North Highland Forest District

Ben Wyvis & Strathpeffer Woodlands Land Management Plan
2017 – 2027

Plan Reference No:030/516/416
Plan Approval Date:_____
Plan Expiry Date:_____

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North Highland FD Monument Management Plan

1.0 Setting and context

The management of Forestry Commission Scotland's National Forest Estate is guided by the National Strategic Directions (2013), which identifies six aspirations that will influence integrated land management within our boundaries:

- **Healthy** – achieving good environmental and silvicultural condition in a changing climate.
- **Productive** – providing sustainable economic benefits from the land.

- **Treasured** – as a multi-purpose resource that sustains livelihoods, improves quality of life, and offers involvement and enjoyment.
- **Accessible** – local woodlands and national treasures that are well promoted, welcoming and open for all.
- **Cared For** – working with nature and respecting landscapes, natural and cultural heritage.
- **Good Value** – exemplary, effective and efficient delivery of public benefits.

Drawing on these key aspirations North Highland Forest District (NHFD) have drafted a three year Strategic Plan (2014 – 2017). The plan establishes links with the national priorities underpinning these aspirations, detailing local priorities upon which NHFD plans will be founded. The NHFD Strategic Plan ensures that land management activities complement and enhance the local economic, social and ecological individuality of each LMP area. This plan aims to provide local context to the national aspirations and key priorities by detailing local priorities that will support us in achieving sustainable integrated land management across all areas of the National Forest Estate.

Appendix 1 – The Forest Planning Framework in Scotland gives context to the purpose and scope of this Land Management Plan. In compliance with UKFS this is a strategic indicative plan intended to state the objectives of management and how sustainable forest management will be achieved by signposting the relevant guidance and best practice and spatially identifying management aspirations.

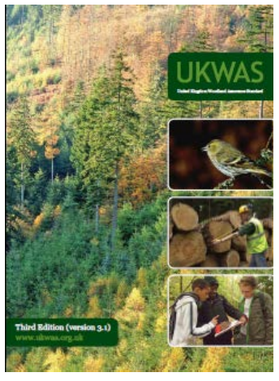
This plan also provides a means to communicate our proposals to the neighbouring communities and stakeholders and serves as an agreed statement of intent against which implementation can be checked and monitored (see **Section 4.4 - FDP Brief** for details of the monitoring proposed).

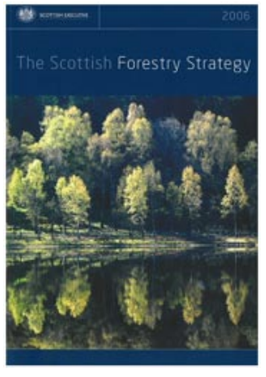
Appendix 1 indicates the levels of operational plans that sit below, and are informed by this LMP. In compliance with UKFS the operational plans detail specific implementation detail including:

- Potential hazards to workers and forest users
- Operational detail specific to machine use
- Safeguards and mitigation measures to protect the immediate site and, by association, the wider forest
- Detail of post operations planning including the treatment of any waste materials identified.
- Contingency planning

Stakeholders requiring this level of information should contact the North Highland Forest District Operations Team following approval of this plan.

Appendix 2 – Key Policies and Guidance details the external policy drivers for the proposals in this plan. Current industry and FC guidance will be complied with during any operations associated with this plan, including any subsequent guidance revisions published during the plan's ten year approval period.





1.1 History of Plan

The production of Ben Wyvis & Strathpeffer Woodlands Land Management Plan is the full ten year revision of the following Forest Design Plans (FDPs):

- Torrachilty 030/517/225 (extended until 31.01.2018)
- Strathpeffer Woodlands 030/517/270 (expires 03.02.2018)
- Achilty 030/517/200 (expires 26.02.2019)
- Strathgarve 030/516/244 (expires 31.10.2021)
- Longart & Garbat 030/516/061 (expires 03.12.2023)

Previously the plans had each covered their individual areas however to better address issues of landscape design, water catchment management and biodiversity conservation NHFD have merged the plan areas and the number adopted for the full area is: **030/516/416**. The term 'Land Management Plan' better reflects the wider scope of the document in dealing not only with forestry, but with designated site planning, open ground management, scheduled ancient monument planning and general integrated land management issues. The document's key function remains to seek approval for felling and restocking over the next ten years.

The plan area is situated within the central part of Ross-shire, between Contin, Dingwall, Strathpeffer and Garve **(see Map 1 Location & Context).**

The Land Management Plan area covers c. 9580 ha, with significant areas of open hill, archaeological features (both scheduled and unscheduled) and sensitive watercourses; the area offers potential for hydro development and Allt Dearg proposal is currently at the pre-application stage.

57% of the area is productive forest, 9% is currently felled in fallow, 26% is open ground, about 7% is under agricultural tenancy, less than 1% open water, and land under other management is under 1%.

Sitka spruce (*Picea sithensis – SS)* is the predominant conifer in the productive high forest at almost 36% of the stocked area, Scots pine *(Pinus silvestris – SP*) has the second largest share at 22.5%, followed by Lodgepole pine (*Pinus contorta – LP*) which covers nearly 20% of the afforested area.Hybrid larch *(Larix x eurolepsis – HL)*, European larch (*Larix decidua – EL*), and Japanese larch (*Larix kaempferi – JL)* cover about 3.5%, while other conifer species, such as Norway spruce (*Picea abies – NS*), Douglas fir (*Pseudotsuga menziensi –DF),* Grand fir (*Abies grandis – GF*) ,Mountain pine (*Pinus uncinata - MOP*), Western Hemlock (*Tsuga hererophylla - WH*) and Serbian spruce (*Picea omorica*) are planted in varied mixtures across the LMP area, and together they cover 2.7% of the stocked area.

Broadleaf species are well-represented within the LMP area, at 15.7%, thanks to significant areas of native woodland on PAWS. Downy birch (*Betula pubescens*) and Silver birch *(Betula pendula)* are main species, with Oak *(Quercus robur & Quercus patrea*) Common Adler (*Alnus glutinosa*), Ash (*Fraxinus excelsior*), Aspen *(Populus tremula),* Common beech (*Fagus silvatica*), Common hazel (*Corylus avellana*), European holly (*Ilex aquifolium*), Common hawthorn (*Crataegus monogyna*), Rowan (*Sorbus aucuparia*), willows (*Salix* species) also present.

Garbat forest block, with Ben Wyvis in the background. Photo A.Baranska, NHFD

2.0 Analysis of previous plans

A scoping meeting was held on 13th of April 2016 involving key Forest District staff, to analyse the aims of the previous plan and to agree objectives for the FDP brief. More detail of this meeting can be found in **Appendix IV – Internal Consultation Record**. The key objectives for each plan area are detailed in the table below:

Forest/FDP	Torrachilty	Strathpeffer Woodlands	Achilty	Strathgarve	Longart & Garbat
Objective	030/517/225	030/517/270	030/517/200	030/516/244	030/516/061
Climate change	Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (M). Economic production of timber within all environmental constraints and guidelines (H). Maintain soil integrity(L).	Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (L). Economic production of timber within all environmental constraints and guidelines (M). Maintain soil integrity (M).	Change to site native species, particularly Scots pine. Increase the area of native broadleaves. Restoration of Ancient Oak/Birch woodland of semi-natural origin. Increase areas of Low Impact Silvicultural System. Substantial quantities of Birch will become available from Achilty Woodlands to supply the growing wood-fuel market. A sustainable supply of timber will be produced by continued silvicultural thinning, alternative to clearfell management (LISS) and clearfelling and replanting in Achilty Woodlands. Timber-road miles will be held to minimum due to proximity of markets.	The FD will concentrate productive conifer on appropriate soils, using species that will be resistant to pathogens. As demand increases for local firewood the FD has adopted robust systems to ensure that supply can be met without compromising other FDP objectives. We will continue to work closely with SEPA and Conon Fisheries Board to ensure that appropriate riparian woodland is established to protect and enhance riparian habitat and improve its resilience to changing weather patterns. We will maintain or improve the current status of the waterbodies within the plan area.	The FD will concentrate productive conifer and broadleaves on appropriate soils, using species that will be resistant to pathogens. By expanding the area of riparian and treeline native woodlands we will contribute to habitat connectivity and increased biodiversity. We will continue to enhance riparian woodland by the planting of appropriate species. We will ensure that we do not contribute to the decline of any water body within or to be affected by the FDP area. We will seek to build a productive working relationship eth the Conon Fisheries Board and SEPA to identify vulnerable areas and strengthen environmental resilience. Material from lower grade crops on the upper margins of the FDP area will be sold to biomass costumers. Small xc=scale firewood sales will continue to form a part of site completion market. North Highland FD currently comprises Lot 5 of the FCS national agreement to allow developers to investigate the potential for generating wind energy on the National Forest Estate(…). One small scale hydro scheme is proposed within the FDP area.

Timber	Economic production of timber within all environmental constraints and guidelines (H). Maintain soil integrity (L). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (M).	Economic production of timber within all environmental constraints and guidelines (M). Maintain soil integrity (M). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (L).	Change to site native species, particularly Scots pine. Increase the area of native broadleaves. Restoration of Ancient Oak/Birch woodland of semi-natural origin. Increase areas of Low Impact Silvicultural System. Substantial quantities of Birch will become available from Achilty Woodlands to supply the growing wood-fuel market. A sustainable supply of timber will be produced by continued silvicultural thinning, alternative to clearfell management (ATC) and clearfelling and replanting in Achilty Woodlands. Achilty Woodlands will produce slow growing Scots pine. Continued silvicultural thinning will maintain the quality of timber.	UKWAS compliance will be maintained by employing sound management principles outlined in the Forest Design Plan. Production will be managed using the FD workplan system and coordinated by the FD programme manager to ensure programmes match forecast. In the absence of Lodgepole pine, nutritional mixtures will include Sitka spruce in mixture with Japanese larch, Macedonian pine and other species appropriate to site and soils. On less challenging soils alternative species will be used to provide increased yields. We will use native species appropriate to site on PAWS to achieve commercial density planting. Where soils and exposure allow we will continue to maximise production and quality. We will adopt the use of pathogen resistant species to nurse productive crops to ensure that fertiliser use is reduced.	UKWAS compliance will be maintained by employing sound management principles outlined in the Forest Design Plan. Production will be managed using the FD workplan system and coordinated by the FD programme manager to ensure programmes match forecast. In the absence of Lodgepole pine, nutritional mixtures will include Sitka spruce in mixture with Japanese larch, Macedonian pine and other species appropriate to site and soils. Where possible ALP will be utilised. Restocking will be undertaken in line with the Restock Prescriptions contained in the appendix of this plan. Where soils and exposure allow we will continue to maximise production and quality. We will seek to expand our thinning programme on steep ground, identifying resources through business planning systems. We will adopt the use of pathogen resistant species to nurse productive crops to ensure that fertiliser use is reduced. Where heather growth is a significant factor in low growth rates we will treat it with herbicides as an alternative to fertiliser.

Business development	Involve the community to satisfy their aspirations. Work with and for the community for a mutually satisfactory design (M).	Involve the community to satisfy their aspirations. Work with and for the community for a mutually satisfactory design (H).	Timber-road miles will be held to minimum due to proximity of markets. Achilty Woodlands will provide opportunity for training in the management of ATC. They will also be a location for Oak/Birch habitat restoration and management.	None identified.	We will continue to work with the local community to identify suitable projects and funding opportunities.
Community development	Involve the community to satisfy their aspirations. Work with and for the community for a mutually satisfactory design (M).	Involve the community to satisfy their aspirations. Work with and for the community for a mutually satisfactory design (H).	Loch Achilty and the surrounding woodland are used for outdoor activities. Community engagement exercises have been carried out in preparation of the Achilty Woodlands PDP, improving staff skills.	We will work with the Community Council to improve communication locally and will continue to work with local voluntary groups to complete environment projects.	We will continue to work with the local community to identify suitable projects and funding opportunities
Access and Health	Provide a high quality visitor experience (M).	Provide a high quality visitor experience (H).	Loch Achilty and the surrounding woodland are used for outdoor activities. Maintenance of the car park and picnic site at Loch Achilty. Provision of pedestrian access. Provision of paths, tracks and the picnic site and car park.	We will work with the Community Council to improve communication locally and will continue to work with local voluntary groups to complete environment projects	We will ensure that the status of the access infrastructure is protected during all operations and is enhanced by the forest planning process.
Environmental quality	Expand areas of high biological diversity whilst protecting existing species and habitats (M). Safeguard water supplies, specific habitats and natural watercourses (M). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (M).	Expand areas of outstanding biological diversity whilst protecting and enhancing existing species and habitats (M). Safeguard water supplies, specific habitats and natural watercourses (M). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (L).	Protection of the Scheduled Ancient Monument (SAM) in the woodlands. Change to site native species, particularly Scots pine. Increase the area of native broadleaves. Restoration of Ancient Oak/Birch woodland of semi-natural origin. Increase areas of Low Impact Silvicultural System. Expansion of native woodland and retention of Scots pine. Limiting the regeneration of large-seeded broadleaves to areas in Achilty Oakwoods.	The operations proposed will be carried out with water quality protection very much to the fore. Both SEPA and the Conon and District Fisheries Board have been very helpful consultees during the scoping phase of FDP revision. It is acknowledged that landscape improvement should drive the design of management coupes in the Strathgarve Forest to the east of Garve Village. We will work with both Historic Scotland and the FCS archaeologist to deliver a programme of prioritised protection and conservation work. There are a number	These forests form a fundamental component of the Conon Catchment, and all operations proposed will be carried out with water quality protection very much to the fore. Both SEPA and the Conon and District Fisheries Board have been very helpful consultees during the scoping phase of FDP revision. The workplan process will highlight watercourses and waterbodies relevant to operations. We will design management coupes - working closely with the FCS Landscape Architect – to enhance

	Maintain soil integrity (L). Creation of forest which blends with and enhances the landscape (H). Safeguard all archaeological sites and enhance their value to the public (L).	Maintain soil integrity (M). Creation of forest which blends with and enhances the landscape (M). Safeguard all archaeological sites and enhance their value to the public (H).		of key sites including the Strathgarve drove road and Little Garve Bridge. Operations will ensure that new coupes are surveyed prior to felling to ensure any undiscovered heritage interests are protected from unnecessary damage.	the landscape with particular reference to the areas visible from the main tourist routes. This FDP has abundant archaeology, both scheduled and unscheduled. We will work with both Historic Scotland and the FCS archaeologist to deliver a programme of prioritised protection and conservation work. Operations will ensure that new coupes are surveyed prior to felling to ensure any undiscovered heritage interests are protected from unnecessary damage. Where crop stability allows we will retain some conifer stands to help diversify the age structure of the forest. This will be concentrated in the main glen of the forest adjacent to Blackwater.
Biodiversity	Expand areas of high biological diversity whilst protecting existing species and habitats (M). Safeguard water supplies, specific habitats and natural watercourses (M). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (M).	Expand areas of outstanding biological diversity whilst protecting and enhancing existing species and habitats (M). Safeguard water supplies, specific habitats and natural watercourses (M). Manage deer population density in the forest to that consistent with naturally regenerating trees and enhancement of habitats (L). Maintain soil integrity (M).	Expansion of native woodland and retention of Scots pine. Limiting the regeneration of large-seeded broadleaves to areas in Achilty Oakwoods. Change to site native species, particularly Scots pine. Increase the area of native broadleaves. Restoration of Ancient Oak/Birch woodland of semi-natural origin. Increase areas of Low Impact Silvicultural System.	In the Strathgarve Forest we will continue to commit a significant area of productive forest to alternative silvicultural systems. Elsewhere across the plan area we will utilise more diverse range of species and continue to promote the expansion of native woodland to enhance biodiversity. We will enhance riparian woodland throughout the forests and will expand native woodland at South Hill, Lochluichart. We will continue our active involvement with local schools and the Blackwater Wildlife Group to deliver environmental projects.	Red squirrel and black grouse are two important species known to be present in the forest. Full survey of the PAWS within the FDP area will inform the work programme, working towards full restoration. Where soils allow, we will restock PAWS with productive broadleaf species allowing for the native flora to recolonise areas currently under exotic confer plantation. The forest is at a stage vulnerable to herbivore damage as large areas are restocked. Although we believe that we can work toward a position where internal fencing is redundant and some external fencing becomes unnecessary, currently all external fences will be maintained. The Garbat march fence will be reinstated to protect young crops against unpredictable, out of season

					incursion from red deer herds. This will allow us to achieve our objectives without the compromising the socio-economic objectives of neighbouring estates. We will utilise a more diverse range of species and continue to promote the expansion of native woodland to enhance biodiversity. This will include supplementary species planting to expand riparian woodland. On PAWS sites we will use no less than 90% native species, concentrating on productive broadleaf species where soils allow.

** Key for rating of objectives: H – High Priority; M – Medium Priority; L – Low Priority*

Original Plan Objective	Did the Implementation meet the objective?	Does the objective remain desirable or achievable?
Climate change	All forest blocks have suffered from extensive wind damage and some of them from DNB infection. Significant areas of infected and damaged conifer crops were clearfelled during the previous plan. Restocking proposal focused on concentrating productive conifers on most productive sites, while increasing areas of riparian and native woodland element.	The objective remains important for all forest blocks covered by Ben Wyvis & Strathpeffer Woodlands LMP. Clearance of windblow will continue (as the catastrophic storms from January 2015 and 2016 have inflicted further damage). Riparian planting is still high priority due to the importance of water quality protection within the LMP area. Proposed hydro-scheme in Torrachilty, if approved, will contribute to renewable energy production targets. It remains an important objective.
Timber production	Big scale of wind damage and DNB infection has resulted in big scale felling; many coupes had been felled earlier than proposed in original plans to allow for maximum timber recovery. In addition, significant areas were felled in Torrachilty to improve the safety of the railway line (resilience felling) Restocking aimed to concentrate productive conifers on most suitable sites, increasing areas of riparian and native woodland.	Timber production remains important in all forest block covered by the Plan. We will continue to concentrate productive conifers on most fertile sites. By using watercourses, forest roads, existing and designed open ground as natural coupe boundaries, we will create more wind resilient forests, reducing the risk of catastrophic wind damage in the next rotation. It remains an important objective.
Business development	Strathpeffer and Contin are the biggest population centres within the Ben Wyvis & Strathpeffer Woodlands LMP area, with other villages and settlement spread across almost entire area, and another big population centre, Dingwall, not far away. The area is a popular visitor destination and visitor numbers peak in the summer. Torrachilty (Contin) cycle trails proved to be very popular and are attracting significant number of cyclist. The area holds 2 major sporting events annually: Strathpeffer – winter condition 24 hour mountain bicycle race; and Snowman Rally – both events bringing both participants and spectators to the area.	Development of local businesses within the Ben Wyvis & Strathpeffer Woodlands LMP area would be welcomed. The attractiveness of the area (located on the popular route to West Coast and now part of North 500 route) draws significant number of visitors, supporting wide range of tourist-related businesses. It remains a valid objective.
Community development	During the previous plan period NHFD has cooperated with local groups and community councils , such as Blackwater Wildlife Group, Cromarty Fishery Board, Wyvis Natural Play Area, Highland Biological Recording Group, and Garve and District, Contin, and Strathpeffer Community Councils, to deliver local projects.	Still an important objective. We will work with Wyvis Natural Play Area and other community groups to deliver further projects to meet aspirations of local people. Limited founding available might put more pressure on securing funds from other sources (e.g. grants), therefore the communities will need to take more proactive role in any new projects. All FES forests are open to members of the public under the Scottish Outdoor Access Code 2003. Given the financial situation, the District will focus on locations used regularly by both local residents and the visitors to the wider area. NHFD will continue to work with local communities, which actively engaged in projects aiming at making the forest more accessible and attractive for visitors. It remains a valid objective.
Environmental quality	Conifers planted right up to the banks of watercourses were in many places felled. New riparian woodland was created in previously open (or planted with conifers) riparian corridors. Operations adhered to Forest and Water Guidelines and other relevant regulations to protect water environment is sensitive and /or important for salmon (Blackwater and Conon Rivers and their tributaries). Extensive areas of conifer crops damaged by DNB infection and /or windblow were cleared during the previous plan period, leading to big, unsightly clearfelled areas, visible from the public roads. Archaeological features are being incorporated into the open ground network.	A key objective of the Ben Wyvis & Strathpeffer Woodlands LMP. We will continue to improve the environment by expanding the native species element of the forest and creating buffers of riparian woodland between the watercourses and productive forest. All future operations will adhere to regulations valid at the time of operations and local agreements with SEPA. The big clerfelled sites give a scope for better coupe design for the next rotation, allowing for more resilient, diverse and visually attractive forest. The heritage sites will be maintained and protected, and further surveys will be carried our prior to operations. It remains an important objective.

Biodiversity	Significant effort was made during the previous Plan period to protect and enhance water quality in all blocks covered by the Plan. Conifers planted right up to the banks of watercourses were felled, and the riparian corridors either were planted, or are to be planted with native broadleaves, to create riparian woodland. NHFD recognises the impact forest operations might have on sensitive catchments, especially those with salmon interests. All operations during the previous plan period were carried out responsively and in line with relevant water protection regulations and local agreement with SEPA and local fishery boards.	A key objective of the Plan. We will continue our efforts to protect the watercourses during the forest operations and to enhance the aquatic environment by creating riparian woodland. The native species element of all blocks covered by Ben Wyvis & Strathpeffer Woodlands LMP will expand, creating better habitat links. The PAWS will be restored within appropriate time scale; we will seek opportunities to maximise productivity by restocking with native species at commercial densities (subject to site assessment). It remains an important objective.

3.0 Background information

3.1 Physical site factors

3.1.1 Geology, soils and landform

Ben Wyvis & Strathpeffer Woodlands LMP is located in geologically interesting area. The central part of the LMP area is occupied by schist or Dalradian series, consisting of quartzites, mica-schist, garnetiferous mica-schist and gneisses. To the east these are overlaid by the old red sandstone.

The soils are dominated by typical podzols, typical peaty surface-water gleys and bogs, with smaller areas of ironpan soils and upland brown earths. Soil fertility ranges from medium fertility and good nitrogen availability, to very poor, where deep peat is predominant.

Implications of the underlying lithology on the establishment of second rotation crops are referred to further in section 3.3.2 Site Capability.

The silvicultural prescriptions and assumptions made in this plan are largely specific to soil types referred to in the Forestry Commission soils classification system described in The Identification of Soils for Forest Management (Kennedy, 2002). This plan area has a wide range of soil types, which fall mainly into the following categories:

Brown earth	FC Group 1
Podzols	FC Group 3
Ironpan soils	FC Group 4
Peaty surface water gleys	FC Group 6
Typical surface-water gley	FC Group 7
Juncus bog	FC Group 8
Molinia bog	FC Group 9
Unflushed blanket bogs	FC Group 11
Unflushed blanket bogs	FC Group 11
Rankers	FC Group 13
Erroded bogs	FC Group 14
Valley complex	

Detailed, reliable soil maps are currently being prepared to assist the Operations team in delivering the proposals detailed in this plan. James Hutton Institute soils data to 250k scale is available, but does not offer sufficient detail to predict the soils type for each coupe. The extent and nature of the soils can be identified where open ground exists, however as Pyatt & Brown 1982 state;

"Due to profound changes in the vegetation which take place after afforestation, which in many places involves it's complete suppression by
the tree canopy, it is implicit that identification of site types cannot be…precise in the established forest".

Ben Wyvis and Torrachilty forest from Sron a Chomair. Photo: A.Baranska (NHFD)

The implication for this plan is that exact species boundaries will only be defined once clearfell has allowed Forest Management staff to accurately identify soil types on a coupe by coupe basis. The correct prescription can then be matched appropriately to site type, ensuring best silvicultural practice.

3.1.2 Water

All operations on National Forest Estate (NFE) will adhere to the UK Forestry Standard (UKFS), Forest and Water Guidelines (2011), and the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by Scottish Environment Protection Agency (SEPA).

SEPA is implementing the Water Framework Directive (WFD) in Scotland which is a legal framework for the protection, improvement and sustainable use of all water bodies in the environment across Europe. All water bodies across Scotland have been assessed for ecological and chemical status and catchment plans have been drawn up to ensure water bodies are brought up to an acceptable level. NHFD lies entirely within the Scotland river basin district, and is covered by the second River Basin Management Plan (2015 – 2027).

The two aims of the Water Framework Directive (WFD) are to improve water bodies to good ecological status/potential by 2015 (or later if this is not feasible) and to prevent any deterioration in ecological status/potential. These objectives apply to baseline and non-baseline water bodies. Under WFD, as well as reaching good ecological status/potential, designated protected areas must meet the standards for which they are designated and have the same objective of no deterioration. Two biggest challenges identified in the second river basin management plan are diffuse pollution and modifications to the physical conditions of water bodies. Operations carried out on the National Forest Estate in North Highland Forest District adhere to the best practice detailed in the Forest and Water Guidelines (FCS, 2011), the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by SEPA to support the required ecological protection and improvement. North Highland Forest District are aware that it is therefore important that the

new proposed planting and forest restructuring, felling etc., including the proposed road construction, does not lead to any deterioration of the water bodies or water dependant areas within the forest plan area and any of the neighbouring water bodies. Appropriate establishment of riparian woodland to maintain buffer strips between commercial conifer plantations and water bodies, is a key aim of this plan. The forest blocks covered by the Ben Wyvis & Strathpeffer Woodlands LMP lie within River Glass, River Conon and Cromarty Coastal catchments. None of these catchments suffer from acidification, however there is number of water bodies which are currently not at good or better ecological status and have the potential to be affected by forest operations – please see the table below for details.

Water body ID	Water body Name	Current classification
20146	River Skitheach	**Moderate** (no change since previous classification); due to water flows and levels
20147	River Peffery	**Moderate** (no change since previous classification); due to water quality and physical condition
20148	Ussie Burn (sea to Loch Ussie)	**Poor** (no change since previous classification); due to barriers to fish migration
20149	Ussie Burn (Loch Ussie to source)	**Poor** (no change since previous classification); due to barriers to fish migration
23392	Black Water (Conon Confluence to Loch Garve)	**Moderate** (no change since previous classification)
20183	Rogie Burn	**Poor** (no change since previous classification), due to water quality
20166	River Conon (Orrin confluence to Loch Achonachie)	**Moderate** (no change since previous classification); due to physical condition
20167	River Conon (Loch Achonachie to Loch Luichart)	**Moderate** (no change since previous classification); due to physical condition

Black Water in Strathgarve. Photo: A.Baranska, NHFD

The water bodies noted on the SEPA RBMP website and minor watercourses identified by NHFD as significant are detailed in **Map 2 – Key Features Forests and Water**. The specific measures proposed to improve the status of the water bodies noted in the table opposite is contained in the **Analysis & Concept Table** of this plan.

