designed landscape character where there is scope for local enhancements.
- 'The tranquil Lake of Menteith' with its distinctive lowland scenery and backdrop of parallel ridges.

The Special Landscape Qualities outlined above will be protected by well-designed proposals. However, care must still be taken to complement forestry proposals in areas where woodlands sit adjacent to open ground. Sensitive design of the transition between forest and open areas can be achieved using varied planting densities, species diversity and open ground. These design principles should be applied adjacent to important recreational routes to create a varied experience for users. Where proposals are adjacent to other woodlands the design must consider the neighbouring forest proposals to ensure that they work together. These approaches will deliver well-designed proposals which blend with the surrounding landscape.

5.2.2 Landscape Capacity Study

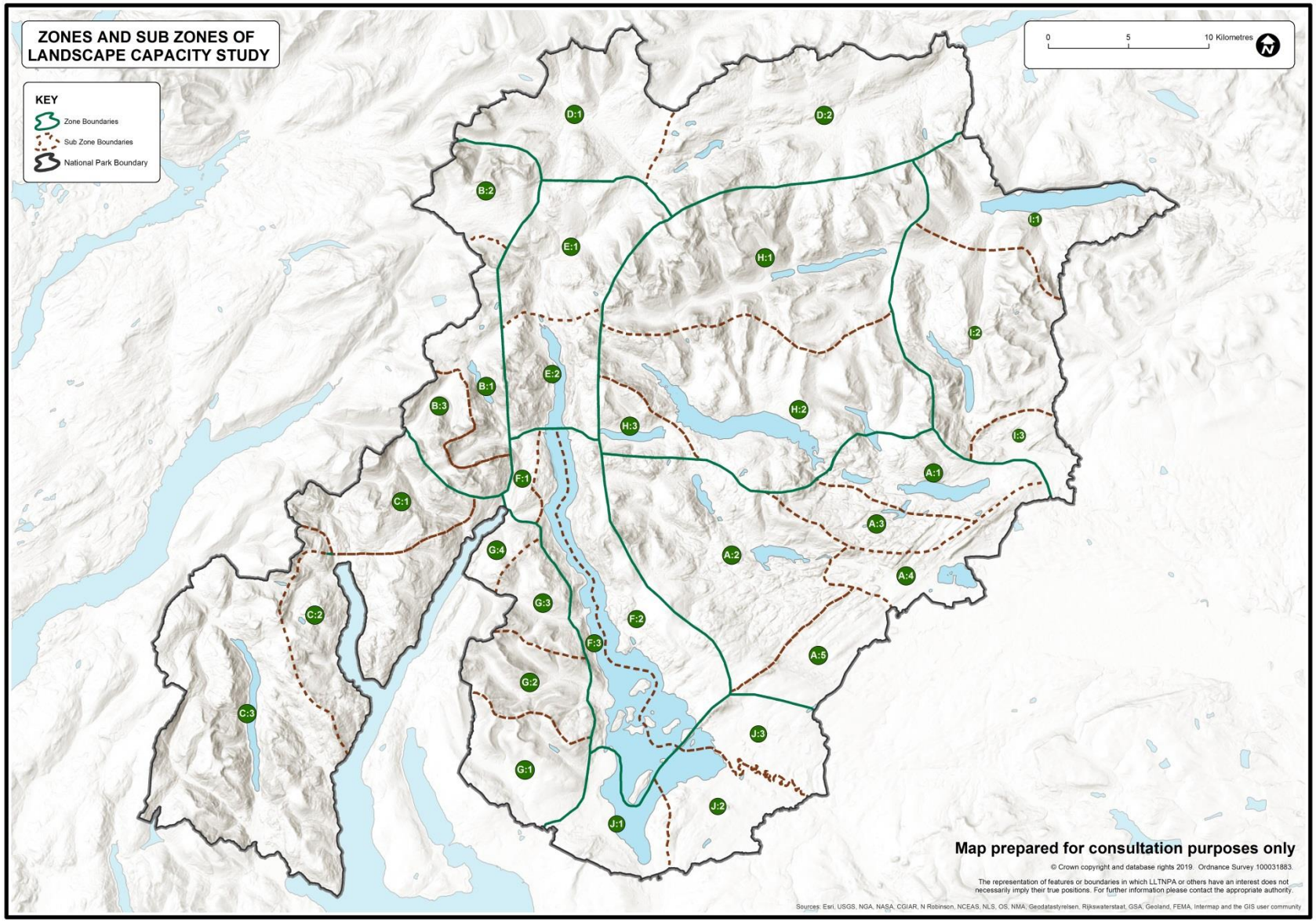
The National Park is a landscape designation and as such the impact of any woodland proposals must consider the current landscape baseline with an aim of achieving landscape improvements where possible. This includes the Special Landscape Qualities, landscape character, visual amenity and perceptual qualities (wildness, dark skies