Detail of the proposed riparian woodland that will provide a buffer on all identified watercourses (average 30 metres from each bank) is included in the **LMP Proposals** section of this plan and in **Section 6.4 – Management Prescriptions** and **Section 6.5 – Native Woodland Prescriptions (NVC).**

The watercourses in this plan area have suffered from inappropriate forestry practices in the past leading to pressure from plantations edges too close to watercourses, intensive cultivation and poorly implemented drainage. Given the distribution of commercial forestry within the above mentioned catchments, NHFD acknowledge that appropriate controls on forest operations are vital to improve the current position.

It is recognised that invasive non-native species (INNS) can have impacts on the condition of areas protected under the Habitats Directive for species or habitats important at a European scale and those nationally important for biodiversity. They are recognised as a significant risk to the water environment in the (2nd) River Basin Management Plan for the Scotland River Basin District (2015 – 2027) and in the North Highland area management plan.

Given the possibility of contamination from riparian INNS from upstream populations, any control efforts will always be undertaken with this in mind, and it is proposed that links will continue to be made with existing projects such as the biosecurity plans which are being produced by the Rivers and Fisheries Trusts Scotland**.** Invasive plants (Himalayan knotweed) have been recorded in Rogie, on the land we're hoping to acquire. As soon as the transaction is completed we will take appropriate action to eradicate the INNS. There are no other records of INNS on the National Forest Estate within the plan area, however routine survey work will continue throughout the plan period and any occurrence dealt with complying fully with best practice guidance. Work programmes are currently being delivered to reduce rhododendron (*Rhododendron ponticum*) and will continue during the coming plan period. American mink (*Neovison vison*) will continue to be the target of rigorous control.

Water crossings for proposed roads infrastructure will be planned and delivered in accordance with best practice and within the structure of the Controlled Activities Regulations (CAR). It is acknowledged that the storage of oil will be carried out in accordance with the Water Environment (Oil Storage) (Scotland) Regulations 2006.

As a minimum, The Water Environment (Diffuse Pollution) (Scotland) Regulations 2008 General Binding Rules will be followed. These rules cover the storage and application of fertiliser, cultivation of land, discharge of site water, construction of roads and use of pesticides. These are considered operational planning issues and as such mitigation and method are not detailed in this Land Management Plan, however a robust system of recorded work planning and pre-commencement planning is in place and is available for view as required by stakeholders. Following site meetings with SEPA staff and agreement on consultation protocols reached in 2013, SEPA will nominate coupes which they feel are 'sensitive' during the standstill review of the draft plan, prior to its submission to Highlands and Islands Conservancy. The workplans for these coupes will be annotated with a consultation request and during site planning, operations staff will contact SEPA staff and accommodate any specific operational requirements agreed for that coupe.

NHFD will contact SEPA prior to commencing engineering works in, or in the vicinity of, inland surface waters to determine the level of authorisation required. Site specific mitigation for engineering works is not a matter for this plan, however Forestry Civil Engineering will adhere to all planning protocols that apply at the time of construction.

However as a minimum, no land shall be cultivated within 2 metres of any surface water or wetland or 5 metres of any spring that supplies water for human consumption, to encourage settlement of silt as the drainage waters flow over the open ground into watercourses.

Surface water drains will not discharge directly into the water environment and, where applicable, NHFD seek to address existing drains of this type to avoid siltation problems during and after forestry operations.

Where opportunities exist to deliver environmental improvement by the alteration or removal of inappropriately designed or redundant structures, for example, the upgrading of a culvert to allow fish passage or removal of a redundant weir, this will be undertaken by the Environment team. They will carry out consultation with the relevant stakeholders and will register the operation on the SEPA website. Opportunities for morphological and ecological improvements may also be considered. For example measures could include the re-meandering of artificially straightened watercourses. It is often the case that opportunities for wetland and peatland habitat restoration are only revealed after felling, when landform is clear and hydrology can be accurately assessed. Therefore site level proposals of this nature are agreed at work plan stage with the Open Habitat Ecologist and the FD Environment team.

Forestry has a significant role in mitigating the effects of climate change. Building resilience against extreme weather events underpins all our proposals but is particularly relevant in relation to protecting overhead powerline networks, public roads infrastructure and water courses. Previous cultivation and drainage operations across the National Forest Estate are inappropriate for current climate predictions and this will be addressed by the adoption of less intensive techniques in future.

Arisings from felling and thinning operations (lop and top) are not considered as waste in terms of this plan, because the material will be incorporated in the brash mat to aid machine traction and flotation thus protecting fragile soils. Additionally material will be retained on site to achieve deadwood objectives; UKFS requires (as an element of sustainable forest management) an average of 20m3 of deadwood per ha of forest/woodland. As a result, on bigger harvesting sites areas of fallen and/or standing deadwood might be designated. These areas are not classified as 'felled to recycle' and their location is determined at the site planning stage and recorded in workplan document. Other branches and material left after harvesting contribute to the functional ecology of the woodland and are an important feature of nutrient recycling that will increase biodiversity and may assist future productive woodland establishment.

Ben Wyvis & Strathpeffer Woodlands LMP proposes 'fell-to recycle' (FTR) approach in two areas – 121.50ha in north-eastern part of Torrachilty and 19.88 ha in north-eastern part of Garbat (please see Map 4 – Analysis & concept for location of these areas). Modern forestry practice may sometimes include leaving productive material on site as the most effective means of environmental risk management. Local surveys proved that these coupes were originally planted on soils with a high peat content (please see the peat depth survey result maps in supportive documents), which are highly susceptible to machine damage. The existing crop is a low yield class Lodgepole pine (LP), with little utilisable brash and small diameter timber that would be used for creating protected machine routes for conventional harvesting and extraction. FTR will significantly reduce the risk of causing significant damage to the soil

during felling and extraction. In addition, FTR will eliminate the need for circa 1 km of new forest road for timber extraction, significantly reducing the impact on the soil, hydrology and ecology of the site. Engineered forest roads require substantial ground work including drainage along the road, culverts and/or bridges to cross the watercourses and also additional drainage on the ground above the new road. Our future management objective for both of the FTR areas is peatland restoration, with additional works to block drains and level plough furrows as appropriate. Given that the existing LP crops both the FTR areas are both planted on peat deposits significantly exceeding 50 cm in depth, and that the proposed FTR in Torrachilty is adjacent to Ben Wyvis Site of Special Scientific Interest (SSSI), where blanket bog is one of the notified features, we believe that our proposal is likely to benefit the designated site and, by restoring peatland, to positively contribute towards carbon sequestration targets.

Where specific operations produce waste material not detailed above, the FD Environment or CRT staff will liaise directly with SEPA to establish the level of permission/licensing required on a site by site basis.

3.1.2.1 Flood risk

All operations on NFE will adhere to the Forest and Water Guidelines and the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by SEPA. Appropriate measures for each site will be agreed at the work plan level and put in place to prevent increase of runoff and/or woody debris from entering watercourses. The Ben Wyvis & Strathpeffer woodlands LMP doesn't propose any operations that are likely to increase existing ground level, leading to increase in flood risk downstream.
The one of LMP's main objectives is creation of riparian woodland along watercourses, in order to protect and enhance aquatic environment. We are currently reviewing our approach to creating riparian woodland, considering planting native broadleaved species in higher densities along watercourses known to be at a higher risk of flooding. Such approach would allow for increased transpiration and for slowing the flow of water, potentially reducing the risk of flooding to the properties located downstream.

The Highland Council, in partnership with Argyll and Bute Council, Scottish Water, Forestry Commission Scotland, Scottish Environment Protection Agency, Cairngorms National Park Authority and Loch Lomond and the Trossachs National Park Authority has published The Highland and Argyll Local Flood Risk Management Plan 2016 – 2022 (http://www.highland.gov.uk/downloads/file/16173/the_draft_highland_7_argyll_local_flood_risk_management_plan_lpd01). The aim of the Plan is to identify actions required to implement the Flood Risk Management (Scotland) Act 2009, and to reduce the damage and distress caused by flooding over the first planning cycle (2016-2022) and beyond. SEPA, local authorities and Scottish Water are predominantly responsible for flood risk management planning, but Forestry Commission Scotland and it's land managing agency – Forest Enterprise Scotland, has been recognised in 2012 as one of responsible authorities, with potentially significant role in managing flooding.

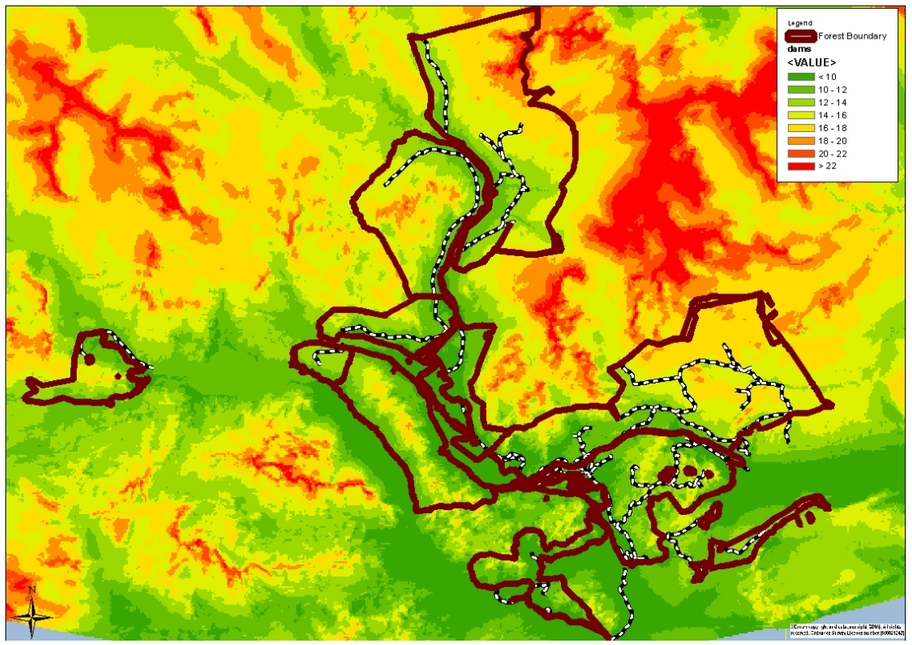
The Highland and Argyll Local Flood Risk Management Plan has identified 40 areas where the risk of flooding is greatest – these areas are referred to as the Potentially Vulnerable Areas (PVA). There are two PVAs within The Ben Wyvis & Strathpeffer Woodlands LMP area, identified by the above mentioned Plan and on SEPA's Flood Maps (http://map.sepa.org.uk/floodmap/map.htm): PVA 01/14 (Strathpeffer and Dingwall area) and PVA 01/15 (Garve and Contin area). There are records of flooding caused by River Peffery, therefore North Highland Forest District had looked carefully into the felling and restock proposals for coupes within the above catchment. The scope for retaining mature conifer crops beyond the LMP approval period (10 years), is limited by large areas of already dead, dying and decaying trees (due to *Dothistroma Needle Blight* (DNB) infection and major windthrow events in 2005, 2015 and 2016). Large areas of the Peffery catchment within the NFE boundaries were harvested and consequently restocked between 2005 and 2011, with significant areas of the second rotation plantations now exceeding 10 years of age and therefore having ever-increasing impact on the peak flow in the catchment. Further areas will be restocked in 2017 and 2018, increasing the transpiration within the catchment. As the evapotranspiration properties of dead and decaying crops are lower than those of live and heathy trees (with potential to decrease further in the future as the ratio of dead to live trees within the affected coupes changes); NHFD is looking into removing the damaged crops, with the aim to re-plant them as soon as possible after harvesting. The standard 5 year fallow period will be reduced where the *Hylobius* (pine weevil) population levels allow. In order to improve the stability and longevity of the forest within the Peffery catchment, NHFD proposes increased areas to be planted with native broadleaved species, acting as protective buffers along the watercourses, and also as future natural and more wind-resistant boundaries of management coupes within the productive area of the catchment. The forested area between the River Peffery and railway line will be planted with native species such as birch, willows, common alder (which are already present along the banks of the River), oak and aspen, to create a riparian and native woodland zone, where the tree cover will be maintained permanently. NHFD is working closely with the Highland Council Flood Team to try and identify areas within the Peffery catchment where natural flood management (NFM) methods , such as woody dams, could be introduced and potentially reduce peak flow. The Highland Council is currently modelling the impact of increasing the width of the proposed riparian planting, and also of increasing tree density within the riparian buffers – the results will inform the coupe level restock plans (work plans). Please see Map 4 – Analysis and concept for more detail.

3.1.3 Climate

Understanding that climate is a key factor in determining the correct choice of species is fundamental to interpreting the prescriptions given in this plan. Although prescriptions for native woodland – both riparian and across the wider forest are based on the National Vegetation Classification, it's important to acknowledge that limitations on accuracy are created because NVC based prescriptions in guideline documents don't account for climate variances. In all circumstances the local Operations Forester will make a judgement on any potential effect of climate on the recommended woodland type and if appropriate adjust it to reflect site conditions.

When choosing the correct productive species for a site the climate guidance contained in Pyatt, Ray and Fletcher's Ecological Site Classification (2001) will be an essential determining factor for species or woodland type choice. The ESC uses measures of warmth, wetness, continentality and windiness to make species recommendations based on national statistics (calculated from Met Office data for the recording period 1961 – 1991). Local site factors including soil and vegetation are then combined with the national figures.
The detailed species proposals for restocking are made on a coupe by coupe basis, following a site visit by Planning, Environment and Operations staff, who use site assessment, climate data, soil nutrient regime and soil moisture regime datasets. Unfortunately due to only partial coverage of detailed soils maps, SNR and SMR cannot be visualised as a map for this plan. Windiness is assessed using the Detailed Aspect Method of Scoring (DAMS) developed by Quine and White (1993, 1994) which analysed tatter flag data to produce models that would predict the speed and frequency of strong winds.
The climate for this plan area in common with much of the northern Highlands is predominantly 'cool-moist' moving to 'cool-wet' higher up the hill. There are very localised areas where the climate is 'warm-moist' due to shelter. As a result the forests in this plan area benefit from a potential growing season and local climate suitable for commercial forestry and the establishment of a good variety of native woodland types.

DAMS scores of between 10 – 16 dominate the LMP area, with quite significant differences across the forest blocks (e.g. in Torrachilty forest the DAMS scores vary between 10 and 20)
The areas with high DAMS scores (18 – 22) are restricted to north-eastern fringes of Garbat and Torrachilty, high elevations in Longart and South Garve Hill. Lower DAMS score areas are located mainly on lower slopes within the sheltered glens, with DAMS scores falling below 10 in places.



DAMS across the LMP Area

3.2 Biodiversity and Heritage Features

3.2.1 Designated Sites

Sites designated for conservation reasons within this plan area are as follows:

- Ben Wyvis NNR
- Ben Wyvis SAC
- Loch Ussie SAC
- Ben Wyvis SPA
- Glen Affric to Strathconon SPA
- Ben Wyvis SSSI
- Carn Gorm SSSI
- Loch Ussie SSSI
- Strathpeffer Wildcat Priority Area
- Wester Ross Biosphere (Transition Zone)

Forestry Commission Scotland manages designated sites within NFE boundaries according with Designated Site Planning document. This document has been reviewed as part of

this Land Management Plan and the operations associated with them carry the approval of Scottish Natural Heritage. The Designated Site Planning document is appended as supporting document to this plan and carry full details of the sites noted above. The designated habitats and species within Ben Wyvis & Strathpeffer Woodlands LMP area make it a very important area for biodiversity, and future proposals will reflect the status.

The LMP area has a rich and diverse fauna, including nationally important species such as wildcat, capercaillie, black grouse, red squirrel, red kite, great crested newt, badger common crossbill, rare aspen hoverfly, badger, pine marten, pearl-bordered fritillary. The importance of the area for the critically endangered wildcat was recognised back in 2014 when the land around Strathpeffer was named as one of the Wildcat Priority Areas, following findings of a multi – agency research founded by SNH. The biggest danger to the wildcat population is interbreeding with domestic cats, but the number and quality of cats observed within the Priority Areas give scientist hope that the decline of wildcat population can be preserved. A new 'Supercats' initiative to encourage cat owners to neuter and micro-chip their pets, launched by the Scottish Wildcat Action at the beginning of 2017, is hoped to increase wildcats' chance of survival. NHFD will fully cooperate with agencies involved in wildcat management within the Strathpeffer Wildcat Priority Area, assist in surveys if necessary, and will consider any conservation action based on the advice from them and SNH.

There are occasional records of capercaillie hens within the LMP area. Most likely these are birds dispersing from Novar Estate (to the east of the LMP area), but there is a possibility that capercaillie could colonise from other populations in Easter Ross. To create good quality capercaillie habitat, we will plant Scots pine wherever site conditions allow, without compromising other objectives set out in LMP brief. The overall length of deer fences will be reduced following peatland restoration in north-eastern part of Torrachilty, reducing the possibility of fence strikes. While replacing and/or repairing the deer fences, where deemed as necessary, we will mark them accordingly, as per FCS Technical Note 19.

At the end of 2016, following long period of consultation, the communities and local authorities of Wester Ross jointly decided to extend the existing biosphere reserve, comprising Beinn Eighe National Nature Reserve. The expansion has increased the size of the reserve from 4758 ha to 529904 ha. As a result some of the forest blocks covered by the Ben Wyvis & Strathpeffer Woodlands LMP are now within the biosphere's transition zone. This zone contains the major settlements in Wester Ross, and areas dedicated to activities such as crofting, forestry and hunting. **Please see Map 3 – Environmental Features and Map 4 – Analysis & concept for more details.**

Plantations on Ancient Woodland Sites

The National Forest Estate (NFE) in Scotland currently accounts for 28,707 ha of Plantations on Ancient Woodland Sites (PAWS) and in response to the SFS mandate, Forestry Commission Scotland (FCS) has made commitments to restore over 85% of these, while continuing to protect, enhance and expand veterans and ancient woodland remnants.

The implications for management are that pre – operational surveys are geared to detect relevant species; monitoring and operational data will subsequently be utilised to review the aims and objectives for each area of PAWS.

Using the PAWS restoration management flow chart in 'Choosing stand management methods for restoring planted ancient woodland sites Practice Guide' (R. Harmer & R. Thompson, 2013) will help determine which method of restoration management is best suited to the site-specific conditions of the PAWS.

Wider benefits to biodiversity created by non-native species will also be balanced with the restoration potential to decide on future management approach.

Native woodland on PAWS in Corriemoillie. Photo A.Baranska (NHFD)

The following distinct ancient woodland areas are recorded within the LMP area:

Site Name	Site Area (Ha)	AW ID	OS Grid Ref
Achilty	133.0	4760 (286)	NH 434 571
Achilty	84.0	4864 (990)	NH 425 560
Blackwater	29.0	4823 (852)	NH 443 596
Blackwater	72.0	4824 (853)	NH 427 590
Contin	20.0	4856 (953)	NH 459 568
Contin	16.0	4870 (8302)	NH 454 573
Contin	14.0	4871 (8303)	NH 456 569
Corriemoillie	25.0	4814 (842)	NH 379 635
Peffery Burn	24.0	4850 (947)	NH 472 603
Grudie	57.0	4750 (276)	NH 286 616
Loch Garve	3.0	4754 (280)	NH 422 602
Loch Garve	27.0	4862 (988)	NH 417 598
Loch na Crann	3.0	4853 (950)	NH 454 585
Lochluichart	23.0	4748 (273)	NC 361 624
Longart	2.0	4744 (270)	NH 396 655
Longart	14.0	4812 (840)	NH 395 649
Longart	146.0	4847 (932)	NH 407 683
Strathgarve	11.0	4851 (948)	NH 407 606
Strathrannoch	5.0	4840 (925)	NH 396 702

The extent and locations of ancient woodland areas where restoration is proposed is detailed in **Map 2 – Environmental Features**. All restoration to be undertaken on these sites will comply with current guidelines and best practice.

During the period of the Plan revision a detailed walkover survey was undertaken to determine the nature of each restoration site and at future planning meetings with operational staff this information will form the basis for decisions regarding appropriate species of trees and shrubs to be used during restocking operations. For the results of the survey please see **Appendix VI – Planted Ancient Woodland Site Appraisal.**

3.2.2 Cultural Heritage

The forests within the Ben Wyvis & Strathpeffer Woodlands LMP are rich in both scheduled and unscheduled sites. In general, majority of the unscheduled monuments relate to previous settlement and agricultural land use e.g. forts, farmsteads, sheep fanks.

The Highland Historic Environment Record has been consulted during the preparation of this plan. Following *FES Historic Environment Planning Guidance*, this Land Management Plan describes and considers the historic environment relevant to the plan area.

Appendix V – Archaeology Record section of this plan includes details of all relevant scheduled monuments. Important historic environment features are surveyed, recorded, mapped and monitored to ensure and demonstrate Forestry Commission Scotland compliance with the UK Forestry Standard and UKWAS.

In general, all significant archaeological sites are protected and managed following *Forestry & Archaeology Guidelines* (FC 2011), the FCS policy document *Scotland's Woodlands and the Historic Environment* (FCS 2008) and the supporting *FES Historic Environment Planning Guidelines* (available from the FCS Archaeologist). Management coupes, access roads and fence lines are surveyed by Forest District staff prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. At restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Opportunities to enhance the setting of important sites are considered on a case-by-case basis (such as the views to and from a designated site).

Any recent archaeological surveys that have been undertaken on behalf of FCS have been incorporated into our spatial GIS database - and any new archaeological surveys required (in unimproved upland areas for example, or areas within which the archaeological record is unusually rich) will be undertaken to the standards laid out in *FES Historic Environment Planning Guidelines.* This will ensure that undiscovered historic environment features are mapped and recorded prior to forestry establishment and management operations - and will ensure the continued comprehensive protection of the known archaeological resource.

All scheduled monuments on the NFE in North Highland Forest District are inspected on a five yearly cycle with Historic Scotland, prior to preparation of a dedicated management plan for each site. These plans give detailed prescriptions for the management of each individual monument. There are no scheduled monuments within this FDP area.

It is common when planning forest operations to discover new sites of archaeological interest. All sites are subject to rigorous pre-operations planning and inspection and staff

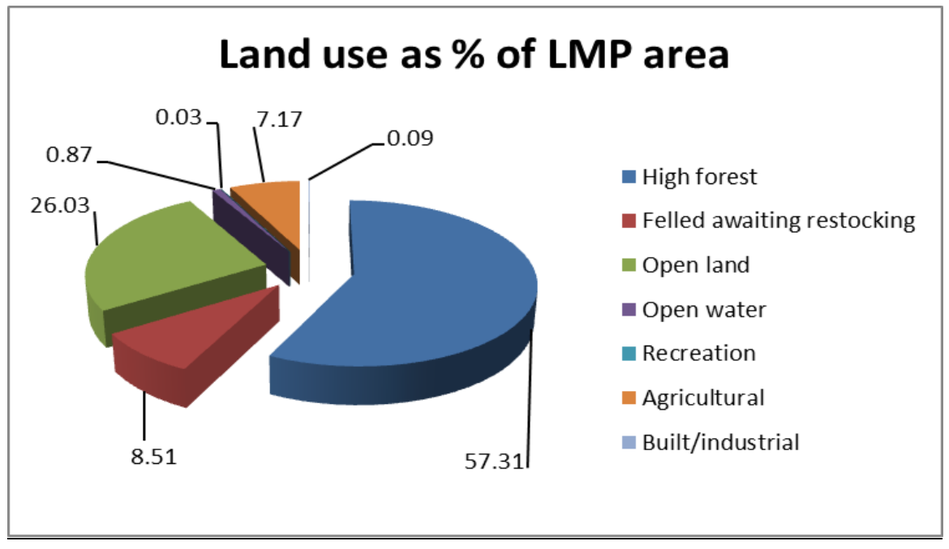
will refer to the guidance of Ritchie and Wordsworth (2010) when completing pre-operations surveys.
Advice will be sought from the FCS archaeologist on the significance of new sites and Highland Council and Historic Scotland consulted as appropriate.

3.3 The existing forest

3.3.1 Age structure, species and yield class

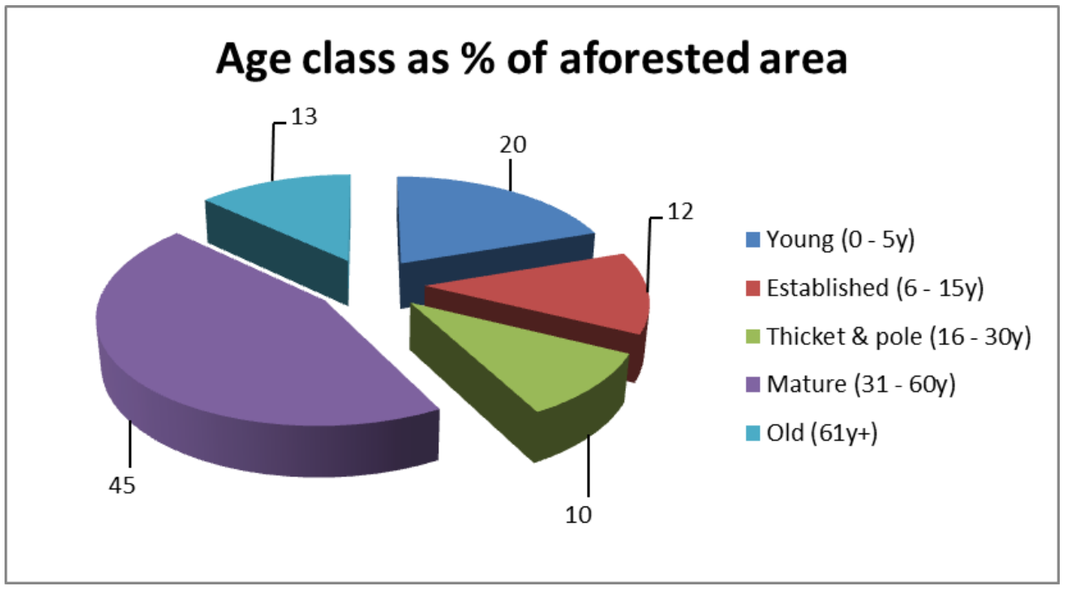
Land use

The current land use structure within the Ben Wyvis & Strathpeffer Woodlands LMP shows that majority of the LMP area is dedicated to forestry (almost 64%) with other land uses taking just over 33% (like unproductive, open, agricultural, open water, built-up areas). In afforested category there are both existing crop (57%) in various age classes (please see the 'Age structure' paragraph below) and land currently awaiting restocking (just above 8%). North Highland FD adopted an average 5 year fallow, to minimise possible damage to newly planted trees caused by *Hylobius abietis.*



Age Structure

The age structure of the forests within the Ben Wyvis & Strathpeffer Woodlands LMP shows significant areas of both young and mature crops, with a noticeably lower area of crops between the ages of 16 and 30 years. The young (0 to 5 years) and established (6 to 15 years) classes cover respectively 20 and 12 % of the LMP area, while the 'Thicket and pole' age class (16 - 30 years) has the lowest representation – 10% - due to the history of establishment and restructuring of blocks under the LMP proposal. The mature age class (31 – 60 years) has by far the biggest representation – 45% of the LMP afforested area, showing the legacy of big-scale forest establishment in the 60's, 70's and 80's. These crops are now reaching their terminal height and suffer from wind damage – impacting the LMP harvesting proposal.

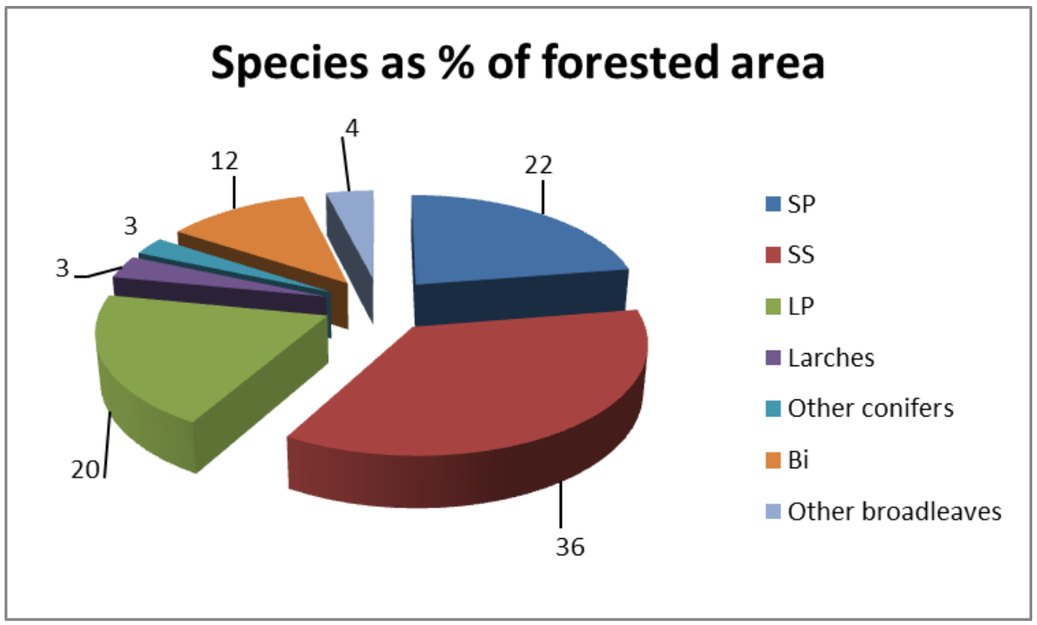


The old age class (61 years and over) covers 13% of the LMP afforested area and will increase in the future, as the veteran trees will develop within the the native woodland and riparian woodland zones.

Species

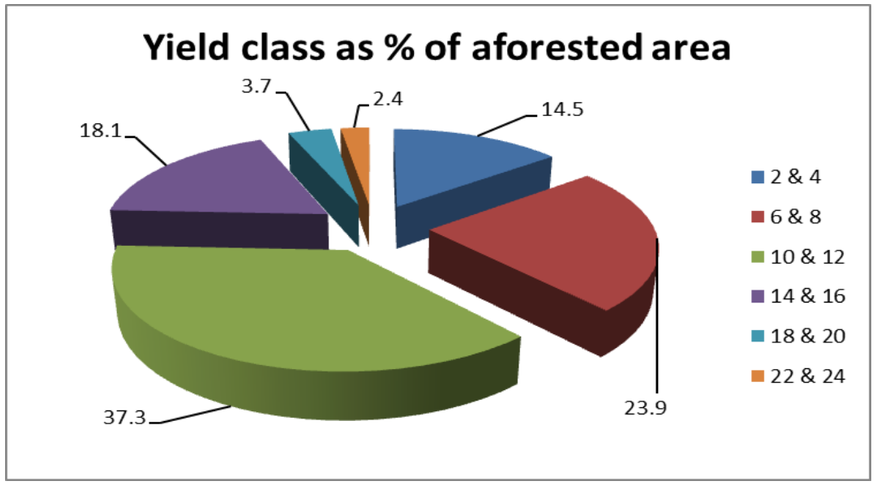
The chart below illustrates the species range across the LMP area, with the conifer species covering 84% of the afforested area. Sitka spruce (SS) predominates (36% of the forested area), with Scots pine (SP) as the second most common species at 22%, followed by Lodgepole pine (LP) at 20%, larches at 3% and other conifer species (including Douglas fir (DF), Norway spruce (NS), Noble fir (NF), Grand fir (GF), Omorica spuce (OMS) and Western hemlock (WH) covering the remaining 3% of afforested area.

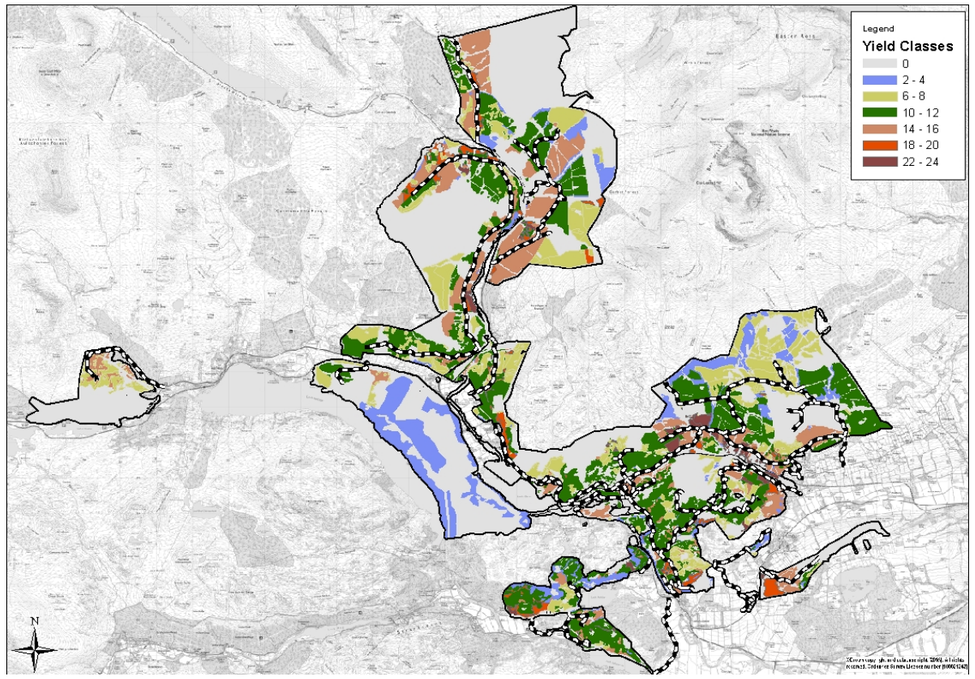
LP and SS are planted both in pure species blocks and in mixture.
The broadleaf species are relatively well represented at almost 16% (with Birch as the main species – 12% of afforested area, and other broadleaf species (Oak, Aspen, Alder, Ash, Beech and others covering about 4%. There is considerable scope for extension of broadleaf area, particularly in relation to the PAWS restoration programme and establishment of riparian native woodland intended to buffer watercourses
There is also limited scope for productive broadleaves.



Yield Class

Yield classes found in Ben Wyvis & Strathpeffer Woodlands LMP area are typical for the species and site types encountered – almost 38% of the forest area lies in the 10 - 12 range, and just below 24% within 6 - 8 range, and 14 – 16 range cover 18%. 2 – 4 yield classes cover about 15% of LMP afforested area, reflecting significant areas of native woodland on PAWS. Higher yield classes (18 – 20 and 22 and above) cover respectively 3.7% and 2.4%. It is anticipated that the yield class can be improved during the coming rotations by improved use of silviculture techniques and more appropriate site selection for species, however it is accepted that some areas will only be capable of producing biomass. Some of the most productive sites will be subjected to PAWS restoration. The poorest sites have undergone analysis to assess suitability for productive forestry and this has informed the future habitat proposals.





Yield Class distribution across the LMP area.

3.3.2 Site Capability

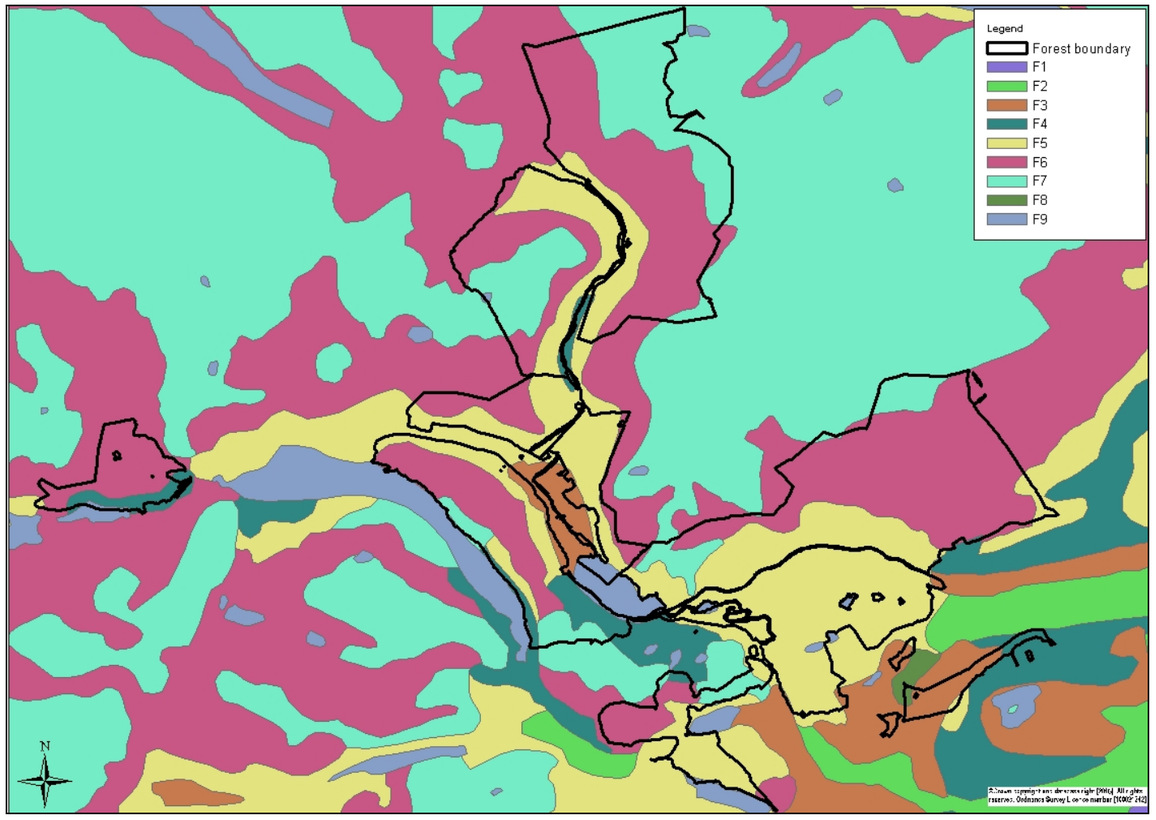
The James Hutton Institute led the development of the Land Capability for Forestry (LCF) classification - a series of maps with accompanying handbooks at 1:250 000 scale, published in 1988. The classification and guidelines (Towers and Futty, 1989) allows planning to be undertaken based on an assessment of the factors influencing tree growth, notably climate, soils and topography. Silvicultural practices are also considered and developments in this area since 1989 mean that some local interpretation of the Classification is required. The Land Classification for Forestry is based on an assessment of the degree of limitation imposed by the following factors (in relation to productive forestry and not including establishment or enhancement of native woodlands):

- Climate – accumulated temperature and exposure
- Windthrow – the risk of wind damage based on climate data
- Nutrients – assessing base geology and volume of organic/mineral soils
- Topography – giving an indication of the likely limitations on forest operations
- Draughtiness – assessing soil moisture and relating it to tree growth potential
- Wetness – water table movements and the effect on rooting depths
- Soil – relating to basic soil types and assessing effects of any modification

The Land Classification uses the descriptions in the table below:

Class	Description
F1	Land with excellent flexibility for the growth and management of tree crops
F2	Land with very good flexibility for the growth and management of tree crops
F3	Land with good flexibility for the growth and management of tree crops
F4	Land with moderate flexibility for the growth and management of tree crops
F5	Land with limited flexibility for the growth and management of tree crops
F6	Land with very limited flexibility for the growth and management of tree crops
F7	Land unsuitable for the producing tree crops

The Land Capability for Forestry guidance suggests varied flexibility for the growth and management of tree crops, from good (lower slopes in Strathgarve and South Garve Hill, Blackmuir, Ord Hill and Jamestown), through limited (lower lying parts of Torrachilty, Longart, Garbat, Achilty, Strathgarve & Corriemoillie) to very limited (mainly upper slopes) and unsuitable (higher elevations); therefore the choice of species for a significant part of the LMP area is restricted to those capable of growing in wet and exposed locations with poor soils. A map showing the distribution of classifications is shown below. The capability of the forests within this plan area to sustain productive forestry is dictated to a large extent by the local climate and equally significantly by geology, soils and the consequent nutrient availability. Site capability is assessed on a coupe by coupe basis to ensure that the correct species and establishment techniques are matched to the site.



LCF across the LMP area.

3.3.3 Access

The forest road network generally provides relatively good access to the LMP Forests. Further roading is necessary to facilitate harvesting of coupes in few blocks (e.g. Strathgarve, Garbat, Corriemoillie), particularly where long extraction distances would lead to unacceptable levels of soil damage and siltation. Please see table below for details.

Roads currently used for forest management access will need to be upgraded to Cat 1A to take timber traffic once harvesting starts. The following planned roads are currently noted:

Location	Length (metres)	Grid reference
Grudie extension	835	NH 2921 6294
South Garve Hill spur road	255	NH 3602 6287
Achilty – Loch Achonachie extension	680	NH 4301 5538
Achilty extension	205	NH 4187 5624
Achilty new road	160	NH 4437 5814
Achilty new entrance	110	NH 4471 5771
Garbat	365	NH 5663 0244
Strathrannoch extension	225	NH 4094 6950
Strathgarve spur road	1340	NH 4013 6253
Loch na Crann spur road	110	NH 4522 5804
Corriemoillie extension	375	NH 3680 6370

FD Operations staff will contact HC TECS prior to relevant coupes being harvested to ensure that operational restrictions are accommodated in the harvesting contract requirements and that wear and tear on relevant public roads can be minimised.

3.3.4 Low Impact Silvicultural Systems (LISS) Potential

With DAMS scores in moderate values and a reasonable proportion of mineral soils, there is scope for LISS within the Ben Wyvis & Strathpeffer Woodlands LMP area. There are number of reasons why LISS is a desirable management approach:

- Protection of general water quality for freshwater pearl mussels and important fisheries;
- Prevention of siltation;
- General improvement of landscape on important tourist routes;
- Improvement of crop resilience and resistance to disease and climatic events.

The main LISS areas within Ben Wyvis & Strathpeffer Woodlands LMP area are Torrachilty and Strathgarve forests, with smaller areas Achilty. There are also significant areas of native woodland within the LMP area which are to be managed under the Minimum Intervention regime.

3.4 Landscape and Land Use

3.4.1 Landscape character

A site landscape appraisal has been undertaken by FD staff to assess the likely impact of future management and identify current constraints and opportunities to enhance the landscape. The FES Landscape Architect visited the site with NHFD planning staff on 31st of May 2016. Due to the dramatic landform of central Ross-shire, the views are both distant (Torrachilty viewed from A9 approaching Cromarty Bridge from the south; Longart and Garbat viewed from Loch Glascarnoch, Blackmuir from Heights of Fodderty), and intimate and close (Achilty from minor Contin to power station road; lower slopes of Longart and Garbat blocks from A853).

The forested area covered by the Ben Wyvis & Strathpeffer Woodlands Land Management Plan area lie where four distinct landscape character zones meet. According to the Scottish Natural Heritage Ross and Cromarty Landscape Character Assessment (F. McIlver, 1999) – those landscape characters are: rounded hills, rocky moorland, forest edge farming and wide farmed strath.

The rounded hills landscape, prevailing in the north-eastern part of the region, is characterised by big hills, which appear heavy and rather bulky, as they are not too high in comparison to their wide bases. The low vegetation (mostly heather) gives a smooth texture to the hill, highlighting their simple form. The landscape is vast in scale, with long convex summits with no strong focal points. The impression is that of a mass of hills. Simple lines sweep down into broad open straths, creating sense of grandeur. Deep gullies are carved by numerous watercourses breaking up the slopes.

Rounded hills landscape in Torrachilty Forest. Photo: A. Baranska (NHFD)

Many of the accessible areas (mainly close to the main roads) have been used for conifer woodland plantations form the 50's onwards (please see the photo above), in order to utilise the free draining slops. That introduced some enclosed spaces, sharp edges, geometric shapes and colour contrast with the surrounding ground, visible from significant distances. These plantations are currently reaching the end of rotation, and the young plantations are designed with more attention to the impact on the wider landscape. In general, a greater proportion of open land than in existing plantations would be desirable, with use of thinning to encourage diverse woodland age and edge. Trees should be established in varying densities to mimic the natural processes. New woodland should be planted (or preferable, established by using natural regeneration) on lower slopes, in order to keep the proportion of woodland and exposed summit in balance. Fencing should be avoided, but if necessary, the fences should relate to the lie of the land.

Rounded hills landscape slopes down towards the wide flat strath floor, gradually changing into wide farmed strath landscape character, The woodland or/and moorland prevailing on the slopes gives way to agricultural use on the flat land – the change is often highlighted by the change in colour, as the improved grassland is vivid green, contracting with dark green of conifer plantation or brown of moorland. This landscape character often gives a sense of enclosure, especially if there is significant woodland cover. There is a long history of human settlement in this particular character type, as humans had been drawn towards these sheltered and relatively fertile areas. Large estates often have their big estate houses, entrance gates and mature woodlands located in this landscape character. The broadleaf woodland remnants are generally located on the lower slopes, and are under pressure from sheep and deer. Preferable means of g woodland cover will be by natural regeneration, which would require reduction of grazing pressure. If that's impossible, care should be taken to avoid creation of dense stands with hard edges conflicting with linear features of this landscape character. Opportunities to link the new plantations with existing woodland should be used. The traditional access routes had been upgraded to main roads, serving today as main tourist routes to the west (e.g. A835 along Strath Garve and the Black Water; A832 in Strathbrann).

Wide farmed strath landscape character of Strath Conon, with the rounded hills landscape character further up. Photo: A.Baranska (NHFD)

On the margin of the two landscape characters described above sits forest edge farming landscape character, where agricultural use of land gradually gives way to forestry. This landscape type is generally found on the base of convex slopes where topography in

gently undulating. It is characterised by the traditional pattern of farming (geometric enclosures especially prominent where stone walls, gorse hedges and hedgerow trees are present), and existing conifer plantations. The size of fields has an impact on overall impression, with smaller fields creating stronger sense of enclosure. As with wide farmed straths, this landscape character has a long history of human settlement, with features such as estate houses, old walled enclosures, agricultural buildings and mature woodland. The narrow road system usually follows field boundaries in straight lines, often with sharp corners. The scale of woodland ties to geometry of fields and roads, producing a patchwork of open and enclosed space. The largest plantations are usually located on the higher ground and can appear imposing due to their large scale, vertical edges, high density and dark colour. The plantations often act as the main enclosing element in the landscape and can even influence local microclimate by shading on their northern edge etc. The conifer plantations planted from the 50's onwards are now mature and undergo restructuring, which creates opportunity to make sure that in the future they sit better in the landscape. The felling of existing plantations exposes the underlying landform and open up spaces. Clearance of the forest will cause short term visual and physical disruption, until the restocking is undertaken. The exposed trees on edges of clearfell sites are prone to wind throw which can emphasise the site edges and the 'messy' image of forest clearance.

The forest edge farming landscape character (Heights of Fodderty). Photo: A. Baranska (NHFD)

The key consideration in this landscape character is the balance between the open and enclosed space, which might be influenced by changes in land use, e.g. new woodland creation, woodland restructuring or management type. The overall forest management should aim to retain continuity of the landscape structure, by balancing the ratio of open fields to woodland. The impact of clearfelling can be reduced by phased felling, and the timing of restocking can implemented over longer period of time if needed. Consideration should be given to opening up views of important landmarks, such as hills. Where possible, the presence of broadleaf trees should be retained and restructured by using an irregular planting pattern of clumps and individual trees, to create greater diversity of texture and colour. The increase of woodland cover should preferably be achieved by use of natural regeneration. If that is not practical, then the new woodland creation projects should recognise the importance of balancing the open and enclosed space. It would be most appropriate to encourage new woodland on the lower slopes, retaining the semi-enclosed character. Using mixed conifer and broadleaf trees will ensure a greater diversity in texture and colour of the woodland. Greater proportion of open space and softer edges should be used to improve appearance of the conifer plantations.

Rocky moorland landscape character is that of relatively low lying ground, with rough rocky outlines and rugged texture with no strongly recognisable form of focus. The underlying landform is uniformly covered by low moorland vegetation, with abundance of rocks, boulders and rock outcrops. There are no distinctive features, therefore there very few focal points. Thanks to the presence of convex and concave slopes, v – shaped and u – shaped valleys, the landscape offers a very diverse experience: from deep enclosure at the bottom of the valleys to extreme openness and distant views on the hill tops. Occasional narrow river gorges with shelter microclimate and better soils harbour variety of trees and shrubs. Flat land along the rivers is often used for roads and service lines. Human activity is concentrated along these communication lines leaving the interior largely uninhabited. Old houses were often built were located where local microclimate offered favourable conditions – these houses, small in scale, seem to fit well into the surrounding landscape. Newer developments, such as fence lines, masts, new houses, telegraph poles tend to sit on the landform, therefore reinforcing the contrast with the irregular, complex topography. Mature conifer plantations tend to blanket the underlying landform and rocky outcrops. Their often straight edges and dark colour contrasts sharply with the surrounding vegetation. The appearance of these plantations could be improved by restructuring using modern and more sensitive management and design practices.

Rocky moorland landscape character at north-western part of Longart forest. Photo: A. Baranska (NHFD)

The clearfelling might result in ground disturbance, with the visual impact caused by highly visible stumps and brash and possibly extraction and access routes. Care should be taken to ensure that the size and shape of the felling coupes relates to the character of the landscape. To ensure that restructuring has a positive effect, links with the existing woodland, natural boundaries and edges should be utilised. The need for fencing, and the layout of fence lines should be carefully considered. In order to limit the landscape impact

of new woodland, the natural regeneration without the use of fencing is preferable. Such approach would require reduction in grazing pressure. Where that is not viable due to lack of seed source or high numbers of herbivores, planting should be carried out in irregular pattern, sparse near to woodland margins, to avoid creating of hard woodland edges.

3.4.2 Visibility

The landscape sensitivity varies across the LMP area, offering both distant and close up, intimate views of the forest blocks. Majority of the forested area is located within popular tourist area and along busy tourist routes to the west and north and in relative proximity to population centres of Strathpeffer, Contin, Garve and Dingwall. People traveling along A835, A832 and A834 can enjoy both close and distant views of several forest blocks within the Ben Wyvis & Strathpeffer Woodlands LMP area.

Garbat & Longart forest from A835 (Loch Glascarnoch). Ben Wyvis in the background.
Photo: A. Baranska (NHFD)

The winter storms in recent years (latest one in January 2016) caused extensive damage in all forest blocks covered by the Ben Wyvis & Strathpeffer Woodlands LMP. The unsightly damaged crop is mainly located in the interior of the forest blocks, but is still visible to the members of the public traveling through the LMP area. Effort will be made to remove the windblown trees within the 1st phase of the Plan (2018 – 2022).

3.4.3 Neighbouring land use

The following land uses are noted across the landscape adjacent to the Ben Wyvis & Strathpeffer Woodlands LMP area:

- Productive forestry;
- Conservation;
- Tourism including outdoor pursuits, fieldsports and angling;
- Livestock agriculture
- Renewable energy developments.

3.5 Social factors

3.5.1 Recreation and access

Recreation across the Plan area has a high profile. Each of the blocks covered by the Ben Wyvis & Strathpeffer Woodlands LMP has a distinctive character, with significant differences in visitor numbers.

Currently the main visitor hotspots within the Plan area are: Torrachilty Forest (with its extensive network of 'wild' cycle trails, forest road the iconic Rogie Falls and other trails), Blackmuir (with a network of forest walks and roads and access to Knock Farril – Scheduled Ancient Monument (SAM) and a popular view point), Achilty (with a popular picnic spot) and Strathgarve (with forest walks). Garbat, located at the foothills of Ben Wyvis, is visited by high number on hillwalkers, who are using the FES carpark off A835 as a starting point for climbing Ben Wyvis. All forest blocks are used daily by local residents, mainly for dog walking, but also for walking, jogging, cycling and horse riding, with the highest visitor numbers noted in blocks located close to big population centres (e.g. Blackmuir and Torrachilty).