and tranquillity). Different areas of the National Park have a range of sensitivities and capacity for change, so each type and scale of a woodland proposal has a different impact.

In order to facilitate forthcoming woodland management and woodland creation schemes, a Landscape Capacity Study (Appendix 3) was commissioned to aid the development of appropriate schemes for each area. It is a strategic study and does not replace the need to undertake site-specific assessments for woodland proposals.

5.2.3 Findings of Landscape Capacity Study

The detailed impact assessment highlights the overall sensitivities of ten landscape zones and their sub-zones, assesses landscape capacity, and puts forward guidelines for woodland proposals. The overall capacity summaries for each zone and sub-zones are collated in Appendix 2. The capacity assessment work within the study is detailed in Appendix 3. Where parts of sub-zones are not covered by the viewpoint assessment, it is possible that landscape capacity for new planting in these areas could vary quite significantly to the findings identified in this study and would require a site-specific assessment to be undertaken using viewpoints agreed with National Park advisors.


ZONES AND SUB ZONES OF LANDSCAPE CAPACITY STUDY
KEY
Zone Boundaries
Sub Zone Boundaries
National Park Boundary
0
5
10 Kilometres
N
D:1
D:2
B:2
E:1
H:1
I:1
I:2
E:2
B:1
B:3
H:2
H:3
I:3
A:1
F:1
C:1
A:3
G:4
A:2
A:4
G:3
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F:3
A:5
G:2
C:3
J:3
G:1
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J:1
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Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Landscape Toolkit

The Landscape Toolkit has been developed by Loch Lomond & The Trossachs National Park Authority from the assessment methodology of the Landscape Capacity Study. This will allow specific proposals to be assessed consistently and in the same vein as the study itself.

It consists of a blank pro-forma table to be used by agents or others in considering their specific woodland creation or management proposals, and includes guidance notes on how to use it. The toolkit is at Appendix 4.

The Landscape Toolkit can be used to assist with the assessment of proposals of any size. Its use is particularly recommended for any proposals for the sensitive areas in Map 4 and significant schemes in other locations. The National Park Authority can provide advice on its use.

Use of the pro-forma table would aid the design of a woodland creation scheme or management proposal using the step-by-step assessment approach outlined in the toolkit guidance.

QUESTION 6

a) Do you agree with the strategy guidance on landscape integration and special landscape qualities?
b) Is there anything you would change about this strategy guidance?

5.3 Integrating Woodland with Other Land Use

5.3.1 Designated Sites

This document has been subject to Habitats Regulations Appraisal (HRA) and this has informed the opportunities map for native woodland expansion and identified mitigation measures for specific European Designated sites as set out in Appendix 5.

All proposals for woodland creation or management within, or likely to have a significant effect on, the qualifying interests of a European Designated site will be required to be subject to Habitats Regulations Appraisal. Early consultation with Scottish Natural Heritage is recommended in these circumstances.

The opportunities map for native woodland expansion has also been screened for potential conflicts with the notified interest of Site of Special Scientific Interests (SSSIs) at a broad scale. Where it was clear that the interests of an SSSI would not be compatible with native woodland expansion, these sites were classified as 'sensitive' on the map unless another notified interest of the site would benefit from native woodland expansion.

All proposals for woodland creation or management within or affecting a SSSI will need to demonstrate that they will protect all notified interests of the SSSI. Again, early consultation with Scottish Natural Heritage is recommended in these circumstances. Details of the broad scale assessment of the sensitivity of SSSIs to native woodland expansion are presented in Appendix 5 along with a general indication of the issues that will need to be addressed by proposals.