Arched stone bridge over Black Water, en route of the forest walk in Little Garve.
Photo: A. Baranska (NHFD)

Popular picnic spot on Loch Achilty shore, Achilty Wood. Photo: A.Baranska (NHFD)

Torrachilty Forest hosts annually two major sporting events: Strathpuffer – UK's only 24hour mountain bike endurance event held in winter conditions; and the Snowman Rally. Strathpuffer is gaining popularity, attracting ever growing number of both participants and spectators. Since the 1st event, back in 2005, the participants are to complete as many 11 km laps mainly 'wild' trails as possible within 24 hours. FES carpark in Torrachilty Forest at Contin serves as the main camping area for the event, with the FES Contin depot as a start/finish of every lap, and a servicing area.
Snowman Rally is also run in Torrachilty Forest, using the extensive network of forest roads. Both events bring significant number of visitors to the area.
The National Forest Estate is seeking to provide an appropriate backdrop for the outdoor activities, but also provides access facilities in the form of carparks, interpretation boards and forest trails of varying grades. The forest road network provides excellent opportunity for longer walks, cycling and horse riding. Formal facilities within the Ben Wyvis & Strathpeffer Woodlands LMP area are as follows:

- Contin walks, cycle trails, carpark and toilets (Torrachilty Forest)
- Rogie forest walks and carpark (Torrachilty Forest)
- Blackmuir walks, stone maize and car park (Blackmuir Forest)
- Knock Farril viewpoint, access to Blackmuir forest walks and carpark (Blackmuir Forest)
- Silverbridge forest walk and car park (Strathgarve Forest)
- Little Garve forest walk and carpark (Strathgarve Forest)
- Loch Achilty picnic spot and carpark (Achilty Wood)
- Ben Wyvis access path and carpark (Garbat Forest)

In addition to the visitor provisions marked above, all NFE land is open to responsible access under the Scottish Outdoor Access Code (2005). Possible restrictions might be applied at the time of forest operation, with prohibition signs in place.
The Highland Council in reviewing core path network in Ross-shire. The core path network aims to satisfy the basic need of local people and visitors for general access and recreation. It is designed to provide links to the wider path network throughout the Highland Council area. The network comprises a mixture of existing paths and new ones, located close to where people live. That range from tracks worn into natural ground (desire lines) to paths constructed to a high specification. The core paths cater for all types of users – walkers, cyclist, horse riders, and people with disabilities, and are a key part of outdoor access provision. NHFD takes an active part in the HC's core path review. Please see **Map 4 – Analysis and Concept** for a currently approved core paths within the Ben Wyvis & Strathpeffer Woodlands LMP forest blocks.

3.5.2 Community

The LMP areas falls within the Wester Ross, Strathpeffer and Lochalsh Ward of the Highland Council Region and is represented by the following Community Councils (CCs):

- Strathpeffer CC
- Contin CC
- Garve & District CC

NHFD included the community councils in the consultation process and the replies, where received, are recorded in **Appendix III – Consultation record external.**
In addition, NHFD works with local interest groups to help to develop projects aiming at benefitting local communities (e.g. Wyvis Natural Play Park is being developed on NFE land in Little Garve by Garve and District Community Council, with funding from Lochluichart Community Trust).

3.6 Statutory requirements and key external policies

This Land Management Plan has been drafted to ensure that planning and operation functions will comply with the complex raft of legislation and policies that protect and enhance the Scottish Environment. **Appendixes I and II** contain further information on many of the guiding documents.

4.0 Analysis and Concept

4.1 Analysis of Opportunities

The Ben Wyvis & Strathpeffer Woodlands Land Management Plan has been produced in accordance with the UK Forestry Standard and the UK Woodland Assurance Scheme (UKWAS) guidelines.
The analysis and concept table in the following section is a culmination of the analysis of the key features identified in the previous sections and highlighted on the Key Features Maps (**Maps 2 & 3**). The analysis of the constraints and opportunities will focus on delivering the North Highland District Strategic Plan key commitments aiming at the publicly owned National Forest Estate to be:

- Healthy
- Productive
- Treasured
- Cared for
- Accessible
- Good value

The analysis and concept table identifies the relevant opportunities and constraints that are likely to be encountered during the implementation period of this plan and in the longer term. The key areas of this plan will be:

- To manage the productive areas of the forest to produce high quality timber and to manage more marginally productive areas to produce biomass at an economically viable scale and quantity;
- To maximise the diversity of tree species where climate and soils allow;
- Safeguard and improve designated species and habitats by restoring and/or enhancing PAWS, and establishing native and riparian woodlands. Where soil and climate allow, plant them in commercial densities to act as a productive forest comprising native species of broadleaf and conifer;
- Improve the environmental quality of the local water bodies by establishing a network of native broadleaves and open space in and around riparian areas through forest restructuring, planting and natural regeneration, thereby protecting and enhancing the conservation potential of the designated sites;
- To enhance habitats to make them suitable for salmonids, wildcat, capercaillie, black grouse, red squirrel, and other species and allow them to flourish;
- Safeguard and improve designated species and habitats by restoring peatland where previously non-native conifers were planted.

4.2 Concept Development

The design concept forms the broad spatial framework for the forest that will guide the detailed design (**see Map 4 Analysis and Concept**).

The overall aim of the plan is to create a forest that meets the priorities set out in the district strategic plan and addresses the local issues identified in the plan brief.

On full implementation of the plan, around 41% of the land will be managed for commercial timber production, ranging from biomass and local firewood production to providing sawlog material for processors through long term contracts; 0.3% - productive broadleaves; almost 18% - native woodland, just above 4% - productive native woodland on PAWS (species composition depending on soils), just over 9% - riparian woodland; just under 5% will be managed under Low Impact Silvicutural Systems (LISS) and 1.12% - Natural Reserve. Remaining area (about 26%) - open ground, including existing open peatland habitats, open water, ground open for archaeology and agricultural land (common grazing).

Strathgarve Forest from Corriemoillie. Photo A.Baranska (NHFD)

Restoring key areas to native woodland and from conifer plantation and enhancing the condition of existing open and riparian habitats will improve the forest's ability to adapt to climate change and provide suitable habitat for important protected animal species.

The plan proposes woodland removal on very exposed sites on deep peat adjacent to designated sites and, as this is associated with internal re-design of the woodland to meet environmental criteria, it does not fall within the scope of woodland removal policy guidance (Forestry Commission Scotland, 2009).

It is neither the intention nor the purpose of this plan to visualise detailed prescriptions of species boundaries or internal open space. This is in line with CSM6 (February 2005) which states:

"In certain circumstances (e.g. poor soil map coverage, archaeological sites, where access to the forest is difficult) it is impractical to draw up detailed restock proposals with exact boundaries. In such circumstances, indicative restocking proposals may be produced subject to agreement between FC/FE. Detailed proposals would be finalised at the coupe planning stage"

The rationale for habitat type is given in **Section 6.4 – Management Prescriptions.** Species will be matched to site following detailed soil survey in each compartment, as land form is revealed after clearfell. North Highland FD believes this to be best silvicultural practice and the most suitable way to achieve sustainability in future rotations.

Future habitat management is therefore logically proposed and mapped using a zoning method that indicates where each zone will be located.

The extended (generally up to five years) fallow periods that are required prior to restocking, to allow pine weevil populations to abate, have the negative effect of compounding nutrient deficit because nutrient released from decaying leaf litter will largely have been flushed from site by year five. It is anticipated that post planting applications of fertiliser will be required on the upper margins of the forest and remedial applications may be required in some crops in line with industry best practice (Taylor, 1991), however appropriate choice of silvicultural mixtures and well-timed heather control will be preferred to fertiliser.

Felling will generally exceed restocking within any five year period due to the practice of fallow and the inclusion of peatland restoration and higher levels of internal open space through restructuring. Improved site to species selection will maintain productivity in future rotations. The planning system adopted by NHFD to ensure that silviculturally appropriate species are planted is as follows:

Coupe planning visit takes place when felling has reached 75% of area to identify any felling boundary issues, discuss landform, climate and soils and identify suitable species for the next rotation. This meeting is attended by staff from Planning, Operations, Environment, Deer Management and Stewardship and is called the '75% Meeting'. Outcomes are recorded in the coupe workplan.

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Three years prior to restocking the Programme Manager chairs a site objectives meeting with the Planning Manager, Planning Forester, Environment Manager and FM Forester and uses the workplan to create appropriate planting stock orders for the coupe and this order is entered into the FD Business Plan by the FM Forester.

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Once the restocking operation has taken place the Operations Forester passes the coupe restock details to the FD GIS Technician who then updates the Sub Compartment Database. The GIS Technician then informs the Design Planning Forester of completion.

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The FD Design Planning forester then undertakes a site visit to confirm that the restock operation complies with the Land Management Plan objectives and design prior to review of the plan.

4.3 Analysis and Concept Table

Factor	Opportunity	Constraint	Concept Development
Climate and soils	Identification of soils capable of supporting productive crops will allow improved silviculture in the next rotation. Stratification of sites based on growing potential will allow biomass crops to be targeted to more marginal sites and higher silvicultural inputs to be concentrated on areas of higher potential.	The less fertile organic soils, adjacency to the designated and undesignated active and recovering peatland habitats, and the exposed nature of some parts of Ben Wyvis & Strathpeffer Woodlands LMP area will limit the choice of suitable species for the establishment of productive woodland.	Use site soil and climate conditions at coupe level to indicate future management prescription and species at a scale which is silviculturally appropriate. Use the Ecological Site Classification Support System to assist in correct species choice/management prescriptions. Continue to introduce site improving species such as Birch as an element of productive conifer sites.
Pests and Diseases	Areas with significant wind damage and those infected by Dothistroma Needle Blight (DNB) will be targeted for removal early in the Plan. An increase in species diversity will improve the ability of the forest to withstand attack from pathogens now spreading toward or across the north of Scotland.	The current spread of Dothistroma Needle Blight (DNB), the spread of Chalara (Ash Dieback) to the central Highlands and the continued identification of Phytopthora all continue to constrain species choice for planting and affect felling programmes. Lodgepole pine is an important productive species across the area and is particularly vulnerable to current pathogens.	Prioritise felling of the most significant areas of windblow and DNB affected crops. The FD will continue to play a leading role in the development and application of best practice in relation to DNB and will undertake monitoring of tree health routinely in line with FCS policy. In addition local staff will continue to be updated through training events and local communications meetings.
Forest structure	The successful establishment of current restock sites will allow continued improvement of age structure diversity. The development of native and riparian woodland on appropriate sites will add to age class diversity.	The restructuring programme is a long term objective so changes in age structure will inevitably only happen over a period in excess of 50 – 100 years. The windblow suffered in recent years has compromised the forest structure for the current rotation.	Accept the need to fell some areas prematurely in order to establish more sympathetic felling order (against prevailing wind) and more wind firm coupes in next rotation. Use watercourses, roads, existing and designed open ground as natural coupe boundaries, allowing for development of wind resistant edge trees and as a consequence more resilient coupes. Extend the rotation of coupes where climate and soils allow, to increase age class structure, while improving timber quality. Ensure areas of natural reserve are correctly identified to increase age diversity.
Hydrology	Remove riparian conifer and slow down run-off by restoring a mosaic of riparian woodland/open space and adopting low impact ground preparation techniques. Adopt current silvicultural best practice using nursing mixtures where possible to reduce reliance on fertilisers and ensure fertiliser applications in other areas follow best practice. Avoid intensive drainage regimes on the organic soils. Opportunity to significantly enhance riparian habitat to the benefit of salmon and trout.	Forestry is one factor that could contribute to an increase in phosphorous levels and siltation, in addition to the effects of natural processes. Inappropriate cultivation of organic soils could cause deterioration in hydrology that will lead to oxidation of peat, with consequent carbon and methane release.	Follow best practice, adopt riparian woodland buffer zone widths of 30metres from each bank (on average) for more significant watercourses and avoid unnecessary fertiliser applications. Promote silvicultural nurse mixtures. Plant riparian native woodland where regen is unlikely and dedicate this as minimal intervention at an appropriate stage. Restore peatland habitat on sites where such restoration is likely to be successful, will ensure positive carbon balance and will benefit the hydrology of the area.

Timber recovery	The opportunity to increase timber quality – with particular emphasis on conifers on more productive sites as it can increase productivity and income. Where current non-native species are compromising biodiversity aims (e.g. PAWS), remove the crops as early as possible.	Extensive areas of winblown and/or DNB affected crops with quickly deteriorating timber. Stability of crops that miss their thinning windows could be compromised and the marginal economics of thinning could mean that budget constraints affect programmes.	Prioritise higher value windblown coupes while deciding of the timing if felling. Ensure thinning interventions are undertaken on time and that best silvicultural practice is a high business plan priority.
Biodiversity	Opportunity to increase species diversity by introducing native broadleaf species – particularly riparian woodland providing dappled shade - as future seed source. Provide better linkage with neighbouring designated sites. Protect the designated species and enhance the riparian habitat capable of improving the aquatic environment for salmon and trout. Restore/enhance PAWS areas.	Control of deer populations will be key to the establishment of sensitive broadleaf species and maintaining of deer fences will be required. Riparian native woodland establishment could have locally negative effects on feature species if done inappropriately (e.g. water vole and otter). Timing of removal of non-native crops from PAWS sites needs to be correct, to ensure preservation of native remnants without unnecessarily compromising income by early harvesting of immature crops.	Targeted deer culls and the maintenance of external deer fencing will be employed to assist in establishing sensitive species and native or riparian woodland. Deer fencing will be monitored and will be removed where appropriate. We will work closely with neighbours and stakeholders to ensure best practice is adopted and fencelines are planned and managed at a landscape scale appropriate to deer management. Appropriate low impact establishment techniques will be used to establish riparian woodland. Pre ops surveys by environment staff and FES ecologists will inform precise siting of native woodland planting. Peatland restoration on deep peat sites adjacent to designated peatland sites, undesignated active bog and recovering peatland will improve the bog hydrology and will lead to improved habitat linkage and condition for bog land flora and fauna. PAWS sites will be monitored to assess their conditions and inform future management decisions. Forest and Water Guidance will be adhered to and every effort will be made to ensure that forest operations don't have negative impact on watercourses.
Open habitats	To include open space in native woodland and productive woodland to increase forest structure diversity. To improve the quality of blanket bog habitats where they are encountered.	Open habitats may be impacted on by regeneration. Organic soils may be damaged by inappropriate establishment operations that affect hydrology.	Use buffer zones and transition habitat to reduce the risk of unwanted regeneration. Avoid silviculturally inappropriate restocking practices. Consult with stakeholders and maintain designated site plans to ensure that all operations are appropriate to designated species and habitats.

Native woodland	Opportunity to restore/enhance PAWS areas. Opportunity to increase area of native woodland and species diversity in riparian zones.	PAWS restoration might be un-achievable due to native woodland remnants (both native trees and native ground flora) being unable to recover after extended period of suppression by non-native species. Planting opportunity will be partially limited due to unsuitable planting ground. Significant deer populations may cause difficulties during the establishment phase.	Survey PAWS areas to accurately assess their condition and inform future management decisions. Continue to follow best practice deer management. Adhere to deadwood policy. Create native woodland in line with current best practice, ensuring species appropriate to site are used and that structure will benefit designated species.
Designated Habitats and Species	Sustain and enhance the quality of habitat to encourage species and sites noted in this plan. Opportunity to demonstrate exemplar management of a diverse range of habitats.	Competing priorities could lead to an imbalance in a habitat favourable for all species. Rise in predator populations may compromise conservation efforts. Forest pathogens affecting important tree species such as larch, juniper, ash and scots pine may threaten the habitats of key species. Large scale clearfell may compromise species habitat.	Develop internal structure to allow greater age class diversity in future rotations, providing increased habitat diversity. Increase native habitat connectivity to benefit species diversity. Ensure that appropriate survey and monitoring is undertaken. Monitor regen on open ground sites. Monitor forest health and continue to contribute to research and the development of disease management best practice.
Historic features / archaeology	Opportunity to integrate historical features into the open/native woodland/riparian woodland habitat network. Opportunity to establish new heritage management practices such as grazing and burning where permission from Historic Scotland now exists.	Improvements are likely to be achieved over the longer term as the forest is restructured.	Consider historical features when designing open habitat network and planning restock operations. Refer new finds to the FCS archaeologist. Ensure that all sites are surveyed and results fed into the workplan. Ensure that all scheduled monuments have a SAM plan and that the work suggested is delivered.
Recreation and Access	Opportunity for formal and low key access. Good infrastructure and facilities for tourists and local users. Improve visual diversity and landscape quality. Opportunity to enhance the landscape around existing RoW and Core Path network. Opportunity to create a wider access network with minimal investment using existing forest roads.	Funding and resources will inevitably create a constraint to further development of facilities. Lack of longer trails and marketing budget may constrain user numbers. Forest operations can create conflict with forest users where sites are closed for Health and Safety reasons. Many access points – formal and informal – exist across this extensive LMP area and some may not be fit for purpose. Antisocial behaviour – motorbike use, litter, dog disturbance and unauthorised trail building will compromise conservation objectives and disturb other forest users.	Build on established links with local providers to encourage use of the sites. Continue to improve existing facilities as resources allow. Continue to improve path corridors by appropriate ‘visitor zoning’ operations. Work with the Highland Council Access Officer, Police Scotland, Community Councils and local residents/landowners to explore potential access linkage, limit anti-social use and encourage access by all.

Landscape	Through well designed coupe shapes and use of a greater diversity of species, the landscape impact of the forest could be significantly improved. The increased areas of native and riparian woodlands will lead to a more organic transition from neighbouring land use to high forest.	Deer pressure may limit the successful establishment of the native and riparian woodland (more palatable species). Extent of winblow and forest health issues may mean coupe shapes are re-designed to recover deteriorating timber rather than improve landscape. Crops on very sensitive soils may be left after harvesting if operations become uneconomic, creating unsightly blocks.	Effective deer control, by a variety of techniques, will be adopted to allow the establishment of sensitive species and native/riparian woodlands beyond browsing height and will then be reviewed at the end of the plan period. A pragmatic approach to coupe shapes will be taken if winblow or disease dictates early felling. Accurate stratification of crops before marketing will allow harvesting to achieve full clearance of sites.

The analysis and concepts can be viewed spatially in **Map 4** of this plan and the perspective visualisations are provided.

5.0 Summary of proposals

5.1 Forest management

The Ben Wyvis & Strathpeffer Woodlands Land Management Plan has been produced in accordance with the UK Woodland Assurance Scheme (UKWAS) guidelines and the UK Forestry Standard. The overall aim of the plan is to maintain productive capacity, with species matched to appropriate sites, whilst protecting designated species and sites, restoring PAWS, restoring peatland habitat and create/expand native woodland and riparian habitat. Water quality management is acknowledged as one of the main LMP objectives.

Section 6.2 – Coupe Summary details areas to be restocked, new planting areas and the forecast of timber volumes and areas to be clearfelled in the first 2 plan phases. This information can be viewed spatially on **Map 5 – Management coupes, Map 6 – Future habitats**, **Map 7 – Planned operations (Felling and road construction), Map 7 – planned operation (Restocking)** and **Map 8 – New planting.**

5.1.1 Clear felling

Parts of Ben Wyvis & Strathpeffer Woodlands LMP area (e.g. Torrachilty) has been site of some significant clearfelling, beyond the restructuring objectives set by previous Forest Design Plans (FDPs), primarily due to wind damage and forest health issues *(Dothistroma Needle Blight)*. The forests within the LMP area are producing timber of varying quality, from biomass and woodfuel, to good quality softwood. There is scope for producing hardwood - the proposed significant increase in area planted with broadleaves will provide mostly environmental benefits, as they will be planted in lower densities and maintained as native and/or riparian woodland, with some potential for producing fire wood, but there are areas where productive broadleaves can be successfully established and maintained, providing good quality hardwood. The majority of clearfell over the next ten years will be driven by an attempt to maximise timber recovery on sites affected by wind damage (January 2015 and 2016) and DNB, and by restructuring. Timber production from the plan area will consist of a wide variety of timber grades from Lodgepole pine crops, suitable for wood fuel and specific export markets to green sawlogs from Sitka spruce, Scots pine, Larch and Douglas fir. Maximising production will be balanced with the need to protect the soils and hydrology on sensitive sites. Clearfell will be undertaken using harvester – forwarder systems on a standing sales basis. Due to damage caused by both windblow and DNB, some of the crops on very wet sites might not be recovered, leading to creation of deadwood habitats zones, extend of which is difficult to predict prior to the commence of harvesting operations.

5.1.2. Thinning

Forest health issues (DNB) and a need to absorb significant extra volume fallowing windblow events in 2006, 2015 and January 2016 had an impact on the thinning programme across the District. The need to prioritise recovery of valuable timber means that some of the thinning might get delayed or even abandoned. Opportunities to thin crop in some blocks covered by the Ben Wyvis & Strathpeffer Woodlands LMP are limited by soil conditions and exposure. However there are areas where thinning might and should be undertaken and it is one of objectives of this plan to identify the most productive areas and to use available resources to maximise the silvicultural potential of every productive coupe. In such areas intermediate (selective) thinning will be undertaken, at a rate that generally does not exceed marginal thinning intensity. Heavier thinning might be carried out where other objectives are to be delivered (e.g. conservation of habitats or species, visitor zoning etc.)

5.1.3 LISS

Low impact silvicultural systems (LISS), also referred to as continuous cover forestry (CCF) will be used in more sheltered locations with relatively good soils (main areas managed by CCF are located in Torrachilty, Strathgarve and Achilty), where such management approach is the best from the point of view of silviculture, environment and where it benefits landscape and local tourist business.

Non-native felling in the area managed under LISS on PAWS in Achilty. Photo: A. Baranska (NHFD)

5.1.4 New planting

Across the LMP area planting of native broadleaf species will be carried out along watercourses, to create riparian woodland and improve aquatic environment. This kind of planting will be undertaken adhering to Forest and Water Guidelines (2011), within the footprint of existing forest (where conifers were planted right to the banks of watercourses and subsequently felled). There are 4 currently open areas that were identified as suitable for new riparian woodland creation: Longart - Allt Bad-an t-Seabhaig, Longart - Allt Leacach, Torrachilty Allt Gleann Sgaithaich and Torrachilty – River Sgitheach. In addition, 1 area in Torrachilty (to the south of proposed new riparian planting at River Sgitheach), was identified as suitable for native woodland planting. Groups of native broadleaves will be planted where previous rotation crop was kept away from the watercourses, to introduce a site-appropriate seed source and establish riparian woodland, with the projected future tree density between 20% and 60%. We will plant trees in dense groups on suitable ground, avoiding low lying, waterlogged and deep peat areas. Three of the proposed new planting sites are located inside the forest blocks; therefore no impact on landscape is envisioned. One area in Longart - Allt Bad-an t-Seabhaig – is located at the northern boundary of the forest block. Planting along the burn, at the time of restocking of the adjacent coupe, will create a screen for the conifers and will link with the native woodland scheme on the privately owned land to the north of the block. Timing will depend on restocking of adjacent coupes, between 2018 and 2027.

Riparian woodland planting in wet areas will follow the Forest and Water Guidance, allowing for protective buffers as per Table 5.1. No land will be cultivated within 2m from surface water or wetland, 5m of any spring, wells or borehole; or land that is waterlogged. Details of the proposal can be found in section **6.2 Coupe summary**, and are shown on **Map 8 – New planting.**

5.2. Future habitats and species

With the exception of poorest, wettest soils, the forest across the LMP area are capable of growing timber crop of varied quality, from biomass to construction timber. Due to ongoing PAWS restoration, presence of deep peat and adjacency to designated peatland sites (e.g. north-eastern part of Torrachilty adjacent to Ben Wyvis SSSI) and economics of growing of low yield class crops on peat, the area available for producing softwood will be reduced, allowing creation of native and riparian woodland and an increase in open habitat area. Where it is possible, without compromising delivery of higher priorities, productive conifer will form the main component of the forest. **Section 6.5 – Productive Forestry Prescriptions** details the species that are suitable for each site type identified across the plan area and this will form the basis for discussion at each coupe 75% meeting.

During the plan period there will be a concerted effort to enhance and expand the native woodland component of the forest. In general, broadleaf woodland will be concentrated in both current and newly created riparian zones and in native woodland zones (PAWS), however broadleaved species will be encouraged throughout the entire forest, by retaining regeneration and establishing new seed sources by planting.

All native woodland establishment will be designed and delivered within the current FCS guidelines (Rodwell & Paterson, 1994). Planting operations will be aimed at encouraging a suitable National Vegetation Classification (NVC) woodland type appropriate to the soils and indicator vegetation encountered on site. This will be identified subsequent to harvesting operations and will generally adhere to FD fallow policy.

The restoration of riparian woodland will increase internal open space, fragmenting productive blocks, increasing forest edge habitat and allowing a windfirm network of permanent habitat corridors to develop. This in turn will allow for greater age class diversity in future rotations by providing a ‘framework’ within which reduced coupe sizes can be managed. Current climate change predictions under all climate change scenarios indicate that freshwater biota may become threatened by increases in summer temperatures and altered river flows resulting from increased precipitation. Salmonids in particular are susceptible to temperature changes (Broadmeadow, 2002). In addition soil erosion may be exacerbated by increased flood and drought cycles. The increase in dappled shade and soil stability provided by broadleaf riparian woodland will help to protect river ecosystems from the predicted temperature fluctuations predicted to result from climate change.

Deadwood is acknowledged as a very important element of the forest ecosystem, positively effecting biodiversity, carbon storage, soil nutrient cycling, energy flows, hydrological processes and natural regeneration. Retention of deadwood is an element of UKFS sustainable forest management – c. 20m3 per ha of forest/woodland. Managing deadwood in forests and woodlands – Practice Guide, Edinburgh 2012, by J. Humprey and S. Bailey, on proportions and types of deadwood will be adhered to and the position and type of deadwood required will be agreed pre-commencement on harvesting operations and reviewed at each coupe 75% meeting. Deadwood plays a vital role in the functioning of river ecosystems. Managing riparian woodland under Minimum Intervention regime will encourage a high proportion of deadwood over time, performing the following functions:

- Helping to retain water and sediments.
- Trapping and facilitating the breakdown of organic matter into food for aquatic invertebrates.
- Diversifying channels by creating pools, falls and riffles.
- Improving physical habitat structure for fish and invertebrates.

Some of the blocks within the Ben Wyvis & Strathpeffer Woodlands LMP area are very prominent in the landscape, and highly visible from popular tourist routes, therefore the extent and location of deadwood retentions should not compromise the overall appearance of the forests.

5.3 Restructuring

Forest restructuring efforts within the plan period will be driven by maximising timber recovery from crops affected by wind damage and/or Dothistroma Needle Blight. Although the extent of wind damage across the LMP area, and the scale of previous DNB and windblow related felling means that there is relatively small scope for designing felling coupes, the restock coupes are designed to be more wind firm by utilising watercourses, roads, landform, existing and created open spaces as natural boundaries. Given the scale of the task it needs to be accepted that this might not be achieved within the next rotation, but will allow for both structural diversity and will reduce the risk of catastrophic windblow in subsequent rotations.

A clearfell site and a wind damaged crop in the background – Torrachilty Forest.
Photo A. Baranska (NHFD)

5 year fallow period between felling and restocking is adopted across the District to allow a natural reduction in *Hylobius* populations. Population monitoring will be carried out prior to restocking in order to ascertain population levels as a means to reducing the use of insecticide applications during the establishment phase.

The preferred means of dealing with any adjacency issues will be through delayed felling, i.e. a coupe will not be felled until all surrounding crops are at least 2m tall. All the forest blocks within the Ben Wyvis & Strathpeffer Woodlands LMP suffered from wind damage and as a result extensive areas are proposed to be felled within next 10 years. As delaying felling of those windblown areas isn't an acceptable option (from the economic and landscape point of view), delaying of restocking is the only opportunity left to create any age diversity (although on a very limited scale). In addition, the anticipated rise in Hylobius population (it has happen in Benmore, following big scale DNB-related harvesting) is a big concern. Given the drive to minimise the use of pesticides on NFE, delaying of restock operations might be an only realistic option to establish next generation of trees. Where and when this happens, and outside tolerance limits agreed with FCS, an approval from FCS will be sought to deal with adjacency issues through delayed restocking. Please see section **6.3 – Tolerance Table** for more details.

The overall area of productive woodland will be reduced during the life of the plan through the removal of plantation from riparian and the poorest peatland sites. Restocking in productive areas will aim to maximise the productive capacity of the forest, the brief guidelines below will be followed to ensure adequate restocking:

- To obtain maximum benefits from restructuring, restocking areas will not be less than 3ha per individual shape or exceed 50ha unless forest health issues or windblow dictate otherwise.
- Restock coupes adjacent to the forest road network should be restocked to within a short distance of the forest road for at least 30% of the coupe frontage for future access.
- Non - productive broadleaf elements within productive coupes should be located where they will be of greatest benefit; in riparian zones, adjacent to open ground, other broadleaf woodland or around archaeological features to enhance the setting.
- Commercial restocking will not be undertaken on soil types 9e, 11c, 11d due to the intensive drainage regimes and high fertiliser inputs required.

Proposed restock areas can be viewed spatially on **Map 7 – CSM6 Planned operations (restocking).** The LMP proposal seeks approval for restocking of areas felled prior to plan approval and those felled within the 1st 5 years from the date of approval. The District's applies a 5 year fallow period, which generally means that all coupes felled in 2nd phase of the plan are restocked outside the approved plan period. In order to secure approval for restocking of coupes felled in 2nd 5 year phase of the plan, if shorter fallow period is applied, proposed areas of 2nd phase restock are also shown on **Map 7 – CSM6 Planned Operations (restocking).**

5.3.1 Peatland restoration

Ben Wyvis & Strathpeffer Woodlands LMP area contains areas of afforested deep peat, usually exposed and located at the outer fringes of forest blocks. Those areas tend to produce slow growing trees (mainly Lodgepole pine, but also Lodgepole/Sitka mix) of poor quality, often suffering from Dothistroma Needle Blight (DNB). Future management decisions regarding these areas are based on current UKFS requirements, The Scottish Government's Policy on Control of Woodland Removal, and the recently published FCS Practice Guide 'Deciding future management options for afforested deep peatland'.

Where deep peat coupes show poor tree growth and have the potential to be turned into net carbon sink, contribute significantly to biodiversity and hydrology interest of adjacent peatland sites, and there is a good chance of restoration being successful, we will undertake works to block

drains and furrows and remove regenerating non-native species, so that blanket bog can be restored.

On less important deep peat sites, where we judge that the peat cannot be restored effectively (due to level of damage caused by previous rotation) and where we can't expect the rate of tree growth to be sufficient to maintain positive carbon balance if restocked with conifers at commercial density, we will aim to promote wet woodland, comprising natural regeneration of tree species present on adjacent sites and native species planted at low densities. This will eventually form a permanent ecotone between bog and productive woodland.

34-year old Lodgepole pine on a deep peat site in Garbat. Presence of *Sphagnum* moss and other bog species make the site a strong candidate for peatland restoration.
Photo: A. Baranska (NHFD)

5.4 Management of open land

The management of open land is detailed in chapter **6.4 – Management Prescription Types** and is visualised in **Map 6 – Future Habitats.**

We recognise the valuable ecosystem services that are provided by open land and in particular active ombrotrophic mire systems such as blanket bog. The benefits include carbon and methane storage, water quality improvement, reduced flooding risks and increased biodiversity.

Other open areas (including priority open and archaeological features and their protective buffers) will be maintained, using grazing where appropriate, to prevent natural regeneration of trees.

Where suitable open habitat frames watercourses, we will plant native broadleaves adjacent to watercourses to improve aquatic habitat quality, as per section **6.4 – Management prescriptions**, avoiding sensitive species and habitats.

5.5 Deer Management

Wild deer on the National Forest Estate (NFE) are managed in accordance with the Scottish Government's strategy "Scotland's Wild Deer a National Approach" and under the auspices of the Code of Practice on Deer Management. All proposals and operations are tested against the criteria contained in the Joint Agency Statement on Deer 2004.

The strategy and Code of Practice takes recognition of the fact that wild deer are an asset, and integral part of Scotland's biodiversity and provide healthy food and recreational opportunities. The challenge of managing wild deer originates in a need to balance the environmental, economic and deer welfare objectives of the Scottish nation with the objectives of private landowners for forestry, agriculture, sporting and other forms of land use.

The principal legislation governing the management of deer in Scotland and hence on the NFE is the Deer (Scotland) Act 1996.

Forestry Commission Scotland's (FCS's) policy recognises that deer are capable of causing significant damage to forests and woodlands, mainly through browsing and bark stripping and can also adversely affect biodiversity through over-grazing of ground flora and the suppression of natural woodland regeneration. They are however a natural component of woodland ecosystems, they can provide recreational sporting opportunities and venison as a high quality food. The presence of deer can enhance the experience of visitors to the forest. It is therefore FCS deer policy to:

- Prevent adverse deer impact on commercial tree crops and the wider habitat. In doing so carry out deer culling in an exemplary and humane way and maintain an effective network of external deer fences where they are required;
- Work closely with relevant organisations and neighbours to make sure that there are integrated deer management plans which seek to recognise the interest of all parties and identify opportunities to reduce overall fencing by contributing towards 'strategic landscape scale fencing';
- Take opportunities to optimise income from and from sporting where this does not conflict with our primary objective of maintaining deer impacts at acceptable level;
- Produce venison in line with Quality Meat Scotland accreditation in the form of The Scottish Quality Wild Venison (SQWV) Assurance Scheme;
- Take all practical steps to slow down the expansion of non-native deer species into areas where they are not currently present

The deer population across the Ben Wyvis & Strathpeffer Woodlands LMP area comprises roe (*Capreolus capreolus)*, red (*Cervus elaphus),* and sika deer (*Cervus Nippon).* Red deer is the predominant species in the area, and up to date there is no evidence of Sika and Red deer interbreeding. Presence of deer creates obvious challenges for FES and our objectives in the area. This is compounded by the fact that over the coming years the restocking programme will be increasing along with a higher percentage of broadleaves being planted. The most recent survey estimates deer numbers within the Ben Wyvis & Strathpeffer Woodlands LMP area to be 5 to 7 deer per 100 ha. This is close to the FES's target density of 5 deer per 100 ha. Please see **Map 9 – Deer management** for details of deer species distribution and areas to be restocked within next 10 years. External boundary fences of Grudie and Achilty blocks are deer-fences. The remaining blocks have a mix of deer and stock fences, bur are not enclosed. Ben Wyvis & Strathpeffer Woodlands LMP area falls within area covered by the Association of Deer Management Groups and is split between North Ross Deer Management Group (DMG):Torrachilty, Strathgarve, Ord Hill, Blackmuir, Jamestown, Garbat & Strathrannoch; West Ross DMG: Longart, Corriemoillie and Grudie; and Strathconon DMG: South Garve Hill and Achilty. Forest blocks within the LMP area are currently affected by one FES Wildlife Management Unit (WMU) - Wester Ross, covered by Deer Management Plan.

The current WMUs structure is has been re-aligned to reflect the change to the District's Land Management structure. Currently FES Deer Management Plans contain mainly cull data over a period of years and deer density information, usually noting the overriding objectives. Revision of this approach in underway and Deer Management Planning is moving towards integration with the Land Management Planning. This approach will become more evident in the coming years. The individual Deer Management Plans for Wester Ross WMU is held at the North Highland Forest District Office and is available on request.
Deer culling in area covered by the Ben Wyvis & Strathpeffer Woodlands LMP is carried out by contractors; there are however deer management permissions in place for Strathrannoch and Carn Gorm area.

Forest Enterprise Scotland is working in partnership with SNH to control deer numbers on Ben Wyvis National Nature Reserve (NNR). This is part of a Control Agreement under section 7 of the Deer (Scotland) Act 1996.
FCS records Deer Vehicle Collisions (DVC) in the Wildlife Management System, which is updated by a deer controller in giver area, and the information is passed to SNH. The risk of DVCs is reduced on property boundaries through a combination of sensibly placed deer fencing and active deer culling. FCS uses SNH authorisation to achieve these culls as appropriate. These authorisations are as per the 1996 Deer (Scotland) Act, Part III, paragraph 18 point 2 with regard to night shooting, any Part II, paragraph 5 point 6 with regard to culling on unenclosed land. In addition to this, FCS uses the general licence for deer culling where required. Where necessary, FCS contributes to road safety groups or panels. This has involved a significant amount of work in the past.

Low grazing pressure will be tolerated, in particular around areas considered to 'buffer' the wider forest. These buffer areas may consist of either managed open space (deer 'lawn' areas) or planted woodland near existing forest edge where browsing damage will be accepted.

Development of a proportionate zone of browsed vegetation in these areas – either commercial density conifers or broadleaved species capable of coppice growth - also carries wider biodiversity benefits and is accepted as a consequence of efforts to manage deer populations without resorting to extensive fencing.

As the forest plan progresses the focus on deer management will change to ensure favourable conditions are present for the establishment of native broadleaves. It is believed that a density of 5 deer per 100ha or lower will be required for broadleaf establishment. Operational policies and procedures are held at the Forest District Office.

The deer management data is spatially represented on **Map 9 – Deer management.**

6.2 Coupe Summary

Coupe Number & Grid Reference for Restock Coupes	Area of Felling (Ha)	Predicted Volume (m3 OB)	Proposed Restock Year	Area to Restock Within Plan Period (gross) (ha)	Comments
Coupe 1 Restock - NH41056894	(-)	(-)	2020	18.49	Productive conifer woodland
			2020	9.32	Riparian woodland
Coupe 2 Restock - NH41616826	(-)	(-)	2019	22.64	Productive conifer woodland
			2019	6.01	Riparian woodland
Coupe 3 Restock - NH43346841	(-)	(-)	2017	17.12	Native woodland
			2017	23.03	Productive conifer woodland
			2017	1.64	Riparian woodland
Coupe 4 Restock - NH40646763	(-)	(-)	2019	18.72	Productive native woodland
Coupe 5 Restock - NH40016655	(-)	(-)	2018	18.85	Productive conifer woodland
			2018	2.76	Riparian woodland
Coupe 6 Restock - NH39586579	(-)	(-)	2021	8.99	Productive conifer woodland
			2021	1.30	Riparian woodland
Coupe 7 Restock - NH39656416	(-)	(-)	2020	8.69	Productive conifer woodland
			2020	3.09	Riparian woodland
Coupe 8 Restock - NH39466308	(-)	(-)	2017	7.45	Productive conifer woodland
Coupe 9 Restock - NH40696367	(-)	(-)	2021	7.49	Productive conifer woodland
			2021	3.00	Riparian woodland
Coupe 10 Restock - NH36746290	(-)	(-)	2019	21.17	Productive conifer woodland
Coupe 11 Restock - NC49520112	(-)	(-)	2018	32.20	Productive conifer woodland
			2018	20.21	Productive native woodland
			2018	1.18	Riparian woodland
Coupe 12 Restock - NH41615983	(-)	(-)	2018	7.23	Productive native woodland (broadleaves)
			2018	6.93	Productive native woodland (SP)
			2018	0.78	Native woodland
Coupe 13 Restock - NH43526012	(-)	(-)	2020	23.74	Productive conifer woodland
			2020	4.45	Riparian woodland
Coupe 14 Restock - NH42525935	(-)	(-)	2020	4.14	Native woodland
			2020	0.53	Riparian woodland
Coupe 15 Restock - NH42595905	(-)	(-)	2021	2.30	Native woodland
Coupe 16 Restock - NH43315917	(-)	(-)	2020	5.19	Native woodland
Coupe 17 Restock - NH44575966	(-)	(-)	2019	5.29	Productive conifer woodland
			2022	2.28	Native woodland
			2022	3.57	Riparian woodland
Coupe 18 Restock - NH44286103	(-)	(-)	2020	20.69	Productive conifer woodland
			(-)	1.58	Open
Coupe 19 Restock - NH44706103	(-)	(-)	2022	23.94	Productive conifer woodland
			2022	2.11	Open
Coupe 20 Restock - NH45736015	(-)	(-)	2020	54.51	Productive conifer woodland
			2020	7.14	Native woodland
			2020	1.39	Riparian woodland
Coupe 21 Restock - NH46035963	(-)	(-)	2020	44.73	Riparian woodland
			2020	2.49	Native woodland
Coupe 22 Restock - NH46155898	(-)	(-)	2020	9.51	Productive conifer woodland
			2020	1.20	Riparian woodland
Coupe 23 Restock - NH47095922	(-)	(-)	2021	13.26	Productive conifer woodland
			2021	0.60	Riparian woodland
			2021	0.63	Native woodland
Coupe 24 Restock - NH47075850	(-)	(-)	2018	9.48	Productive conifer woodland
			2018	6.44	Native woodland
Coupe 25 Restock - NH47326071	(-)	(-)	2022	11.76	Productive conifer woodland
			2022	4.64	Productive native woodland
			2022	9.04	Riparian woodland
			2022	1.60	Native woodland
Coupe 26 Restock - NH45926193	(-)	(-)	2021	24.42	Productive conifer woodland
Coupe 27 Restock - NH48356182	(-)	(-)	2021	57.20	Productive conifer woodland
			2021	0.99	Riparian woodland
Coupe 28 Restock - NH48576126	(-)	(-)	2018	32.95	Productive conifer woodland
			2018	2.16	Riparian woodland
			(-)	2.36	Open
Coupe 29 Restock - NH49466171	(-)	(-)	2019	54.99	Productive conifer woodland
			2019	2.36	Riparian woodland
Coupe 30 Restock - NH46175707	(-)	(-)	2018	21.97	Productive native woodland
Coupe 31 Restock - NH49035748	(-)	(-)	2019	20.62	Productive conifer woodland
			2019	3.46	Native woodland
Coupe 89 Restock - NH45496199	(-)	(-)	2022	7.96	Riparian woodland
			(-)	2.2	Open
Restock Coupes Summary				**771.91**	

Coupe Number & Grid Reference for Phase 1 (red) Coupes	Area of Felling (Ha) (gross)	Predicted Volume (m3 OB)	Proposed Restock Year	Area to Restock Within Plan Period (gross) (ha)	Comments
Coupe 1 Felling - NH42676988	19.88	Not forecastable	2019	19.88	Open (peatland restoration)
Coupe 32 Restock					
Coupe 2 Felling - NH38846910	38.47	15956.00	2025	37.24	Productive conifer woodland
Coupe 33 Restock			(-)	1.23	Riparian woodland
Coupe 3 Felling - NH38196799	67.70	33572.00	2026	67.24	Productive conifer woodland
Coupe 34 Restock			2026	0.46	Riparian woodland
Coupe 4 Felling - NH40826830	7.32	3424.00	2026	6.70	Productive native woodland
Coupe 35 Restock			2026	0.63	Productive conifer woodland
Coupe 5 Felling - NH40996753	3.9	3018.00	2025	1.97	Productive native woodland
Coupe 36 Restock			2025	1.03	Productive conifer woodland
			2025	0.90	Riparian woodland
Coupe 6 Felling - NH41326697	16.59	8120.00	2023	13.01	Productive conifer woodland
Coupe 37 Restock			2023	3.58	Riparian woodland
Coupe 7 Felling - NH40386590	4.94	1866.00	2025	3.14	Productive conifer woodland
Coupe 38 Restock			2025	0.95	Riparian woodland
			2025	0.86	Native woodland
Coupe 8 Felling - NH29326312	77.60	Not forecastable	2025	35.78	Productive conifer woodland
Coupe 59 Restock			2025	15.28	Riparian woodland
			2025	14.43	Native woodland
			(-)	12.11	Open
Coupe 9 Felling - NH36846406	33.92	7196.00	2026	31.46	Productive conifer woodland
Coupe 39 Restock			2026	1.76	Native woodland
			(-)	0.70	Open
Coupe 10 Felling - NH38786318	29.40	6475.00	2024	13.92	Productive conifer woodland
Coupe 40 Restock			2024	3.68	Productive native woodland
			2024	8.13	Native woodland
			2024	3.26	Riparian woodland
			(-)	0.41	Open
Coupe 11 Felling - NH36236325	5.18	1316.00	2024	5.18	Native woodland
Coupe 41 Restock					
Coupe 12 Felling - NH35636283	15.49	3188.00	2024	14.71	Productive conifer woodland
Coupe 42 Restock			2024	0.78	Native woodland
Coupe 13 Felling - NH45396110	31.69	17918.00	2023	27.82	Productive conifer woodland
Coupe 43 Restock			2023	3.87	Riparian woodland
Coupe 14 Felling - NH46116157	21.38	19245.00	2022	17.61	Productive conifer woodland
Coupe 44 Restock			2022	3.77	Riparian woodland
Coupe 15 Felling - NH46636303	114.67	16411.00	2023	36.28	Riparian woodland
Coupe 47 Restock			2023	14.12	Peatland edge woodland
			(-)	64.26	Open (peatland restoration)
Coupe 16 Felling - NH47366391	53.00	1497.00	2023	7.61	Riparian woodland
			2022	8.43	Riparian woodland
Coupe 49 Restock			(-)	45.39	Open (peatland restoration)
Coupe 17 Felling - NH48536440	87.12	Not forecastable	(-)	87.12	Open (peatland restoration)
Coupe 50 Restock					
Coupe 18 Felling - NH56619818	61.46	6795.00	2025	25.38	Peatland edge woodland
Coupe 51 Restock			2025	18.76	Riparian woodland
			2025	17.32	Productive conifer woodland
Coupe 19 Felling - NH47736252	33.94	5158.00	2023	30.15	Productive conifer woodland
Coupe 48 Restock			2023	3.58	Peatland edge woodland
			(-)	0.21	Open
Coupe 20 Felling - NH49636093	10.31	3875.00	2026	6.97	Productive conifer woodland
Coupe 53 Restock			2026	3.34	Riparian woodland
Coupe 21 Felling - NH47746099	53.05	16572.00	2023	38.87	Productive conifer woodland
Coupe 52 Restock			2023	13.16	Riparian woodland
			2023	1.02	Productive native woodland
Coupe 22 Felling - NH46836095	6.11	4013.00	2023	2.85	Productive conifer woodland
Coupe 46 Restock			2023	0.72	Productive native woodland
			2023	2.54	Riparian woodland
Coupe 23 Felling - NH46356095	36.77	12005.00	2023	26.66	Productive conifer woodland
Coupe 45 Restock			2023	6.59	Riparian woodland
			2023	1.05	Productive native woodland
			2023	2.47	Native woodland
Coupe 24 Felling - NH47865986	24.84	11048.00	2023	16.40	Productive conifer woodland
Coupe 54 Restock			2023	6.59	Riparian woodland
			2023	1.16	Native woodland
			(-)	0.69	Open
Coupe 25 Felling - NH47115890	25.51	10008.00	2024	23.32	Productive conifer woodland
Coupe 55 Restock			2024	2.19	Native woodland
Coupe 26 Felling - NH45635886	29.38	7363.00	2026	29.38	Productive conifer woodland
Coupe 56 Restock					
Coupe 27 Felling - NH45155716	3.03	587.00	2021	3.03	Recreational woodland
Coupe 57 Restock					
Coupe 28 Felling - NH44445778	2.23	1753.00	2026	2.14	Native woodland
Coupe 60 Restock			(-)	0.09	Open (powerline buffer)
Coupe 29 Felling - NH41635650	25.14	13749.00	2024	20.33	Productive conifer woodland
Coupe 59 Restock			2024	2.85	Riparian woodland
			2024	1.96	Native woodland
Coupe 30 Felling - NH43795514	7.75	4245.00	2026	5.38	Productive native woodland
Coupe 61 Restock			2026	1.69	Native woodland
			(-)	0.68	Open
RED COUPES SUMMARY	**947.77**	**236373**		**716.24**	

Coupe Number & Grid Reference for Phase 2 (orange) Coupes	Area of Felling (Ha) (gross) (Gross)	Predicted Volume (m3 OB)	Proposed Restock Year	Area to Restock Within Plan Period (gross) (ha)	Comments
Coupe 31 Felling - NH39817130 *Coupe 62 Restock*	16.37	6787.00		(-)	Fallow - to restock outwith plan period
Coupe 32 Felling - NH40347024 *Coupe 63 Restock*	87.89	29632.00		(-)	Fallow - to restock outwith plan period
Coupe 33 Felling - NH42457022 *Coupe 64 Restock*	50.04	14309.00		(-)	Fallow - to restock outwith plan period
Coupe 34 Felling - NH42826734 *Coupe 65 Restock*	83.61	24707.00		(-)	Fallow - to restock outwith plan period
Coupe 35 Felling - NC48360241 *Coupe 66 Restock*	9.98	4763.00		(-)	Fallow - to restock outwith plan period
Coupe 36 Felling- NH39676385 *Coupe 67 Restock*	40.66	10576.00		(-)	Fallow - to restock outwith plan period
Coupe 37 Felling - NH38116380 *Coupe 69 Felling*	38.04	9538.00		(-)	Fallow - to restock outwith plan period
Coupe 38 Felling - NH36516367 *Coupe 68 Restock*	32.44	9134.00		(-)	Fallow - to restock outwith plan period
Coupe 39 Felling - NH29906281 *Coupe 84 Restock*	55.10	Not forecastable		(-)	Fallow - to restock outwith plan period
Coupe 40 Felling - NH40636248 *Coupe 70 Restock*	16.13	6669.00		(-)	Fallow - to restock outwith plan period
Coupe 41 Felling - NH40806097 *Coupe 71 Restock*	23.58	16741.00		(-)	Fallow - to restock outwith plan period
Coupe 42 Felling - NH41886014 *Coupe 72 Restock*	38.18	7867.00		(-)	Fallow - to restock outwith plan period
Coupe 43 Felling - NH43095994 *Coupe 73 Restock*	36.25	8569.00		(-)	Fallow - to restock outwith plan period
Coupe 44 Felling - NH44826052 *Coupe 74 Restock*	37.02	10979.00		(-)	Fallow - to restock outwith plan period
Coupe 45 Felling - NH48166376 *Coupe 75 Restock*	66.43	10346.00		(-)	Fallow - to restock outwith plan period
Coupe 46 Felling - NH48916367 *Coupe 76 Restock*	70.02	11348.00		(-)	Fallow - to restock outwith plan period
Coupe 47 Felling - NH47856318 *Coupe 77 Restock*	25.26	5029.00		(-)	Fallow - to restock outwith plan period
Coupe 48 Felling - NH50386163 *Coupe 78 Restock*	60.09	17307.00		(-)	Fallow - to restock outwith plan period
Coupe 49 Felling - NH48426078 *Coupe 79 Restock*	38.60	15085.00		(-)	Fallow - to restock outwith plan period
Coupe 50 Felling - NH47106035 *Coupe 80 Restock*	9.71	3630.00		(-)	Fallow - to restock outwith plan period
Coupe 51 Felling - NH44805984 *Coupe 81 Restock*	19.70	5199.00		(-)	Fallow - to restock outwith plan period
Coupe 52 Felling - NH45885718 *Coupe 82 Restock*	14.85	6400.00		(-)	Fallow - to restock outwith plan period
Coupe 53 Felling - NH44195751 *Coupe 87 Restock*	4.74	4385.00		(-)	Fallow - to restock outwith plan period
Coupe 54 Felling - NH43335720 *Coupe 86 Restock*	1.42	1036.00		(-)	Fallow - to restock outwith plan period
Coupe 55 Felling - NH41075650 *Coupe 85 Restock*	66.97	33393.00		(-)	Fallow - to restock outwith plan period
Coupe 56 Felling - NH42805557 *Coupe 88 Restock*	4.55	2995.00		(-)	Fallow - to restock outwith plan period
Coupe 57 Felling - NH48065685 *Coupe 83 Restock*	22.16	11546.00		(-)	Fallow - to restock outwith plan period
ORANGE COUPES SUMMARY	**969.79**	**287970**		(-)	
FULL SUMMARY	**1917.56**	**524343**			

Block Name & Grid Reference for New Planting	Area of Felling (Ha) (gross)	Predicted Volume (m3 OB)	Proposed Planting Year	Area to Restock Within Plan Period (gross) (ha)	Comments
Longart Allt Bad-an t-Seabhaig NH 3800 6840	(-)	(-)	2026	22.09	Riparian woodland
Longart Allt Leacach NH 3936 6602	(-)	(-)	2021	6.96	Riparian woodland
Torrachilty Allt Gleann Sgathaich NH 4542 6192	(-)	(-)	2022	2.92	Riparian woodland
Torrachilty River Sgitheach NH 4933 6206	(-)	(-)	2025	16.96	Riparian woodland
Torrachilty River Sgitheach NH49406203	(-)	(-)	2018	6.34	Native woodland
New Planting Summary				**55.27**	

6.3 Tolerance table

	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Wind throw or environmental response	Adjustment to road lines
FC Approval not normally required (record and notify FC)	<10% of coupe size	Up to 5 planting seasons after felling (allowing fallow periods for Hylobius).	Change within species group E.g. Scots pine to birch, Non-native conifers e.g. Sitka spruce to Douglas fir, Non-native to native species (allowing for changes to facilitate Ancient Woodland policy).	**Low sensitivity area** The affected area where wind throw, disease or other environmental factors represents more than 60% of the crop, the area including standing trees within the affected area may be felled.	**Low Sensitivity Area** • Creation of turning points/ loading bays. • Deviation of less than 50m either side of the predicted centre line of the road/ track in low sensitivity areas. **High Sensitivity Area** Deviation less than 25m in either direction from the predicted centre of track
Approval by exchange of letters and map	10-15% of coupe size	5 years +	Change of coupe objective likely to be consistent with current policy (e.g. from productive to open, open to native species).	**Low sensitivity area** • As above to include up to 3ha of healthy crop beyond the affected area to a wind firm or reasonable edge. • The affected area where wind throw or disease is less than 60% of the crop. **High Sensitivity Areas** The affected area where wind throw or disease is more than 60% of the crop.	**Low Sensitivity Area** Deviation of 50 - 100m metres either side of the predicted centre of road in areas of low sensitivity. **High Sensitivity Area** Deviation of 25-50m in either direction from the predicted centre line of road or track
Approval by formal plan amendment	>15% of coupe size		Major change of objective likely to be contrary to policy, E.g. native to non-native species, open to non-native,	**Low sensitivity area** Greater than 3Ha of healthy crop required to reach a wind firm or reasonable edge beyond the affected area. **High sensitivity area** • The affected area where wind throw or disease is less than 60% of the crop. • Felling of standing trees or healthy crop beyond the affected area.	Deviations exceeding the above.