To ensure species of appropriate provenance and to avoid the risk of introducing pathogens via planting stock (e.g. *Dothistroma* needle blight in native pine woodland areas), natural regeneration is the preferred means of expanding woodland cover within or adjacent to designated sites. Planting will only be considered where it can be demonstrated that this is consistent with maintaining or enhancing the interests of the site and appropriate planting stock can be obtained (increased species diversity might be desirable in some circumstances). These principles also apply to proposals for woodland expansion within or adjacent to ancient woodland.

Any management plan which includes or is adjacent to a designated site should consider proposals that would improve the designated site condition.

5.3.2 Geological Conservation Review Sites (GCRs)

The Geological Conservation Review (GCR) is the register of known nationally and internationally important Earth science (geological and geomorphological) sites in Great Britain. The majority of GCR sites have protection through designation as geological features in SSSIs but there are more than 200 GCR sites in Scotland that have no protective SSSI designation status. There are currently 11 of these 'un-notified GCR sites' within the National Park and the location of these sites can be viewed on the Scotland's Environment website.

Woodland expansion within earth science sites can obscure views of important exposures and landforms. Larger tree roots can also disrupt buried interests. As a consequence, any proposals for woodland creation or management within or affecting an un-notified GCR site will need to demonstrate that they will not compromise the interest of the site. Proposals for the management or restructuring of existing woodland should also seek to maintain and, where possible, enhance views of important exposures/landforms and protect buried interests. Similar consideration should be given to sites of geological importance in the National Park identified through future research and audit.

5.3.3 Designed Landscapes

The National Park contains seven sites recorded on the National Gardens and Designed Landscapes inventory, along with a further 30 sites recorded as of local significance. Details of these sites can be found in Appendix 6. Any woodland management plans must consider include measures to maintain and enhance these designed landscapes. Some designated landscapes do have capacity for woodland creation and are shown as being preferred or potential on the native woodland creation opportunity map above. It is recognised that the use of specific non-native species may be appropriate to maintain and enhance some designed landscapes. Those landscapes which do not have capacity have been shown as sensitive on the above map.

5.3.4 Open Ground Habitats

The impact of woodland creation proposals on current open ground habitats must be assessed and particular consideration given to conserving, enhancing or restoring priority open ground habitats identified in the Scottish Biodiversity List. Particular consideration needs to be given to avoiding significant negative impacts on these habitats and incorporating them into a wider habitat network which should include the variety of open ground habitats present. As part of this assessment, the extent, condition, quality and connectivity of any priority habitats present must be established to inform how that habitat is considered in relation to a woodland creation proposal. The relative value of existing habitats versus the proposed woodland creation must be taken into account. In large-scale woodland creation design, use of tools such as Integrated Habitat Networks mapping could be used to maintain connectivity for open habitats and maximise the woodland habitat network benefits from proposals (see SNH Interactive habitat network user tool).

5.3.5 Peatland

The importance of protecting peatland and its restoration contribution to climate change mitigation is internationally recognised. Within the National Park, there is a target of restoration of 2,000 ha by 2023. There is a presumption against tree planting on deep peat (more than 50 cm) and on sites that would compromise the hydrology of adjacent bog habitats. Woodland creation sites must be designed so there would be no impact on the habitats on deep peat or adjacent bog habitats. Where productive conifer on deep peat is being restructured, consideration of peatland restoration or creation of bog woodland would be encouraged in line with current guidance.

5.3.6 Wild and Feral Herbivores

Sustainable management of these herbivores will deliver public benefits and in the National Park there are nine collaborative groups set up to manage deer, but who also look to manage other herbivores when the need arises. A number of these public benefits are relevant to woodland creation and management: improvement in native woodland conditions; identifying opportunities for woodland creation; and improvements in native woodland designated site condition. These public benefits for each group are

balanced with differing management objectives for the members, such as conservation management, productive forestry, domestic stock management and commercial deer or goat stalking. The inclusion of forest managers and owners in these groups is key to holistic management in a specific area.

Effective herbivore control can improve the condition of native woodland, aid the establishment of diverse conifer restocks and help mitigate the risk of vehicle collisions with deer. Therefore, herbivore control must be included in all management plans. Where woodland creation is undertaken there is a presumption that there will be a proportionate compensatory cull based on the landscape impact of the proposal. The requirement for a compensatory cull would also depend on the size of the scheme, current domestic and non-domestic herbivore densities, condition of habitat and adjacent land management objectives.