6.4 Management Prescription Types

The future habitat management for North Highland FD Land Management Plans is visualised on the plan maps as zones of proposed management prescriptions. These management prescription types are detailed in the table below and further detail is provided in **6.5 – Productive Forestry Prescriptions** and **6.6 – Native Woodland Prescriptions**.

Management Prescription Type	Stocking Details at Initial Planting	Management Type Detail
Productive Conifer Woodland (See Section 6.5 for detailed species prescriptions)	2500 – 3500 stems per hectare 70% area conifer species 20% area open space 10% area broadleaf species	Primarily comprising conifer species in a silvicultural mixture appropriate to site soils and climate. The aim of this management type is to produce softwood by clearfelling for sawlogs, small roundwood and biomass markets. The broadleaf element will generally be concentrated around archaeological and recreation sites, wet ground areas, boundaries with open ground and/or roads; however on sites with limited nutrition an increased broadleaf element will be considered for inclusion as part of the silvicultural mixture to maintain site fertility. Open ground will be incorporated around archaeological and recreation sites and on unplantable (for example rocky) ground throughout the coupe. Herbivores will be managed effectively and the sites will be monitored using the FCS Stocking Density Assessment protocol.
Productive Broadleaf Woodland (See Section 6.5 for detailed species prescriptions)	3000 – 6000 stems per hectare 60% area broadleaf species 10% open space 30% native species (including conifers where appropriate)	Primarily comprising broadleaf species in a silvicultural mixture appropriate to site soils and climate. The aim of this management type is to produce hardwood by clearfelling for roundwood and biomass markets including local firewood sales. The conifer element (if applicable) will generally be concentrated where it will offer biodiversity gains (for example juniper close to powerline wayleaves) but on suitable sites will also form a productive element. This management type will be the preferred option for better soils capable of producing hardwood. Open ground will be incorporated around archaeological and recreation sites and on unplantable (for example rocky) ground throughout the coupe. Herbivores will be managed effectively (additional internal fencing will be considered) and the sites will be monitored using the FCS Stocking Density Assessment protocol.
Productive Native Woodland (See Section 6.5 for detailed species prescription)	2700 – 5000 stems per hectare 80% of area trees (both broadleaf and conifer; % depending on site condition) 20% open space	This management type will be proposed on relatively fertile PAWS, and where strictly conifer or broadleaf prescription is unlikely to maximise the productive potential of the site. This management type will generally be used on better soils, with the aim to produce both softwood and hardwood, for roundwood and sawlogs where possible, but also biomass and local firewood market. Such approach will allow for meeting PAWS restoration objective without compromising the productivity of the site. Species selection will depend on detailed site investigation following harvesting operations. Open ground will be incorporated around archaeological and recreation sites and on unplantable (for example rocky) ground throughout the coupe. Herbivores will be managed accordingly, and the sites will be monitored using the FCS Stocking Density Assessment protocol.
Native Woodland (See Section 6.6 for detailed species prescriptions)	Minimum 1600 stems per hectare 10% to 60% native broadleaves Up to 70% Scots pine (percentage depending on suitability of the ground) 20% open space or 80% area native broadleaves 20% open space	Where this management type is proposed native tree and shrub species will be established at lower density mosaics reflecting the appropriate NVC woodland type for the local soils and climate as detailed in Section 6.6 – Native Woodland Prescriptions. Primarily established with the aim of increasing biodiversity, enhancing recreation and education opportunities and potentially producing low quality timber on long rotations (EG for firewood markets) this woodland will be eventually create a woodland stand structure that contains a range of different age classes, both mature and veteran trees with deadwood and some permanent open areas at the margins and internally. A light level of grazing by herbivores sufficient to allow regeneration of a characteristic range of trees and shrubs and a well-developed field layer will be tolerated although deer control will be sufficient to allow establishment of transplants and eventually progression to regeneration. Although non-native tree species will generally be absent, they will be tolerated at low levels (less than 15% of species by area).

Riparian Woodland (See Section 6.6 for detailed species prescriptions)	800- 1600 stems per hectare 60% area native species 40% open space Average width 30m either side of the water course, varying where the management needs, terrain or landscape design require different approach.	The aim of this woodland type is to provide a significant buffer between productive forestry and watercourses and waterbodies that will increase biodiversity and enhance riparian and aquatic habitats. The species that are planted in riparian zones will be selected to match the NVC community for the appropriate soils type and detail of the proposed habitat prescriptions is contained in Section 6.6. Native tree and shrub species will be established in clusters of variable density plantings appropriate to site type and framing other significant habitat (e.g. water vole grassland). A light level of grazing by herbivores sufficient to allow regeneration of a characteristic range of trees and shrubs and a well-developed field layer will be tolerated although deer control will be sufficient to allow establishment of transplants and eventually progression to regeneration. The long term aim is that this habitat type will develop to form a permanent network of 'natural reserve' habitat so the fluctuation of levels of open space and woodland will be tolerated although prolific conifer regeneration that will compromise overall aims will be removed.
Torrachilty (Contin) car park area	Number of stems per hectare depending on the detailed design Between 20% to 50% trees (both broadleaf and conifer, native and non-native) Between 50% to 80% open	We're proposing to plant a low density woodland, of both native and non-native species, to create an arboretum type of woodland, where species composition, planting density and future size of trees will provide an interesting and stimulating environment, without compromising safety of visitors and visitor facilities (such as engineered paths, carpark, picnic area). This approach is only adopted as repeated incidents of windblow had caused loss of stability to the existing crop to the degree that the only feasible management option is felling and restocking. The detailed design for the area, including information on the number of stems/ha to be planted will be provided, and consulted upon, at the workplan stage of the planning process.
Low Impact Silvicultural Systems (including Riparian LISS)	Dependent on the individual system chosen and the seed sources available	LISS is proposed as a prescription where climate is suitable and where it will achieve specific aims – for example addressing water or soil quality/stability issues, enhancing landscape value and/or contributing to biodiversity enhancement. As forests move through the initial thinning regimes a decision will be taken as to which LISS is most appropriate for the site and the management aims. Most commonly shelterwood systems will be practised, avoiding clearfelling areas larger than 2 hectares. Full management prescriptions are contained in the coupe workplan for each LISS area.
Minimum intervention	Dependent on individual area	Minimum intervention is proposed where the land is predominantly wooded or progressing towards woodland cover. The aim of this management type is to develop semi-natural habitats in the future. Depending on how the woodland structure develops, it might be desirable to change the management type, so some thinning and/or group felling can take place to diversify stand or species composition. Use of MI classification allows this change to be made in the future as MI doesn't have to apply in perpetuity.
Natural Reserve	Dependent on individual area	A natural reserve is predominantly wooded and permanently identified and is sited in a location where it will be of particularly high biodiversity benefit (for example riparian woodland). All NRs will be managed by minimum intervention unless alternative management has higher conservation or biodiversity value. Any management operations proposed will solely be to protect the integrity of the habitat (for example removal of invasive non-native regeneration). The function of NRs is to provide continuity of habitat to allow sedentary species to establish and thrive. They provide reservoirs of permanent habitat from which more mobile species can expand into other areas of woodland. The two types of NR proposed will be based on semi-natural woodland origin and on plantation woodland origin. It is intended that most riparian woodland will eventually be adopted as natural reserve although with the management required to establish the appropriate species this cannot yet be the case.
Long Term Retention	Dependent on individual area	A LTR is a tree or stand of trees retained for environmental benefit significantly beyond the age or size generally adopted by North Highland Forest District. LTR's are proposed because the trees (not the land they occupy) are of significant landscape or biodiversity benefit. An LTR will be proposed where it is desirable to retain the existing stand beyond normal economic maturity for benefits noted, but there is no imperative to retain permanent woodland cover once the existing stand has fulfilled its objective. In most cases, when selected, LTRs will comprise a stand of stable standing trees however there may be cases where it is desirable to retain large patches of windblow to increase structural diversity and deadwood volume. This latter type of LTR, if present, will be sited where landscape is a low or insignificant priority.
Peatland restoration	(-)	This management type aims to restore valuable blanket bog habitat to favourable condition and is to be applied on sites where the likelihood of success is high (poor tree growth rate in previous rotation combined with significant peat depth, high water table, presence of Sphagnum etc.) and where potential environmental benefits are highest (high probability of being turned into net carbon sink, adjacency to and/or hydrological links with designated peatland sites and/or non-designated active bogs, adjacency to high sensitivity sites for dunlin and golden plover). After removal of the crop (depending on size of the trees by either felling or mulching) works to block drains and furrows and to

		remove regenerating non-native trees will be undertaken. Rising water table is likely to inhibit natural regeneration of tree species, but regeneration of native broadleaves (up to 10% of the area) will be accepted, primarily associated with drier knolls (significantly above the water table) and watercourses (where presence of native trees benefits riparian habitats).
Open Land	(-)	Land is maintained as open habitat for biodiversity gain where specific species or habitat types will benefit or where another land management objective exists (e.g. agriculture – crofting tenure). Open land will also be specifically prescribed where large scale heritage sites, not able to be accommodated in the standard open space of other habitat types needs protected. Open space will form a key element of native and riparian woodland expansion. Open land as defined in this LMP will comprise a maximum of 20% broadleaf woodland or 10% broadleaf woodland and 10% conifer woodland, primarily associated with open hill and/or and improving riparian habitats.

NB:

- All procurement of planting material will adhere to the current guidance (FCS, 2007) on the sourcing of forest reproductive materials.
- All operations will adhere to the Controlled Activities Regulations 2005 General Binding Rules with respect to appropriate buffer strips between restock areas and water bodies.
- It is anticipated that initial applications of potassium, phosphate and nitrogen may be required to establish productive conifer crops. Any requirement for detailed remedial fertiliser programmes will be decided following foliar analysis. Heather control and silvicultural mixtures will be used as a first alternative to fertiliser application. Any initial or remedial fertiliser programmes will adhere to current industry best practice and follow FC Guidelines on water catchment protection. Restocking will be carried out with the principles of pesticide and fertiliser reduction foremost.

6.5 Productive Forestry Prescriptions

Soil Group	Soil types relevant to North Highland FD	Characteristics	Species Prescription for Commercial Restocking●
1	Brown earth	Soils with typically good aeration and drainage throughout the profile and well-incorporated organic matter. These soils range from very rich to poor and usually allow deep rooting. Likely vegetation to be encountered includes broad leaved grasses, (e.g. Yorkshire fog, Bent), bracken, bramble, foxgloves, violets and a diverse range of herbs.	Douglas Fir on Poor (must be without heather) to Rich fertility with Moist to Dry soil moisture. Desirable intimate or group mixture; European Larch*, Norway Spruce or Western Red Cedar. Generally in sheltered areas with sufficient rainfall Sitka or Norway Spruce on Poor to Medium fertility with Wet to Fresh soil moisture. Desirable intimate or group mixture; each other or European/Hybrid Larch* Scots Pine in Podzolised areas on Poor to Medium fertility with Moist to Dry soil moisture. Desirable intimate or group mixture; Japanese/Hybrid or European Larch* European Larch* on Medium to Rich fertility with moist to Moderately Dry soil moisture. Desirable intimate or group mixture; Scots Pine or Douglas Fir Japanese/Hybrid Larch* on Poor to Medium fertility with Very Moist to Fresh moisture. Desirable intimate or group mixture; Scots Pine Sycamore on Medium to Rich fertility with Moist to Fresh soil moisture. Desirable intimate mixture: Ash† or European Larch* Where improved climatic conditions allow: Sessile Oak on Medium to Rich fertility with Moist to Slightly Dry soil moisture. Pedunculate Oak (Local seed source if possible) on Medium to Rich with Very Moist to Fresh soil moisture. Desirable intimate/group or blocky mixtures include; Norway Spruce, European Larch*, Western Red Cedar, Silver Birch or Ash† Silver Birch on Poor to Medium with Very Moist to Fresh soil moisture. Desirable intimate or group mixture: Oak or Scots Pine Ash† on Rich fertility with moist to Fresh soil moisture and less acidic sites. Mix in groups with; Sycamore, Oak or Beech
3	Podzols	Develop on unfertile acid soils with high rainfall where nutrients are flushed into the lower horizons of the soil profile. Very poor fertility. Induration or an impenetrable pan will prevent good drainage, resulting in a need to break this impediment with suitable cultivation that will allow freer draining and greater rooting depth. Vegetation common to these soils are ericaceous plants, grasses including Wavy hair, Matt and Purple moor grass. Light bracken and feather mosses may also be present.	Scots Pine with Moist to Dry soil moisture. Desirable mixture; intimate mixture with Hybrid Larch* Sitka Spruce with Wet to Moist soil moisture. Mix with; Lodgepole Pine in wetter areas or Japanese/Hybrid Larch* Japanese/Hybrid Larch* with Very Moist to Fresh soil moisture Where improved climatic conditions allow: Sessile Oak (not on 3m) with Moist to Fresh soil moisture. Desirable mixture; Hybrid Larch*, Scots Pine or limited Norway Spruce
4	Ironpans	Develop on free draining acid soils with high rainfall. The transfer of aluminium and iron in solution down through the soil profile develops an ironpan that is impervious to water and root penetration. Vegetation and fertility is similar to that of Podzols above	Scots Pine with Moist to Dry soil moisture. Desirable mixture; Japanese/Hybrid Larch* Japanese/Hybrid Larch* with Very Moist to Fresh soil moisture. Desirable mixture; Scots Pine Lodgepole Pine in elevated areas with Wet to Fresh soil moisture Sitka or Norway Spruce (4 & 4b) with Wet to Fresh soil moisture. Desirable intimate or group mixture; Lodgepole Pine in wetter areas or Japanese/Hybrid Larch* or Scots Pine. Sycamore (4b only) with Moist to Fresh soil moisture. Consider intimate mixture with Japanese/Hybrid Larch* Breaking of the ironpan is desirable; so as to allow drainage of the site and a potential increase in soil rooting volume and nutrient availability, therefore cultivation that includes amelioration of the ironpan will be considered.
5	Groundwater gleys	Dominant vegetation is commonly Tufted hair grass, Willows and herbs. Occurring where a shallow water table causes waterlogging and therefore subject to compaction and poorly oxygenated. The soil is permeable but is affected by a fluctuating ground-water table. Moderate nutrient availability.	These areas are generally presumed to be open or riparian zones. Productive planting will be outwith the 30m buffer zone of native woodland. Where rooting depth is adequate: Sitka or Norway Spruce on Medium to Rich fertility with Very Wet to Moist soil moisture. Consider adding blocks of Downy Birch and Alder Intimate mix of Downy Birch and Common Alder on Poor fertility with Very Wet to Moist soil moisture

6	Peaty Gleys	Very Poor to Rich nutritional availability, these soils are indicated by Purple moor grass, Calluna and Cross-leaved heath, with sphagnum prevalent in the North and West.	Sitka Spruce on Poor to Medium fertility with Wet to Fresh moisture. Experience in North Highland suggests this crop will rarely establish as a pure stand without fertiliser input. Intimate mix with Lodgepole Pine in wetter and poorer areas or with Japanese/Hybrid Larch* in more Podzolised areas. Consider adding blocks of Downy Birch Downy Birch on Poor to Medium fertility with Very Moist to Fresh soil moisture High winter water table can be expected and good drainage will be required to achieve best results.
7	Surface Water Gleys	Differing from groundwater gleys in that waterlogging is caused not by a high water table, but by lateral surface-water movement through the soil profile developing a seasonally fluctuating water table. Resulting anaerobic conditions will restrict rooting. Indicative vegetation includes Tussock grass and Creeping Buttercup. Again poor to moderate nutritional availability can be expected.	Sitka or Norway Spruce on Medium fertility with Wet to Fresh soil moisture. Desirable mixture; each other, Japanese/Hybrid Larch* or with Lodgepole Pine in wetter poorer areas Where improved climatic conditions allow: Pedunculate Oak on 7b Medium to Rich fertility with Moist to Fresh soil moisture. Desirable group or blocky mixture; Norway Spruce Drainage will be required along with micro site cultivation such as mounding.
8	Juncus bog	Rushes are prevalent. A shallower peat type, nutrient rich and containing some mineral grains. Peat is black in colour.	FC Forests and Peatland Habitats Guideline Note (2000) and FCS Practice Note 'Forestry on peatland habitats' (2014) states that : 'where the site is a priority for habitat restoration on ecological grounds (to open habitat or native/bog woodland) , conventional restocking will not be required'; 'where site is not priority for restoration to open peatland or bog/other type of native woodland and it's unlikely to support tree growth greater than Yield Class 8 (Sitka spruce), the appropriate option will be to create peatland edge woodland' 'where the site is not a priority for restoration and it's likely to support rapid enough tree growth to compensate for greenhouse gas losses from the soil – understood to be Yield Class 8 or above for Sitka Spruce – then the conventional restocking should be undertaken' It may be therefore considered that more fertile, flushed peats and areas of deeper peat where hydrology has been irreversibly compromised will remain suitable for restocking. Where areas of deeper peat are encountered in intimate mosaic with more favourable soils Sitka Spruce (QSS) will be favoured in a mixture with Lodgepole Pine of disease resistant provenance or Hybrid Larch. On these more nutritionally challenged sites a proportion (up to 20%) of soil improving species such as birch will be considered.
9	Molinia bog	Often existing on hillsides where flushing is more pronounced. Moderate nutrition available.	
10	Unflashed Flat or Raised Bogs	Sphagnum Moss dominated bogs, formed as peat levels rose to form a dome, reliant on precipitation for moisture and nutrients. Mineral grains are absent and the peat is reddish-brown and tends to be deeper.	
11	Unflushed Blanket Bogs	Calluna, cotton-grass, deer grass bogs including the hill peats located on upland plateaux and hillsides deeply dissected by burns.	
14	Eroded Bogs	Very poor nutritional status characterised by bog asphodel, deer grass, bog cotton etc. Can be dominated by either deep and frequent eroded areas (haggs) or frequent pools of standing water (flows). Very deep peat.	
15	Littoral soils	Formed on coastal sands and shingles, such as the dunes found at Morrich More near Tain. The category is split into shingle (15s), dunes (15d) and then sands with varying water table depths (15e,w,g,i). These sands can be distinguished by various levels of mottling. Coastal grasses and heathland plants predominate.	Corsican cannot be considered due to the current DNB moratorium on planting therefore Scots Pine either pure or in intimate, group or blocky mixture with Birch. Downy/Silver Birch depending on climate

NB – These prescriptions must be adopted within the local context set out in the main body of this Land Management Plan. Climate, (along with soils) must be included as **the** determining factor in final species selection.

- ● No more than 75% of area within a restock/new planting site to be allocated to a single species (as per UKFS General Forestry Practice recommendation no.8)
- Planting will generally become a mosaic of the species recommended above and will include areas of non-productive open ground and broadleaf riparian zones. Species choice will be dictated by local conditions and agreed after site visits by management staff.
- No commercial forestry type likely to be suitable on sites wetter than SMR "Very Moist" and vegetation indicating SNR <4.5
- Origin for SS is QSS.
- * The Ben Wyvis and Strathpeffer Woodlands LMP area is located within the Vulnerable Area , as recognised by 'Strategy for managing larch on the NFE' (2016) . The Strategy currently states that **no larch will be planted** - alternative species to be used will be agreed at 75% site visit and/or at the work plan stage of planning process.

- Origin for LP is ALP.
- Mixed stands mean that each species occupies at least 20% of the canopy. Blocky areas should aim to cover the area that 3-4 mature trees would cover. Mixtures may need management to favour one or more species. Intimate mixtures of broadleaves with Sitka Spruce or Scot's Pine will normally result in the conifer's dominating overtime so planting in blocks is often the better option.
- †Movement of any plant-passported Ash plants, trees and seeds within Great Britain is, until further notice, prohibited under UK Government legislation (2012 Plant Heath Order No. 2707) introduced on 29.10.2012.

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http://www.forestry.gov.uk/fr/INFD-8CVE4D

6.6 Native woodland prescriptions

Soil Group	Soil types relevant to the North Highland FD	Characteristics	Aim*	Indicative Species Prescription**
1	Brown Earths	Soils with typically good aeration and drainage throughout the profile and well-incorporated organic matter. These soils are mainly * fertile and allow deep rooting. Likely vegetation to be encountered includes fine grasses, holcus, bracken, bramble, foxgloves, violets and a diverse range of herbs. * However Podzolic Brown earths where nutrients have been leached are “Very Poor”	NW	**W19** Juniper wood with sorrel (At least 50% Juniper; other species: Downy birch, Scots pine, Rowan) on 1, 1u, 1z and 1b from sheltered sites up to sub alpine areas with DAMS < 22 **W18** Scots pine with heather (50% to 70% Scots pine; other species: Downy & Silver birch, Rowan) on 1z in cool to warm with DAMS < 18 **W11** Upland oak-birch with bluebell (At least 50% Sessile oak with Downy birch; other species: Silver birch, Holly, Pedunculate oak, Aspen) on 1, 1u and 1z in cool to warm with DAMS < 18
3&4	Podzols & Ironpan soils	Developed on Acid * soils with high rainfall where nutrients are flushed into the lower horizons of the soil profile. Frequently induration or an impenetrable pan will prevent good drainage, resulting in a need to break this impediment with suitable cultivation that will allow freer draining and greater rooting depth. Vegetation common to these soils are ericaceous plants, grasses including deschampsia flexuosa, nardus, carex and molinia. Light bracken and feather mosses may also be present. * NOT fertile soils	NW RW	**W18** Scots pine with heather (50% to 70% Scots pine; other species: Silver/Downy birch, Rowan, Juniper) on 3, 3m, 4, 4z and 4b Not in Sub-alpine climate, (Cool to Warm) DAMS < 18. **W19** Juniper wood with sorrel (at least 50% Juniper; other species: Downy birch, Scots pine, Rowan)on 3 and 4b Possible up to Sub-alpine zone **W17** Upland oak-birch with blueberry (At least 50% Sessile oak with Downy birch; other species: Silver birch, Pedunculate oak, Holy and Rowan) on 3s and 3ms Mainly in Lower Cool to warm climate zone. DAMS < 18.
5	Groundwater Gleys	Dominant vegetation is commonly Deschampsia caespitosa, Holcus, salix spp and herbs. Occurring where a shallow water table causes waterlogging and therefore subject to compaction and poorly oxygenated. The soil is permeable but is affected by a fluctuating ground-water table. Moderate nutrient availability.	NW RW	**W7** Alder-ash with yellow pimpernel (50% Alder with Ash†; other species: Downy birch, Common hawthorn, Goat willow, Hazel) on 5 and 5f Cool to Warm. Sheltered to Moderately exposed. (DAMS <16)
6	Peaty Gleys	Very Poor to medium nutritional availability, these soils are indicated by Molinia, Calluna and Erica spp, with sphagnum prevalent in the North and West. High winter water table can be expected and good drainage will be required to achieve best results.	NW RW	**W18** Scots pine with heather (50% to 70% Scots pine; other species: Downy & Silver birch, Rowan) on 6z “moist” to “fairly dry” **W4** Birch with purple moor-grass (50% to 70% Downy birch; other species: Goat willow, Alder) on 6 and 6b. Cool to Warm. DAMS < 18.
7	Surface Water Gleys	Differing from groundwater gleys in that waterlogging is caused not by a high water table, but by induration preventing adequate drainage leading to a seasonally fluctuating water table. Resulting anaerobic conditions will restrict rooting. Indicative vegetation includes Holcus, Juncus, Nardus and Deschampsia *caespitosa*. Again poor to moderate nutritional availability can be expected. Drainage will be required along with micro site cultivation such as mounding..	NW RW	**W11** Upland oak-birch with bluebell (At least 50% Sessile oak with Downy birch; other species: Silver birch, Holly, Pedunculate oak, Aspen) on 7b **W18** Scots pine with heather (50% to 70% Scots pine; other species: Silver/Downy birch, Rowan, Juniper) on 7z possibly on margins leading to drier knolls. **W7** Alder-ash with yellow pimpernel (50% Alder with Ash†; other species: Downy birch, Common hawthorn, Goat willow, Hazel) on 7, 7b and 7z Cool to Warm. Sheltered to Moderately exposed (DAMS <16)
8	Juncus Bogs	Juncus spp are prevalent. A shallower peat type, nutrient rich and containing some mineral grains. Peat is black in colour.	NW RW	**W4** Birch with purple moor-grass (50% to 70% Downy birch; other species: Goat willow, Alder) on 8b and 8c.
9	Molinia Bogs	Often existing on hillsides where flushing is more pronounced. Moderate nutrition available.	NW RW	**W4** Birch with purple moor-grass (50% to 70% Downy birch; other species: Goat willow, Alder) on 9a, 9b, 9c and 9d suitable for the transitional areas at the margins between productive forest blocks and peatland restoration sites.
			OG	9e Trichophorum, Calluna, Eriophorum, Molinia Bogs will not be planted or restocked - restoration of peatland.