The use of herbivore impact assessments for upland and woodland habitats along with other data, such as cull and count data, patterns of herbivore movements and utilisation and data on mortality and reproductive rates, should be used to set annual cull levels to deliver individual estate objectives, as well as the public benefits from deer management.

5.3.7 Deer Fencing

In the majority of the National Park, current deer density requires most woodland creation sites to be protected by deer fences. The majority of restock sites with soft conifer also require this protection until the trees are established. The need for deer fences increases the cost of woodland creation and establishing diverse productive conifers. In addition they have potential negative impacts; on species such as black grouse due to risk of fence strike, recreational access and landscape, as well as potential to affect deer movements and impact upon deer welfare. These negative impacts can be mitigated by, for example, compensatory culls, micro-siting of fences, fence marking, use of open ground between planting and fence lines to soften the transition, commitments to remove redundant fences or reduce to stock height when trees are established. There could be some short to medium negative impacts even with mitigation, however this may be acceptable due to the wider benefits from woodland creation or increased species diversification in restock sites. In the medium to long term, the sustainable management of deer must enable a significant reduction in the need for fencing in order to reduce the environmental and economic impact.

5.3.8 Agricultural Land Management

In the south and east of the National Park and on the floors of many of the straths and glens, agricultural management shapes the landscape and remains central to the identity of local communities. Through the delivery of Integrated Land Management advice for land management businesses by both National Park and private agricultural advisers, land managers will be able to better plan and deliver multiple environmental and social benefits, alongside economic return. The availability of better quality lower agricultural ground is limited and the maintenance of this resource is currently favoured, however there may be capacity for small-scale woodland planting which can benefit stock welfare by provision of shelter. The maintenance of grazing in these locations would often assist maintaining open views from the transport corridors.

Appropriately located woodland creation can also be an important form of diversification for a holding in terms of biodiversity as well as a future source of income and increasing agricultural productivity by improved stock shelter. The establishment of increased tree cover in riparian areas would help to manage the risk of diffuse pollution, bank erosion as well as maintaining and enhancing local landscapes. The extent of woodland creation potential on a single holding depends on the long-term management objectives of the holding, its location and associated sensitivities.

The use of managed grazing with appropriate stocking densities within established native woodland can lead to improvements in woodland conditions as well as improvements in stock welfare and productivity. Establishment of agroforestry or silvopastoral systems would be a key method of combining both agricultural production and objectives of this strategy.

5.3.9 Water and Soil Management

Within the National Park there are significant public and private water supplies, along with aquatic designated sites such as the Rivers Tay, Endrick and Teith Special Areas of Conservation (SACs) as well as iconic lochs such as Lochs Eck, Lomond and Lubnaig.

Careful planning and implementation of forestry operations is required to prevent detrimental impacts to the water quality. Any proposal should be designed so that it does not increase the risk of flooding – especially near vulnerable areas. Given the legacy of previous afforestation, assessment of historic drainage prior to harvesting is often required to prevent issues developing during the operations. During ground preparation for restocking these historic drainage systems should be modified to comply with current best practice. Maintenance and upgrading of existing forest roads are also opportunities to improve historic drainage systems to prevent future pollution events.

Woodland creation can help with reducing flood risk by runoff reduction and floodplain storage. However careful design, species choices and future management along with appropriate ground preparation is required to ensure these benefits are maximised. In order to deliver most benefit, these measures should be combined with other methods of flood mitigation, such as peatland restoration, woody debris dams, river bank restoration and river re-alignment.

Management plans for existing forests should consider delivering improvements to mitigate flood risk, especially in Potentially Vulnerable Areas (PVA). This could be achieved by establishment of native woodland, open ground riparian zones and appropriate management of instream woody debris to help manage flood risk as well as carefully considering the scale and timing of felling coupes.

When developing any woodland creation and management plans within PVAs, a flood officer from the relevant local authority should be consulted. This is to reduce the proposal's flood risk. Details regarding natural flood management opportunities and Potentially Vulnerable Areas can be found on SEPA's website.

Appropriate woodland management can contribute to improvement in slope and river bank stability, such as new native woodland creation to protect the A83 Rest and Be Thankful. Historic afforestation in some locations has led to challenges associated with slope stability and the difficulties in harvesting these sites e.g. Glen Croe and Ptarmigan Plantation, East Loch Lomond.

QUESTION 7

a) Do you agree with the strategy guidance on landscape integrating woodland and other land use?
b) Is there anything you would change about this strategy guidance?