10	Unflashed Flat or Raised Bogs	Calluna, Eriophorum, Trichophorum Bogs including the hill peats located on upland plateaux and hillsides deeply dissected by burns.	OG	10b Upland flat or raised bogs – priority areas for peat restoration.
11	Unflushed Blanket Bogs	Calluna, Eriophorum, Trichophorum Bogs including the hill peats located on upland plateaux and hillsides deeply dissected by burns.	OG	11a A rare peatland type mainly restricted to the driest eastern uplands
			OG	11b,c,d Unflushed blanket bogs - priority areas for peatland restoration
14	Eroded bogs	Very poor nutritional status characterised by bog asphodel, deer grass, bog cotton etc. Can be dominated by either deep and frequent eroded areas (haggs) or frequent pools of standing water (flows). Very deep peat	OG	14 & 14h Hagged bogs – unsuitable for forestry or woodland – peatland habitat
			OG	14w Pooled bogs – common across Northern Scotland forming the 'Flows' – peatland.
15	Littoral soils	Wormed on coastal sands and shingles, such as the dunes found at Morrich More near Tain. The category is split into shingle (15s), dunes (15d) and then sands with varying water table depths (15e,w,g,i). These sands can be distinguished by various levels of mottling. Coastal grasses and heathland plants predominate.	NW	**W16** Lowland oak-birch with blueberry limited to "Warm" climate (at least 50% Sessile oak with Downy/Silver birch; other species: Pedunculate oak, Holly, Rowan and Aspen).

Aim* : NW - Native Woodland Expansion / RW – Riparian Woodland Expansion / OG – Managed Open Ground e.g. peatland restoration

Indicative Species Prescription**: details of restock proposal will be agreed at '75% site visit'. In some circumstances (e.g. difficult/limited access, poor nutrient availability, exposure) establishment of any native species, providing at least 20% of canopy cover, will be accepted. On better, productive sites (e.g. PAWS) the aim will be to establish native species at commercial densities with up to 80% of canopy cover.

†Movement of any plant-passported Ash plants, trees and seeds within Great Britain is, until further notice, prohibited under UK Government legislation (2012 Plant Heath Order No. 2707) introduced on 29.10.2012.

NB – These prescriptions must be adopted within the local context set out in the main body of this FDP. Climate must be included as a determining factor in final species selection.

- Planting will generally become a mosaic of the woodland types recommended above, dictated by local conditions and agreed after "75% Site Completion Visits"
- Particular note should be made of the inadvisability of planting the peatland types 10 – 14 that may predominate on marginal FD sites
- No native woodland type likely to be suitable on sites wetter than SMR "Very Moist" and veg indicating SNR <4.5

References:

Kennedy F (2002) *The Identification of Soils for Forest Management,* Edinburgh: HMSO

Pyatt, G; Ray, D; Fletcher, J (2001) *An Ecological Site Classification for Forestry in Great Britain; Bulletin 124,* Edinburgh: FCS

Rodwell J.S. and Paterson G.S. (1994) *Creating New Native Woodlands; Bulletin 112,* London: HMSO

Thompson, R (2009) *Management of PAWS on the National Forest Estate in Scotland,* Edinburgh: FCS

Appendix I: The Relevant Planning Framework in Scotland

FC Scotland prepares Land Management Plans within the following planning framework:

1. The National Level

Document name: **The Scottish Government's Scotland Performs 2007 – Present**

Document purpose: Reports on the Scottish Government's attempts to create a more successful country through the seven purpose targets.

Document name: **The Scottish Government's Land Use Strategy 2011 – Present**

Document purpose: Takes a strategic approach to achieving a more sustainable and integrated approach to land use in Scotland. Focusing on common goals for different land users it provides a set of principles for use as a policy guide and decision making tool.

Document name: **The Scottish Forestry Strategy 2006 – 2016**

Document purpose: Describes how the Scottish Government will deliver its forestry policies in Scotland and sets out the priorities for the next five to ten years.

Document name: **The role of Scotland's National Estate and Strategic Directions 2013 – 2016**

Document purpose: Takes a strategic approach to achieving more sustainable and integrated approach to management of National Forest Estate managed by Forest Enterprise Scotland.

Intended audience: Local Forest Enterprise Scotland team; Forestry Commission conservancy team; key stakeholders; statutory consultees; general public.

2. The Regional Level

Document name: **Highland Forest & Woodland Strategy 2006 - Present (Consultative Draft)**

Document purpose: Provides a regional expression of the Scottish Forestry Strategy, describing priorities and programmes for using trees, woodlands and forestry to help meet the needs of the Highlands.

Intended audience: Local Forestry Commission Scotland team; key stakeholders; statutory consultees; general public.

3. District Level

Document name: **The Forest District Strategic Plan 2014 – 2017**

Document purpose: Serves as a guide to the management of forests within North Highland Forest District. It ensures that forestry activities reflect the local, economic, social and ecological individuality of the forests. Strategic objectives are presented within the context of the Scottish Executive's strategic priorities for forestry in Scotland (e.g. to create a diverse forest resource for the future; make a positive contribution to the environment; to help communities benefit from woods and forests).

Intended audience: Local Forestry Commission Scotland team; key stakeholders; statutory consultees; general public.

4. The Forest Level

Document name: **The Land Management Plan (Covering a ten year period from date of approval)**

Document purpose: Takes a holistic view of integrated land management at the landscape scale, outlining the medium to long term strategic direction for integrated land management across the public estate.

Intended audience: Local Forestry Commission Scotland team; key stakeholders; statutory consultees; general public.

5. Coupe Level

Document name: **Work Plans (permanent coupe record)**

Document purpose: Each forest operation has a related Work Plan. At production of this plan, local staff will identify site specific interests and outline the constraints and opportunities that are relevant to the coupe at an operational scale not detailed in the LMP. Forms the record of all decisions made regarding coupe management.

Intended audience: Local Forestry Commission Scotland team; key stakeholders; statutory consultees where required;

APPENDIX II: KEY POLICIES AND GUIDANCE

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- Equality Act 2010
- Control of Substances Hazardous to Health Regulations 2002
- Provision and Use of Work Equipment Regulations 1998
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
- The Highways act 1980
- Management of Health and Safety at Work Regulations 1999
- Health and Safety at Work Act 1974
- Occupier's Liability (Scotland) Act 1960
- Land Reform (Scotland) Act 2003
- Employers Liability (Compulsory Insurance) Act 1969

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- Policy on Control of Woodland Removal 2008
- Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999

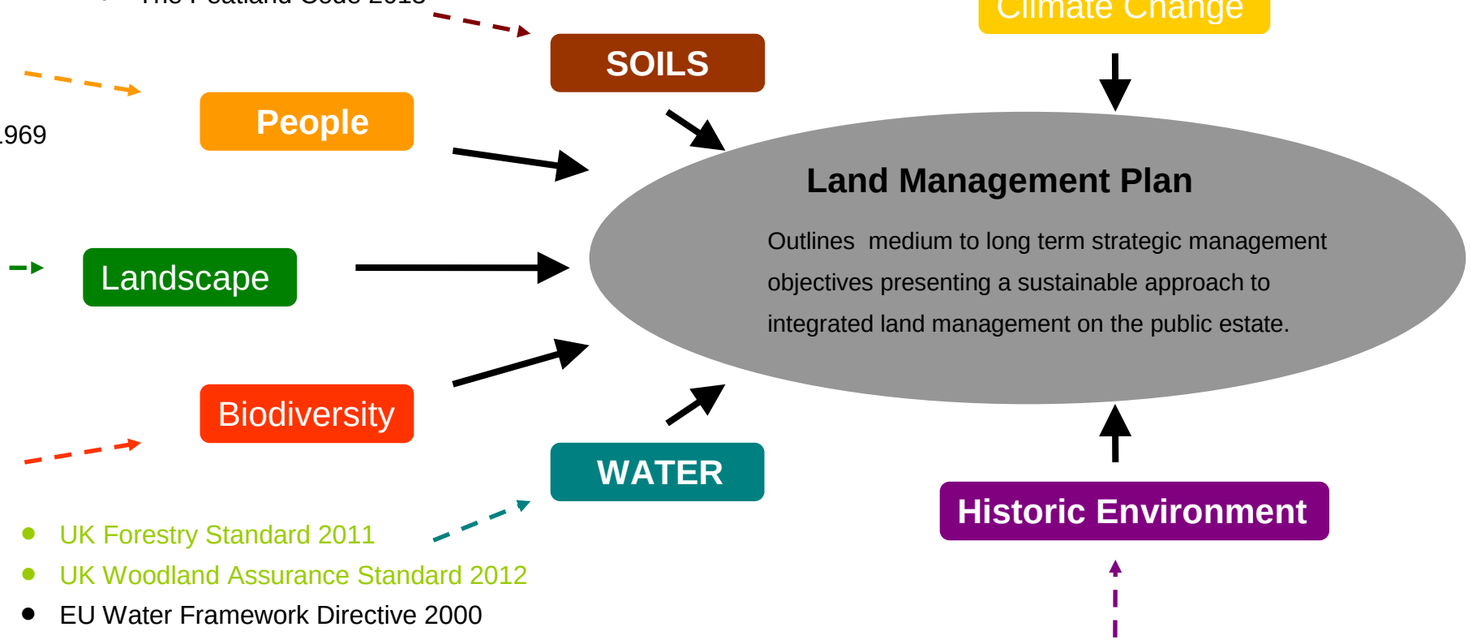
- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- Wildlife and Natural Environment (Scotland) Act 2011
- Conservation (Natural Habitats) Amendment (Scotland) Regulations 2007
- Nature Conservation (Scotland) Act 2004
- Deer (Scotland) Act 1996
- Protection of Badgers Act 1992
- EC Birds Directive 2009
- Convention on Biological Diversity 1992
- EU Habitats Directive 1992

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- World Soil Charter
- European Soil Charter
- The Waste Management Licensing Regulations 1994
- Control of Pesticides Regulations 1986
- Integrated Pollution Prevention and Control Directive 2008
- Environmental Liability Directive 2004
- Control of Pesticides Regulations 1986
- The Scottish Soil Framework 2009
- The Peatland Code 2013

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- EU Water Framework Directive 2000
- Water Environment and Water Services (Scotland) Act 2003
- Water Environment (Controlled Activities) (Scotland) Regulations 2005
- Water Environment (Diffuse Pollution) (Scotland) Regulations 2008
- Environmental Protection Act 1990
- The Highland & Argyll Local Flood Management Plan 2016 – 2022
- The River Basin Management Plan 2015 - 2027

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- The UN Framework Convention on Climate Change
- The Kyoto Protocol
- EC Directive 2003/87/EC
- Climate Change (Scotland) Act 2009

- UK Forestry Standard 2011
- UK Woodland Assurance Standard 2012
- UNESCO World Heritage Convention
- Ancient Monuments and Archaeological Areas Act 1979
- European Convention on the Protection of the Archaeological Heritage Valetta 1992
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997
- Treasure Trove Scotland



Consultee	Date contacted	Date response received	Issues raised	Forest District response (incl. amendments made to plan as a result of consultee comments
SNH	22.08.16	13.09.16	SNH has pointed out that there are number of important designated sites including: Ben Wyvis Special Protection Area (SPA), Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Geological Conservation Review site (GRC); Carn Gorm SSSI & GCR; Glen Affric to Strathconon SPA; Rhiddoroch - Beinn Dearg - Ben Wyvis Wild Land Area (29).	The need to protect/enhance designated sites will influence the management proposals for the LMP area.
SEPA	22.08.16	05.09.16	SEPA welcomed the opportunity to feed into the planning process and highlighted the following areas as ones needing addressing: flood risk and the need to consider the impact of proposed works on downstream receptors; River Basin Management Plan: River Peffery and Ussie Burn are below required status; the need to continue with works aiming at improving water quality and the need to confirm if there are any non-native invasive species within the LMP area; Forest operations – the need to adhere to Forest and Water Guidance; new infrastructure; possible impact on wetlands; using wood waste on site; the need to adhere to Forest and Water Guidance and the Water Environment (Controlled Activities) (Scotland) Regulations (CAR), a need to identify and address the issue if there are any ditches which directly connect to water environment.	All forest operations will adhere to Forest and Water Guidelines and other relevant regulations. North Highland Forest District works with the Highland Council to find a way of reducing flooding risk in River Peffery catchment. The presence of ditches connected directly to watercourses and invasive non-native species within LMP area will be checked and confirmed/excluded by the time of LMP submission.
Highland Council Archaeologist	22.08.16	09.09.16	General advice on adhering to Forest and Historic Environment Guidelines. Where relevant, a walkover survey might be required to inform management proposals (e.g. new planting). Opportunities to improve and promote access to significant historical assets should be considered.	All forest operations will adhere to Forest and Historic Environment Guidelines.
Highland Council Forestry Department	22.08.16	No response		
Highland Council Roads Department	22.08.16	No response		
RSPB	22.08.16	01.09.16	RSPB has pointed out that the presence of black grouse has been recorded of few sites across the LMP area (Contin, Strath Rannoch, Grudie), therefore the fences should be marked as per FCS Technical Note 19; Achanalt Marshes (south form Grudie) supporting resident populations of waders should be protected from diffuse pollution; the forest edge should be 'softened' for waders benefit; al harvesting operations should be taking place	

			outside the main breeding season. Guidance on breeding seasons and safe working distances was provided.	
Ms Fiona Moir - Snowman Rally	23.08.16	06.10.16	Organisers of the Snowman Rally have welcomed District intention to maintain the access for the rally event. The possibility of improving access and spectators facilities was enquired about.	District CRT Manager emailed Ms Moir on the 07.10.16 asking for clarification on which particular areas should be improved.
Ms Shona Wright - Wyvis Natural Play Area	23.08.16	No response		No official response to the LMP consultation, but District's CRT Team is working closely with the community group responsible for development of the Natural Play Area.
Mr Uisdean Menzies - Garve War Memorial	23.08.16	No response		
Mr Steve Macdonald - Strathpuffer	23.08.16			
Cromarty Fishery Board	23.08.16	03.10.16	Confirmation that the forest blocks covered by the LMP proposal are within the Cromarty Firth District Salmon Fishery Board region. Rivers Conon, Peffery, Blackwater, Bran and Sgitheach were highlighted as supporting populations of Atlantic salmon and sea trout. Above rivers and many lochs smaller watercourses in the area support brown trout population and other species, making the water quality within the area and important objective. The Fishery Board has commented on improvement in water quality brought by subjecting forest operations to Forest and Water Guidelines (especially in regard to removing conifers from riparian zones), but highlighted the need to establish native woodland along watercourses to further enhance the aquatic environment. The up-to-date cooperation with the District staff on riparian woodland establishment, invasive non-native species control and mink trapping was remarked upon. The Trust has expressed an interest in developing school and community volunteering projects for planting more riparian woodland.	The Ben Wyvis & Strathpeffer Woodlands LMP brief marks the water quality as one of the top objectives. The Future habitats proposal aims to expand riparian woodland to create circa 30m wide buffer zones along the watercourses (depending on local conditions). Further effort will be made to ensure that forest operations don't have negative impact on the environment – Forest and Water Guidelines will be strictly adhered to.
Wester Ross Fisheries Trust	23.08.16	No response		
Highland Biological Recording Group	23.08.16	No response		
Mountaineering Council for Scotland	23.08.16	03.10.16 and 05.10.16	Mountaineering Council for Scotland (MCoS) has expressed support for forestry proposals as per District Strategic Plan, but raised concerns about possible access difficulties caused by forest design (lack of rides and paths) and felling practice (access	

			restriction in place for longer than necessary). And increase in woodland cover on the upper slopes and extensive felled areas of rough ground could make the access to the hills more difficult.	
Mr George Goldsmith – Wyvis Estate	23.08.16	No response		
Mr D Shand	23.08.16	No response		
Strathpeffer Golf Course	23.08.16	No response		
Mr Hugh O'Donell – Wyvis Estate	23.08.16	No response		
Historic Environment Scotland	23.08.16	31.08.16	Historic Environment Scotland (HES) has pointed out important scheduled archaeology within the proposed LMP area (Little Garve bridge, Carn na Buaile fort, Knock Farril fort, Castle Leod Inventory historic and designated landscape) that need to be marked on the concept map. Advice on the need to adhere to Forest and Historic Environment Guidelines.	The scheduled archaeology will be marked on the Concept map. Archaeological features will be protected during forest operations as per Forest and Historic Environment Guidelines.
Cromartie Estates	23.08.16	No response		
Garve & District Community Council	23.08.16	07.09.16	The Community Council stated that it will consider the LMP proposals at the next meeting and will provide their comments accordingly.	No further correspondence received.
Strathpeffer Community Council	23.08.16	No response		
Ms Isobel Stewart – Contin Community Council	23.08.16	No response		
Inchbae Lodge (residents)	23.08.16	No response		
Lochluichart Estate	23.08.16	No response		
Mr A Hunter – Loch Achonachie Angling	23.08.16	No response		
Mr A Matheson – Brahan Estate	23.08.16	No response		
Mr A Steward	23.08.16	No response		

Mr A Allan	23.08.16	No response		
Mr G Mackenzie	23.08.16	No response		
Mr J Grant	23.08.16	No response		
Mr M Watt – Scatwell Estate	23.08.16	No response		
Mr R McIntyre	23.08.16	No response		
Mr S Grant	23.08.16	No response		
Mr W Fraser	23.08.16	No response		
Mr W Wright	23.08.16	No response		
Strathviach Estate	23.08.16	No response		
Ms Sue Tarr – Blackwater Wildlife Group	30.08.16	13.10.16	Blackwater Wildlife Group welcomed the opportunity to comment. The group will support continuous native woodland restoration and improvement in riparian zones. Query about possibility of setting up of a community woodfuel enterprise.	The contact details of District's Communities, Recreation and Tourism Manager were sent to Ms Tarr on the 14.10.16. CRT Manager sent an email to Ms Tarr on the 17.10.16.
Contin Community Council	02.09.16 (letter dropped at Contin Hall)	No response		
Contin Community Trust	02.09.16 (letter dropped at Contin Hall)		Contin Community Trust has expressed an interest in developing and linking existing path on NFE and on privately owned land to provide alternative route to North Coast 500 between Contin and Garve (concerns about road safety) and improve links for local people. They have requested a smaller scale map to be able to check the ownership of a strip of land the proposed path could be built.	The map was handed to the CCT on the 26th of October. The CCT was informed that the best point of contact for any queries regarding any future recreational facilities will be District's CRT Manager, who will be attending public consultation meeting (scheduled for November).
Ross-Shire Journal	04.11.16	No response	Press advertisement regarding public open drop-in consultation meetings: 08.11.16 at Contin Community Hall, and 09.11.16 at Strathpeffer Community Centre, and providing contact details for those unable to attend the meetings who wish to comment.	
Scottish and Southern Electricity Networks	04.11.16	05.12.16	In their consultation response, SSEN mention number of powerlines crossing the forests covered by the Ben Wyvis & Strathpeffer Woodlands LMP proposal. These are of high (11kV) and very high (33 kV) voltage. The 132 kV transmission line also	

(SSEN)			crosses the forest within the LMP area. SSEN welcomes the proposal to fell significant areas of mature conifer crops along these power lines within the first two felling phases of the proposal and asks for as much notice as possible prior to felling (as per FISA 804) to facilitate required outages. Regarding the restocking (Future habitats) proposal, the SSEN would like to see the reduction of future 'red zone' in order to reduce risk to infrastructure and improve safety of future forest operations. The proposed solutions could be either increasing area of designed open ground and/or broadleaves (including shrubs) to act as a buffer for future harvesting operations.	
Contin public open drop-in meeting	08.11.16		The meeting was well attended and the main issues mentioned were: 1. Equestrian access – number of forest gates (e.g. Ord Wood above Strathpeffer and Torrachilty at Bottacks) are not horse-friendly and obstruct access for riders. The issue was raised by a local rider and was discussed again with the British Horse Society (BHS) Access Officer attending the meeting on behalf of local horse riders. BHS Access Officer mentioned the ambition to remove all difficult gates, both of NFE and privately owned land, allowing for access to land around Ben Wyvis – possible long distance route) 2. Local access to South Garve Hill; 3. Development of a natural play area on NFE land by Garve community; 4. Provision of toilet facilities; 5. Possibility of improving existing forest road to allow for road bike to use the stretch between Garve and Contin, bypassing the narrow and busy A835 and improving the safety for cyclist (taking part in North Coast 500 cycling event and others); 6. Possibility of creation of a link between existing paths both on NFE and privately owned land to improve access for cyclists and walkers; 7. FES future plans for producing timber in the area; 8. Future management of native woodlands within the LMP area; potential for increase of area covered by native broadleaves and provisions for red squirrels; 9. Possibility of having fallen trees removed from paths in Black Muir; comments regarding amount of rubbish in the same forest; 10. Number of unauthorised vehicles in the forests	1. Communities, Recreation and Tourism Forester to have a look at the forest gates in Ord Wood and try to improve the access for horses. Planning Manager explained that the gates in Bottacks are being misused by drivers of unauthorised vehicles (including causing intentional damage to the gates and/or padlocks), therefore it is difficult to come up with a design of a gate that would allow access for horses and at the same time make it difficult for quads, motorcycles and 4x4s to cross into the forest – BHS Access Officer to send drawings of gate designs allowing for that' **Subsequently the gates at Ord Wood were altered to allow for equestrian access.** 2. Forestry Liaison Officer explained that there are no provisions for public use of the bell-mouth entrance in Garve (built by SSE for the powerline upgrading purposes) and advised the local resident not to use it; 3. Communities, Recreation and Tourism Manager explained that due to financial cuts, the District has no funds for developing further recreational infrastructure. The natural play area in Garve is being developed by a local community and all financial and legal requirements are to be met by the community (the District leases that land to the community); 4. Communities, Recreation and Tourism Manager explained that the public toilets located in Silverbridge and Rogie Falls car park are owned and managed by the Highland Council, so FES has no influence on the management of these facilities. According to our latest information, there will be no toilets provided at the Garve natural play area. Only the Contin toilets are owned by the District. 5. Planning Forester explained that the forest road in question is a working road rather that a recreational trail and is used for timber haulage on daily basis. Upgrading and maintaining it to a standard suitable for road, rather that mountain bikes would not be possible. FES is happy for bikes, walkers and rider to use the forest roads as they are, under the

				Scottish Outdoor Access Code provisions.
Strathpeffer public open drop-in meeting	09.11.16			
RSPB	11.11.16	14.11.16	RSPB has an occasional record of hen capercaillie coming into the LMP area from the east (Novar Estate). The increase in area planted with Scots pine would provide an opportunity for the Torrachilty forest to be colonised by capercaillie and contribute towards boosting their population in Ross. The use of deer fences should be avoided, and where unavoidable, the fences should be marked as per FCS Technical Note 19.	Capercaillie is one of the FCS priority species and improving its habitat is one of the District's objectives. The future species composition will be decided using the best silvicultural practice – matching tree species to the site conditions. The soils and vegetation indicate that Scots pine might play a bigger role that in previous rotation, but there are significant areas of the forest where the Sitka spruce and Lodgepole pine is the most suitable crop. The District aims at targeting the use of deer fencing to the area where the deer population has the biggest potential to cause damage**.** If marking of the new/replaced fences is deemed necessary, they'll be marked as per FCS Technical Note 19.
Ms Nora Ross - Contin Community Trust		15.11.16	Ms Norma Ross, Chair of the Contin Community Council has complained about not being informed about the public consultation meetings earlier in the month. She complained that the Community Council was nor informant about the consultation and therefore prevented from feeding into the process.	An explanation that our earlier attempts to contact Contin CC brought no reply. The consultation events were advertised on FC website, posters placed at forest entrances and the event venues well in advance, and in the local press (Ross-shire Journal) on the 04.11.16. An offer to meet with Contin CC was made and accepted, and the meeting scheduled for 30.11.16.
Contin Community Trust		30.11.16	Meeting with Contin Community Trust was held at the NHFD depot in Contin on 30.11.16. Contin Community Council was represented by Chair of Community Council, Ms Nora Ross. NHFD was represented by Operations Forester – Ian Allsopp, Communities, Recreation & Tourism Forester – Peter Mackay and Planning Forester – Agata Baranska. The issues raised by Contin CC were: 1. The volume and speed of traffic passing through the village is of concern given the narrow pavements – Contin CC is in contact with BEAR Scotland to try and improve the safety; 2. Access from the village onto the forest road (at the pin-turn) is obstructed by boulders, which make it difficult for buggies and children on bikes to pass through; 3. Access for vulnerable users could be improved by building a path bypassing the busy road linking A835 with the forest entrance. It would need to be built on the ground behind the hatchery; 4. Possibility of District's staff carrying our works on a damaged footbridge in 5 Acre Wood (Contin village) - frequently used by children and hazardous; 5. Possibility of provision of natural play infrastructure within the existing picnic area in Contin;	2. Peter and Ian explained that the boulders were placed at the junction to prevent unauthorised vehicles from entering the forest. The junction will be inspected and checked for possible improvements**. Subsequently, on the 2nd of December, the boulders were pulled apart to improve access. Ms Ross was informed, by email, on the 5th of December.** 3. Peter explained that majority of the land between the A835 and the forest is outside NFE boundary and the ownership needs to be investigated. He further advised that the Highland Council Access Officer should be contacted as the relevant person to provide further advice. Peter explained that such development will require number of consents (e.g. form the Highland Council, SEPA, etc.). NHFD is willing to help with the project once within NFE boundaries. 4. Peter and Ian explained that there are no legal provisions for the District staff to work on land of other ownership. Peter provided Ms Ross with a telephone number of a locally based contractor who might be interested in repairing the bridge in 5 Acre Wood. He added that the District will donate the timber required to fix the bridge. **Subsequently, the above mentioned contractor has seen the available timber; Ms Ross was informed, by email, on the 5th of December.** 5. Peter explained that the District isn't currently interested in development of a play area in Contin. He added that a natural play area is being developed on NFE ground by Garve community. District doesn't participate in the project