5.4 Social and Rural Economic Development

A vibrant and sustainable rural economy is key to the delivery of this strategy and the promotion of woodland creation and management will lead to increased opportunities for employment. In some areas of the National Park this may require novel methods to provide this advice, such as shared forester schemes or co-operative woodland management. The forests and woodlands of the National Park contribute to the £1 billion Gross Value Added of Scotland's economy, employing the equivalent of 25,000 full-time jobs in sectors ranging from forestry and timber processing to forest recreation and tourism.

5.4.1 Skills

The maintenance and enhancement of forestry skills and contractors is important to deliver both forestry management and secondary processing of products. This resource should be able to deliver forestry management in the diverse woodland present in the National Park, though there may need to be a shift in focus to support smaller scale management options. Demonstration events and Modern Apprenticeships will be encouraged, and where possible supported, which enable sharing of best practice and skills to aid the delivery of the strategy's objectives. As well as a suitably skilled contractor base, owners of woodland must be able to obtain suitable advice to enable appropriate management to be progressed.

5.4.2 Timber Products and Biomass

The softwood production from the c.39,000 ha of productive conifer woodland in the National Park helps support the processing industry located throughout Scotland and Northern England, contributing to this nationally important industry. Timber from the National Park supplies mills producing construction-grade timber, particle board, fencing, paper and biomass.

Improvement in the quality of the timber harvest can be achieved through plant breeding to improve timber quality, as well as thinning to improve final crop quality.

Given the current extent of woodland cover, along with limited local markets for biomass production and end users, there is potential to increase the economic return of both final harvesting and thinning by developing local markets which would minimize transport costs.

Currently there are a number of small-scale wood chip producers and a 5MW combined heat and power plant in the north east of the National Park. The National Park Local Development Plan (LDP) supports biomass proposals where they are located in close proximity to the source of demand for the generated heat and power and use a sustainable source of fuel. There are also permitted development rights that allow farms to diversify into biomass energy generation or storing of biomass subject to a set of conditions and submitting prior notification to the planning authority. The production of firewood or other biomass products may require planning permission. More advice can be found in the National Park's *Local Development Plan* and from the development management team.

There is potential to develop markets for broadleaf timber within the National Park, e.g. firewood and sawn timber. Broadleaved sawn timber is currently a niche but high value market and local milling of timber can add significant value where there is insufficient volume to warrant haulage to a sawmill.

5.4.3 Forest Roads and Tracks

Forest roads and tracks are often required for forestry management, from establishment through to harvesting and extraction. UKFS highlights the sensitivities of forest roads in National Parks in General Forestry Practice Requirement no. 11: 'In Designated areas, for example National Parks, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.'

The Scottish Natural Heritage guidance titled *Constructed tracks in the Scottish Uplands* gives clear guidance as to how this infrastructure should be situated in order to prevent adverse impact on the environment, especially in relation to water courses and landscape impacts. Proposals affecting watercourses must comply with Controlled Activity Regulations (CAR) and advice can be found on SEPA's website. Careful planning of the construction, including design briefs, Landscape and Visual Impact Assessments, or Landscape Appraisals for simpler cases, use of non-standard construction methodologies in key locations and Landscape Clerk of Works involvement at key interventions will minimise landscape, visual and environmental impacts.

The early consideration of forest infrastructure requirements in woodland creation and restructuring design can enable these designs to contribute to the mitigation of associated impacts.

Forest roads and tracks along with other potentially conspicuous man-made structures can detract from the perception of wildness and need to be considered with great care. They should be avoided where possible in areas with high wild land attributes in order to protect the Special Landscape Qualities of the National Park.

Within the National Park, all forest roads, tracks, borrow pits and quarries require screening under The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017 by Scottish Forestry. In addition, as a planning authority the National Park Authority must be notified of any private way for forestry (or agricultural) purposes under The Town and Country Planning (General Permitted Development) (Scotland) Amendment (No. 2) Order 2014 (SSI 2014 No. 300) and prior approval may be required. Planning permission will also be required for private ways where any part of the development would be within 25 metres of a road.

Appendix 7 explains how these two regulatory systems interact and the approach agreed between the National Park Authority and Scottish Forestry to ensure appropriate regulation occurs while providing an efficient process for the applicant.

5.4.4 Haulage/Timber Transport

In order to manage timber haulage on the public road network, timber transport groups have been set up with key stakeholders to decide upon and implement agreements in specific locations to minimise the impact of these operations on other road users and road infrastructure. Such agreements are in place in locations such as Balquidder and East Loch Lomond. Investment in infrastructure such as in-forest haulage routes to bypass weaker road networks have been put in place in Strathard.

There are a number of locations where historic afforestation has left a legacy of mature conifer forest which is challenging to extract due to being isolated from the public highway by a railway line or where the only access is via a weak public road.

The National Park Authority wishes to work with landowners, forestry companies and timber transport groups to develop and implement solutions to these constraints to enable the extraction of the currently isolated timber resource.

5.4.5 Rural Development

The current *Local Development Plan* details policies to guide and determine planning applications. In some cases, these may impact on trees and woodlands. These policies can deliver protection and enhancement of existing trees and woodlands. Any compensatory planting schemes must deliver the multiple benefits expected from any other woodland creation scheme as detailed in this strategy. In some areas of the National Park, future rural development frameworks may add detail to the rural development and natural capital requirements for a specific area.

Woodland creation and management proposals have the potential to deliver tourism and visitor services which are important local priorities identified in the National Park Partnership Plan. Consideration of this potential should be included in proposals where relevant. Depending on the type of service proposed, planning permission may be required and advice can be found in the *Local Development Plan* and *Visitor Experience Supplementary Guidance*.

5.4.6 Community Empowerment and Social Development

Community management or ownership of woodland can help promote local engagement and understanding as to the opportunities associated with woodland, including the recreational, environmental and economic benefits woodlands can deliver.

Communities would be encouraged to engage with the consultation process associated with woodland proposals and highlight to relevant land managers the opportunities to help deliver community action plan objectives. There will be support for community-based, small scale tree planting where it would deliver this strategy's objectives.

Where communities wish to consider forestry acquisitions, support and guidance is available from the Scottish Forestry, the National Park Authority and Community Woodland Association. These acquisitions have the potential to both increase local skills and develop into sustainable, social enterprises.

5.4.7 Consultation and Stakeholder Engagement

The importance of consultations in relation to forestry proposals is well established and is incorporated in both forest plan and woodland creation proposals. The consultations could be used to develop productive long-term relations between the land manger and local stakeholders.

There can be key local stakeholders who may be overlooked and it is encouraged that circulation of proposed consultees to Scottish Forestry and the National Park Authority prior to the consultation process starting would help prevent omissions and enable appropriate and proportionate consultation. It would be expected that Community Councils, Deer Management Groups and the Fisheries Trust are included where relevant.

It is also important that stakeholders engage early with the consultation process to ensure all potential issues are highlighted and can be included in the assessment of a specific proposal.

As well as consultation on a case-by-case basis, there may be opportunities to develop catchment-scale stakeholder engagement forums to discuss issues in a proactive manner such as Land Use Partnerships.

In terms of forest operations, consideration should be given to informing relevant local stakeholders when operations which could be locally sensitive such as quarry blasting, felling or timber haulage will occur.

QUESTION 8

a) Do you agree with the strategy guidance on social and rural economic development?
b) Is there anything you would change about this strategy guidance?

5.5 Woodlands and People

Establishing and managing woodlands using modern forestry design and a well-considered, holistic land management approach can bring multiple benefits including providing safe public access, maximising public health through outdoor recreation and bringing about positive economic change.

5.5.1 Responsible Access

The Land Reform (Scotland) Act 2003 allows for the right of responsible access, meaning that any forest design and management must fully consider the right of responsible access for walkers, horse riders, cyclists and those with mobility aids. Access rights apply to most areas of all woodlands, so it is vital that woodland managers understand where the public wish to access path networks and ensure there is appropriate gate provision. Clear signage and interpretation should be in place that provides for the needs of the general public while reducing the likelihood of conflict between public access and land management operations. This allows land managers and the public to fulfil their duties around responsible behaviour and land management.

Inevitably, forestry and deer management operations will have an impact on safe public access at times and it is essential that all signage is correct, positive, time limited and follows national standards to ensure compliance from the public. We would encourage the use of public access management plans to inform forest management and balance the needs of recreational visitors, timber producers, conservation, and sporting interests.

The right to responsible access allows the public to enjoy the Park's woodlands and develop an appreciation for the value that habitat networks and well-managed woodlands bring to Scotland. The right of responsible access to forests and woodlands is essential in maintaining existing levels of recreational visits at a national level.

5.5.2 Health and Wellbeing

Over recent years the benefits of spending time in well-managed woodland to physical and mental health have been better understood and accepted. Various national and regional policy documents reflect this understanding and there is a responsibility on the National Park Authority and land managers to ensure that the health benefits of previously under-used woodland access are maximised. This is particularly true in woodlands in and around towns and villages which offer easy access to a range of enjoyable activities.

The Scottish Government's Active Scotland Delivery Plan is clear that all partners are expected to ensure that Scotland's natural environment provides opportunities for increased levels of physical activity for everyone. Initiatives which can achieve this goal include the creation of attractive, safe, and well-maintained greenspace and woodlands within easy walking distance of every home in Central Scotland. This aspiration is also shared across the National Park area.

The next iteration of the current National Park Authority Outdoor Recreation Plan will further develop the policy thinking around health in the outdoors and it should be referenced to ensure all opportunities for wider health benefits are being considered. For example, well-designed short loop paths which follow national standards or the protection of priority woodlands adjacent to communities for long-term recreational enjoyment. Initiatives such as 'Our Natural Health Service' and Green Health Partnerships led by Scottish National Heritage should also be considered.

QUESTION 9

a) Do you agree with the strategy guidance on woodlands and people?
b) Is there anything you would change about this strategy guidance?

6 Monitoring

Monitoring of the of The Trees and Woodlands Strategy is essential for ensuring that the effectiveness of the strategy is measured so that it can be refined and updated over time. To ensure efficient use of resources and integration with other plans and programmes, this requirement will be met by gathering information from the existing monitoring protocols and processes:

- Loch Lomond & The Trossachs National Park Partnership Plan
- Wild Park
- National assessments of forest extent and composition

7 References

- **Plantlife**
  - Important Plant Areas
- **Flooding and Natural Flood Management**
  - SEPA Flood Map
  - Natural Flood Management Network Handbook
  - Marine Scotland Water Temperature Data
- **National Park Data**
  - Local Development Plan
  - National Park Partnership Plan 2018 - 2023
  - Core Paths Plan
  - Carver Wildness Study
  -
- **SNH web links**
  - Wildlife and Countryside Act 1981
  - Habitats Regulations 1994 (European Protected Species)

- Protection of Badgers Act 1992
- Scottish Biodiversity List
- Habitat Definitions
- NBN Atlas Scotland
- Integrated Habitat Networks

- **Scottish Forestry Guidance**
  - Scotland's Forestry Strategy 2019 - 29
  - Red Squirrel strongholds and grey control area
  - Woodland Creation guidance
  - Deciding future management options for afforested deep peatland Practice Guide (2015)
  - Expanding woodland in Special Protection Area for golden eagles – Practice Note - FCPN 103
  - Managing woodland access and operations in Scotland – Practice Note - FCPN 104
  - Ground Water dependent terrestrial ecosystems
  - Managing invasive and non-native forestry species
  - Flood management and Forestry
  - Forestry Commission Scotland sustainable development
  - Ecological Site Classification Version 4
  - FCS Practice Guide *Achieving diversity in Scotland's forest landscapes*
  - FCS Practice Guide *Conserving and managing trees and woodlands in Scotland's designed landscapes*
  - FCS Guidance *The creation of small woodlands on farms*
  - FCS Guidance *Management of ancient wood pasture*
  - FCS Practice Guide *Design techniques for forest management planning*

- **Scottish Government**
  - Community Right To Buy
  - Asset Transfer
  - Engaging Communities in Decisions relating to Land
  - SEWeb

8 Appendices

Appendix 1
Spatial analysis for native woodland creation opportunity

Appendix 2

Landscape Capacity Study Summaries

Appendix 3
Landscape Capacity Study Summary and Guideline for Landscape Zones and Sub Areas

Appendix 4
Landscape Toolkit

Appendix 5
Designated Site assessment in relation to sensitivity to woodland creation

Appendix 6
Designed Landscape assessment in relation to sensitivity to woodland creation

Appendix 7
Way of Working between Scottish Forestry and Loch Lomond and Trossachs National Park Authority on Forest Road/Private Way Regulations