			6. Educational value of species labels on more interesting tree specimen and habitat piles along forest roads/paths.	beyond providing the ground (lease), and all the financial and legal requirements are to be met by the community. Picnic area in Contin will be improved within next few years, but no play provisions are envisioned. 6. Pater and Ian explained that the requirement to provide sufficient deadwood habitat is met by leaving certain amount of dead and dying trees on harvesting sites.
SNH	13.01.2017	08.02.17	SNH was contacted for advice on the possible ranger access for deer control on Ben Wyvis NNR. As the north eastern part of Torrachilty will be subjected (subject of FCS approval) to peatland restoration, the currently used track will no longer be suitable.	SNH requested to have the most suitable route to be identified and assessed for the possible impact on SSSI and SAC. NHFD requested SNH's help with finding the most suitable route for rangers' access (email from 09.02.2017). The date for on-site meeting between the representatives of SNH and NHFD was set for **24.03.2017**. During the meeting the following was agreed: • Two access points identified by NHFD staff were accepted by SNH as suitable (NH 4922 6479 & NH 4513 6271) • Once on the designated site, the deer controllers should keep to drier land and also avoid using the same route on a regular basis to avoid causing damage to blanket bog; • The top boundary fence (north) will be dismantled and a new fence will be erected further south; marking of that fence against bird strikes might be required due to capercaillie dispersing into the area. • In order to reduce the unauthorised access onto Ben Wyvis NNR the bridge at the current access point will be removed; the new fence along the upper woodland edge will prevent vehicular access onto designated site.
The Highland Council Flood Team	10.03.2017 Meeting		Meeting between the Highland Council Flood Team, FES Climate change, tree health and resilience officer and NHFD took place on the 10th of March 2017 in Dingwall. NHFD's management proposals for Peffery catchment (as per Ben Wyvis & Strathpeffer Woodlands LMP proposal) were presented and discussed. Map 5 – management coupes and Map 6 –Future habitats were given to the HC Flood Team. They were informed that the proposal is in it'd draft and will be placed on the Public Register for period of 28 days once submitted to Forestry Commission Scotland for approval. Following was agreed: • There is potential scope for possible built water storage facility in the wood, but the proposed location needs to be carefully surveyed and assessed, also against PAWS restoration objectives; • The possible Natural Flood Management (NFM) solutions that could be applied in Peffery catchment are leaky log dams. Due to the terrain, there is limited area available for	

			them. • HC Flood Team expressed their understanding that due to forest health (DNB) and extensive wind damage to the crop within the Peffery catchments severely reduces the possibility of retaining mature crop. • NHFD will explore possibility of early restocking within the catchment, subject to *Hylubius* monitoring results. • HC Flood Team will continue to model possible impact of the riparian woodland width and planting density on peak flow and will update NHFD asap. • HC Flood Team will model impact of leaky dams on peak flow and will update NHFD asap. • NHFD will be happy to facilitate the storage of water on NFE ground if such solution is recognised as feasible. • HC Flood Team will create a working group to explore possible measures to improve flooding situation in Peffery catchment.	
SEPA	30.03.2017	06.04.17	Autoplay CD with draft LMP proposals sent for consultation. SEPA stated they are satisfied that LMP proposal addressed the points raised at the scoping stage. SEPA welcomes the new riparian woodland planting proposal, restoration of PAWS and use of LISS. SEPA also supports NHFD's dialog with the Highland Council regarding reducing flood risk in River Peffery catchment and peatland restoration proposals.	
SNH	30.03.2017	26.04.17	Autoplay CD with draft LMP proposals sent for consultation. SNH has highlighter the presence one of Comrie GCR's features (rock outcrop) within the NFE boundaries. The importance of preserving the open character and free access to the feature was highlighted, and the request was made to exclude the area from restock proposal. SNH advised that Comrie GCR should be added to list of designated sites within the LMP area, and included in Designated Site Planning document. Further comments regarding meeting between SNH and FES regarding deer management and rangers' access to Ben Wyvis NNR were supplied. The importance of reducing the unauthorised vehicular access to the designated site was stressed. Please see notes from the meeting above.	The felling and restock proposal were amended to exclude the GCR features, Changes to Map 3, Map 4, Map 5, Map 6, Map 7 (both felling and restocking) and the coupe summary were made as advised. Comrie GCR was added into the Designated Site Planning document.
Highland Council Flood Team	30.03.2017	No response	Autoplay CD with draft LMP proposals sent for consultation.	

Appendix IV – Internal Consultation Record

An internal scoping meeting was held on 13th of April 2016 at the North Highland Forest District's office in Golspie, with following officers in attendance:

Tim Cockerill	Forest District Manager
Malcolm MacDougall	Planning Manager
Richard Wallace	Development and Operations Adviser
Neil McInnes	Environment Manager
Susan Dolby	Environment Forester
Hazel Maclean	CRT Manager
Peter Mackay	CRT Stewardship Forester
Hugh Mackay	Programme Manager
Avril MacLennan	Planning Forester
Roddy MacLeod	FM Area Forester
Ian Allsopp	Operations Forester
Stephen Fraser	Forestry Liaison Officer
Derick Macaskill	Wildlife Ranger Manager
Claudia Johnstone	Land Agent
Renate Jephcott	Landscape Architect
Stuart Waugh	Civil Engineer
Johnny Grey	Civil Engineering Works Supervisor
Agata Baranska	Planning Forester

Issues highlighted during the scoping meeting were as follows:

- Environmental value of the forests within the plan area in regard to Freshwater Pearl Mussel (FWPM), Capercaillie, Red squirrel and Black grouse habitat;
- Significant areas of Plantations on Native Woodland Sites (PAWS), especially in Rogie, Achilty, Grudie and Longart – managements proposals to be discussed with FC Native Woodland Ecologist.
- Presence of Long Term Retentions (LTRs) and Natural Reserves (NRs);
- Importance of water quality protection and aquatic environment enhancement for FWPM and fisheries;
- Possible woodland expansion areas - tree line, montane woodland in Grudie, Longart & Garbat and Torrachilty – proposals to be discussed with FC Native Woodland Ecologist;
- Presence of archaeological remains within the Plan area (3 Scheduled Ancient Monuments);
- Peatland restoration areas (Torrachilty) and long term management approach to adjacent crop;
- Woodland creation schemes on adjacent neighbouring land;
- Flood risk in Strathpeffer and Garve - mitigation measures that could be adopted for forest management within the catchments at risk – proposals to be discussed with Highland Council's Flood Risk Management Team;
- A full review of coupes; coupes that are now in business plan and ideally shouldn't change were noted;
- Coupes affected by windblow and DNB were discussed, and some were recommended for felling within 1st and 2nd phase of the Plan;
- Roading requirements were discussed, along with the necessary liaison with neighbours;
- Private water supplies and the need of protecting them during forest operations;
- Deer management – species present within the Plan area, fencing requirements, liaison with neighbours (SNH needs to be consulted re. fencing and planting adjacent to Ben Wyvis designations);

- Hydro schemes within the Plan area and their possible impact on forest operations and access;
- Powerline upgrades (SSE) within the Plan area and their possible impact on forest operations (including restock proposals) and access;
- Railway-related felling: timing of operations and liaison with Network Rail;
- Prominence of the forest blocks of Wester Ross in the landscape – FC Land Architect will be involved in coupe design – site visit dates tbc;
- Recreational use of the forests within the Plan area; current facilities, proposed developments and maintenance needs were discussed;
- Recreational events within the Plan area (notably Strathpuffer and Snowman Rally) and related issues;
- Unauthorised motorbike and quad access to the forests and possible mitigation measures were discussed.

Appendix V – Archaeological Record

Designation	SAM Number	Feature description/location	Grid reference
Scheduled Monument	2720	Little Garve, bridge over Black Water	NH 3960 6280
Scheduled Monument	1672	Knock Farril, hill fort and promontory fort, Knock Farrel	NH 5050 5850
Scheduled Monument	1758	Carn na Buaile, hill fort and promontory fort, Achilty Wood	NH 4110 5660
Unscheduled Monument	N/A	Coull, firing range, Torrachilty Forest near Contin	NH 4505 5750
Unscheduled Monument	N/A	Rogie township, Rogie near Contin	NH 4400 5991
Unscheduled Monument	N/A	Rogie, cup-marked stone, Rogie near Contin	NH 4402 5979
Unscheduled Monument	N/A	Bothy, Tarvie Wood, Torrachilty	NH 4420 5870
Unscheduled Monument	N/A	Hut circle, sheep fold, Torrachilty	NH 4419 5881
Unscheduled Monument	N/A	Bothy, Tarvie Wood, Torrachilty	NH 4430 5870
Unscheduled Monument	N/A	Glansgaich farmhouse and turbine house, Torrachilty	NH 4587 6089
Unscheduled Monument	N/A	Gleann Sgathaich enclosure, Torrachilty	NH 4598 6125
Unscheduled Monument	N/A	Water pipe, north of Glensgaich, Torrachilty	NH 4593 6113
Unscheduled Monument	N/A	Sheepfold, near Glensgaich, Torrachilty	NH 4639 6135
Unscheduled Monument	N/A	Dyke, north of Glensgaich, Torrachilty	NH 4585 6161
Unscheduled Monument	N/A	Reservoir, north of Glensgaich, Torrachilty	NH 4539 6240
Unscheduled Monument	N/A	Sheepfold, Druim Dubhran, Torrachilty	NH 4872 6127
Unscheduled Monument	N/A	Undated building, Allt an Ruamhair, Torrachilty	NH 4930 6100
Unscheduled Monument	N/A	Undated cairn, 'Tumuli' Druim Dubhran, Torrachilty	NH 4948 6118
Unscheduled Monument	N/A	Township remains, west of Rogie farm, Rogie, Torrachilty	NH 4415 5930
Unscheduled Monument	N/A	Remains of cairn, Rogie, Torrachilty	NH 4441 5905
Unscheduled Monument	N/A	Allt An Achaidh Mhoir, cairn and dyke, Torrachilty	NH 4224 5983
Unscheduled Monument	N/A	Achadh Mor farmstead, Torrachilty	NH 4210 6010
Unscheduled Monument	N/A	Clearance cairns, Allt na Goibhle to Allt na Cleir, by Loch Garve	NH 4198 6036
Unscheduled Monument	N/A	Clearance cairns, Allt na Goibhle to Allt na Cleir, by Loch Garve	NH 4125 6024
Unscheduled Monument	N/A	Clearance cairn field, cairn, linear clearance Allt na Goibhle to Allt na Cleir, by Loch Garve	NH 4096 6040
Unscheduled Monument	N/A	Poll Dubh culvert, Strathgarve	NH 4065 6097
Unscheduled Monument	N/A	Poll Dubh undated quarry, Strathgarve	NH 4064 6104
Unscheduled Monument	N/A	Strathgarve Bridge, Strathgarve	NH 4030 6390
Unscheduled Monument	N/A	Allt Abhagaith, possible shieling hut, Strathgarve	NH 4096 6382

Designation	SAM Number	Feature description / location	Grid reference
Unscheduled Monument	N/A	Glac Luachrach, possible illicit still, Strathgarve	NH 4125 6365
Unscheduled Monument	N/A	Longart farmstead & enclosure, Longart	NH 3982 6552
Unscheduled Monument	N/A	Longart clearance cairn, Longart	NH 3970 6550
Unscheduled Monument	N/A	Longart undated structure and enclosure, Longart	NH 4030 6660
Unscheduled Monument	N/A	Longart undated enclosure, Longart	NH 4113 6745
Unscheduled Monument	N/A	Dubh Choille field system, Longart	NH 4090 6850
Unscheduled Monument	N/A	Coille Na Sroine undated enclosure, Longart	NH 3907 6924
Unscheduled Monument	N/A	Coille Na Sroine field system, Strathrannoch	NH 3950 7000
Unscheduled Monument	N/A	Ruigh Na Cloiche enclosure and sheepfold, Strathrannoch	NH 3980 7135
Unscheduled Monument	N/A	Stell, fank, Garbat	NH 4115 6721
Unscheduled Monument	N/A	Bloomery, Allt A' Bhealaich Mhoir, iron working site, Garbat	NH 4200 6714
Unscheduled Monument	N/A	Allt A' Bhealaich Mhoir, iron working site, Garbat	NH 4200 6700
Unscheduled Monument	N/A	Loch A'Chuilinn, undated enclosure, Grudie	NH 2820 6190
Unscheduled Monument	N/A	Achadh Mor, undated enclosure, Grudie	NH 2920 6180
Unscheduled Monument	N/A	Enclosure, south of Corriemoiilie Lodge, South Garve Hill	NH 3591 6323
Unscheduled Monument	N/A	Contin to Poolewe military road, South Garve Hill	NH 3800 6226
Unscheduled Monument	N/A	Dyke, South Garve Hill	NH 3917 6172
Unscheduled Monument	N/A	Dyke, South Garve Hill	NH 3954 6070
Unscheduled Monument	N/A	Dyke, South Garve Hill	NH 3970 6043
Unscheduled Monument	N/A	Knockglass sheepfold, South Garve Hill	NH 3977 6032
Unscheduled Monument	N/A	Church, Killin Farm, South Garve Hill	NH 3900 6000
Unscheduled Monument	N/A	Ard-a-Chulish farmstead, South Garve Hill	NH 3902 5876
Unscheduled Monument	N/A	Loch Garve pillbox, South Garve Hill	NH 4087 5922
Unscheduled Monument	N/A	Loch Garve military installation, South Garve Hill	NH 4090 5920
Unscheduled Monument	N/A	Loch Garve pillbox, South Garve Hill	NH 4106 5908
Unscheduled Monument	N/A	Loch Garve undated farmstead, South Garve Hill	NH 4120 5900
Unscheduled Monument	N/A	Strone, undated farmstead & enclosure, Achilty Wood	NH 4233 5651
Unscheduled Monument	N/A	Ord Wood Carriage Track, Strathpeffer	NH 4778 5818
Unscheduled Monument	N/A	Jubilee Pond saw mill, Blackmuir	NH 4794 5732
Unscheduled Monument	N/A	Saw mill workers' hut, Blackmuir	NH 4796 5731
Unscheduled Monument	N/A	Jubilee Pond Curling Pons and Pavilion, Blackmuir	NH 4798 5726
Unscheduled Monument	N/A	The Chalet, Knockfarrel	NH 5036 5838

Appendix VI – Planted Ancient Woodland Site Appraisal

The NHFD PAWS monitoring programme, as directed by FES PAWS policy runs concurrently with LMP review periods. The table below summarises the results of the 2016 monitoring operation and compares the results to the previous survey. The full results of the survey have been added to the FES GIS GeoDataBase:

Forest	AW ID	Area (Ha)	Aim	Threat Level	Threats	Actions Proposed
Achilty NH 4341 5717	4760 (286)	133.0	Full restoration to a native woodland by maintenance of a non native removals programme.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Work during the next phase will concentrate on the removal of non-native regen and in particular areas of Western hemlock and Douglas fir. Mature non-native conifers will be harvested where practical but otherwise felled to add to the deadwood biomass of the recovering native woodland.
Achilty NH 4250 5604	4864 (990)	84.0	Full restoration to a productive native woodland by gradual conversion.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Good species diversity exists currently. The areas of non native conifers will be managed out of the block under low impact silvicultural systems and in the meantime regeneration of non-native species will be removed by hand pulling and cutting.
Blackwater NH 4436 5960	4823 (852)	29.0	Full restoration to a productive native woodland by gradual conversion. Thereafter managed using low impact silvicultural systems.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Continued LISS management will gradually see a movement towards native species and seed sources will be planted in riparian areas, in particular aspen, minor species and silver birch.
Blackwater NH 4277 5900	4824 (853)	72.0	Full restoration to native woodland for biodiversity and landscape value.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	This woodland forms part of the fringe along the NC500 and a popular tourist route to the Outer Hebrides. Non-native conifers will be removed as they regenerate and pole stage conifers will be brashed to assist in field layer recovery prior to early felling later in the plan period. Lack of species diversity will be addressed by supplementary planting of minor species and in particular aspen throughout.
Contin NH 4591 5687	4856 (953)	20.0	Full restoration to a productive native woodland by gradual conversion.	Secure	Non-native conifer regen. Herbivores. INNS.	This area has been clearfelled and just prior to the plan revision some mulching of gorse and broom to allow planting positions for native species has taken place. Non-native regen will be removed in an ongoing programme as resources allow and INNS will be managed through the FD programme. Good levels of birch regen have been noted.

Contin NH 4544 5734	4870 (8302)	16.0	Full restoration to a productive native woodland by gradual conversion.	Secure	Non-native conifer crops and regen. Herbivores. INNS.	The conversion to native species will be managed by adopting LISS, halo thinning to increase the deadwood biomass, removal of non-native regen and INNS.
Contin NH 4567 5692	4871 (8303)	14.0	Full restoration to a productive native woodland by clearfell and restocking.	Threatened	Non-native conifer crops and regen. Herbivores. INNS.	This area will be clearfelled during the second phase of the revised plan and thereafter managed by restocking with native species as a productive woodland. Non-native species and INNS will be removed as part of the FD ongoing programme.
Corriemoillie NH 3792 6358	4814 (842)	25.0	Full restoration to a productive native woodland by clearfell and restocking.	Threatened	Non-native conifer crops and regen. Herbivores. INNS.	This area will be clearfelled during the first three phases of the revised plan and thereafter managed by restocking with native species as a productive woodland. Non-native species and INNS will be removed as part of the FD ongoing programme.
Peffery Burn NH 4725 6037	4850 (947)	24.0	Full restoration to a productive native woodland by clearfell and restocking.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Much of this area was clearfelled during 2016 and can now be restocked with native species and allowed to regenerate where seed sources exist. A small proportion of the area will be managed as productive, however the coupes are important buffers of the River Peffery and as such the majority of the area will be managed for biodiversity.
Grudie NH 2868 6167	4750 (276)	57.0	Continued management as a native woodland for biodiversity.	Secure	Bracken cover prohibiting regeneration in some areas, INNS and herbivores.	This woodland has been included in the repositioning programme for sale during 2017. No management activity is proposed for the remainder of the plan period.
Loch Garve NH 4227 6020	4754 (280)	3.0	Maintenance as a riparian woodland, native in character.	Secure	Non-native regeneration, herbivores and INNS.	A small area of native woodland with appropriate species already well represented. The area will be monitored in line with FD plan revisions to ensure that the watercourse is kept open and the area remains free of INNS.
Loch Garve NH 4173 5985	4862 (988)	27.0	Full restoration to a productive native woodland by clearfell and restocking.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Partially clearfelled the remainder is proposed for clearfell in phase 4 of this revision. Before then INNS and non-native regeneration will be removed and some halo thinning will be undertaken to reduce pressure on native species remnants.
Loch na Crann NH 4544 5852	4853 (950)	3.0	Full restoration to a productive native woodland by clearfell and restocking.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Western hemlock regeneration is a particular feature in this area and following clearfell during phase 1 of this revision a programme of non-native removal will be undertaken. Thereafter the coupe will be restocked with native species and managed as productive woodland.

Lochluichart NH 3619 6248	4748 (273)	23.0	Full restoration to productive native woodland by restocking.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	Now clearfelled it is proposed to restock this coupe with native species to be managed thereafter as a productive native woodland. The non native regeneration will be removed and the site monitored for INNS as part of the FD plan review process. Species diversity along the loch side will remain a priority.
Longart NH 3961 6557	4744 (270)	2.0	Full restoration to native riparian woodland	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	The area is largely native species and is being managed as riparian woodland, however a small (0.3 Ha) area has been restocked with Sitka spruce and this will be felled to recycle during the first phase of the revised plan.
Longart NH 3953 6499	4812 (840)	14.0	Full restoration to a productive native woodland and riparian woodland by clearfell and restocking.	Threatened	Remnants of non-native conifer crops and regen. Herbivores. INNS.	This area will be converted during a future plan phase and in the meantime INNS and non-native regen will be removed and a limited amount of halo thinning will be undertaken to open river banks to light for field layer recovery and preserve native remnants.
Longart NH 4076 6833	4847 (932)	146.0	Full restoration to a productive native woodland and riparian woodland by clearfell and restocking.	Threatened	Remnants of non-native conifer crops and regen. Herbivores. INNS.	A large proportion of this PAWS area was restocked with non-native conifers by IRS FD prior to NHFD taking over the forests. Much of this is at early pole or thicket stages and removal at this stage would be prohibitively expensive. It is proposed to manage the area towards productive native woodland by clearfell at an appropriate but early stage once the crops have matured. In the interim it is proposed to encourage development of the field layer by some areas of brashing, halo thin around native remnants and continue to monitor INNS at plan revisions and reviews.
Strathgarve NH 4071 6069	4851 (948)	11.0	Full restoration to a productive native woodland and riparian woodland by clearfell and restocking.	Threatened	Remnants of non-native conifer crops and regen. Herbivores. INNS.	It is proposed to clearfell this area within phase two of this revision and restock with native species to create productive woodland and areas of riparian woodland. Veteran remnants will be protected throughout and following clearfell INNS and non-native regen will continue to be protected.
Strathrannoch NH 3961 7022	4840 (925)	5.0	Partial restoration by limited halo felling.	Secure	Remnants of non-native conifer crops and regen. Herbivores. INNS.	This small area of PAWS lies within a much larger (c100Ha) plantation natural reserve and as such should be managed with minimum intervention. However management activity to preserve biological features is permitted and as such some felling to protect any veteran native trees and to add to the biomass of deadwood will be undertaken.

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Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Ben Wyvis & Strathpeffer Woodlands

Land Management Plan 2017 - 2027

Plan Brief

Plan Brief

Background information

This LMP is a full revision of management proposals for an area previously covered by five separate Forest Design Plans (FDPs): Longart & Garbat (2013 – 2023), Strathgarve (2011 - 2021), Torrachilty (2007 – 2017), Achilty (2009 – 2019) and Strathpeffer Woodlands (2008 – 2018). It will cover an area of approximately 9600 ha.

Ben Wyvis & Strathpeffer Woodlands LMP is located in Ross-shire, an area known for its dramatic landscape, and extremely popular with hill walkers and mountaineers, cyclist, hunters and other out-door enthusiasts. Popular event such as the Strathpuffer (24hr Mountain Bike Race) and Snowman Rally are annually hosted in forests covered by the Ben Wyvis & Strathpeffer Woodlands LMP. Proximity to population centres of Strathpeffer, Dingwall, Contin and Garve, high visitor numbers and adjacency to important fisheries and designated sites like Ben Wyvis Special Protection Area (SPA) ,Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI), Glen Affric to Strathconon SPA and Loch Ussie SSSI, mean that water quality, conservation of protected species and habitats, recreation, timber production and landscape considerations are the main drivers behind the LMP proposals.

Strategic influence

The management of National Forest Estate is guided by The Role of National Forest Estate and Strategic Directions document (2013), which identifies six key aspirations for the publicly owned forests:

- **Healthy**: achieving good environmental and silvicultural condition in a changing climate;
- **Productive**: providing sustainable economic benefits from the land;
- **Treasured**: as a multi-purpose resource that sustains livelihoods, improves quality of life and offers involvement and enjoyment;
- **Accessible**: local woodlands and national treasures that are well promoted, welcoming and open for all;
- **Cared for**: working with nature, respecting landscape, natural and cultural heritage;
- **Good value**: exemplary, efficient and effective delivery of public benefits.

Drawing on these key themes North Highland Forest District (NHFD) prepared a three year District Strategic Plan, setting out a vision, priorities and objectives in the spirit of which the North Highland FD land management plans are prepared. Aims and objectives of Ben Wyvis & Strathpeffer Woodlands Land Management Plan were developed on the basis of National Forest Estate key aspirations and NHFD's commitments set in the District Strategic Plan (2014 – 2017).

Vision

Well managed productive forests that are accessible and enjoyed by the public, contribute to local economy and complement the scenic landscape of Ross-shire. Extensive areas of native woodland and other rare habitats are linked, support populations of protected species, and contribute positively to the water quality within the River Conon and Cromarty Coastal catchments.

Aims

- To restore valuable ancient woodland sites and expand network of riparian, montane and native woodland.
- To manage the forests in a manner that positively contributes to water quality, with a special emphasis on watercourses supporting populations of freshwater pearl mussels and migratory fish.
- To manage the forests sympathetically to the landscape in order to improve their appearance.
- To maintain access to the forests and improve/maintain visitor facilities to a consistently high quality. To provide venue for popular recreational events such as Strathpuffer (a 24 hr Mountain Bike Race) and Snowman Rally.
- To optimise productive potential of the forests by matching restock species to site conditions; to sustain timber production at a level that supports local economy and wider timber industry; to increase area of productive broadleaves.
- To support local communities that are currently involved in management of their local forests, be open to working in partnership and encourage and support any new approaches.
- To contribute to climate change mitigation measures by maintaining sustainable timber production, creating areas of new woodland and facilitating woodfuel and renewable energy production.

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The table below outlines the strategic aims, objectives and details how progress against these targets will be monitored

Aim	Objective	Monitoring
To restore valuable ancient woodland areas and expand network of riparian, montane and native woodland.	• Continue to monitor all planted ancient woodland sites. Where appropriate we will restore or enhance productive woodland comprising largely of native trees. • Continue to work with neighbours and stakeholders to expand the scarce montane woodland habitat along upper forest margins within the Plan area.	• Implementation of the felling proposals will be reviewed annually through the delivery of harvesting programme and formally at LMP's 5 years review and 10 years revision • Core ancient woodland sites will be monitored and reported on by Environment team using existing FCS environmental management protocols. • Implementation of the future habitat proposals will be monitored annually through the restock programme and formally at LMP's 5 years review and 10 years revision. • Implementation of the montane woodland expansion will be monitored at LMP's 5 years review and 10 years revision, assessed by Environment and Planning leads.
	• Establish riparian woodland along major watercourses and native woodland at the forest blocks' boundaries and where it is likely to secure environmental benefit and/or improve the overall management.	• Implementation of the future habitat proposals will be monitored annually through the restock programme and formally at LMP's 5 years review and 10 years revision.
	• Work with Scotland's Environmental and Rural Services and our neighbours to develop a sustainable, landscape scale approach to deer management and promote National Forest Estate (NFE) as an exemplar of best practice.	• Deer management will be monitored and reported on using existing FCS deer management protocols.
To manage the forests in a manner that positively contributes to water quality, with a special emphasis on watercourses supporting populations of fresh water pearl mussels and migratory fish.	• Increase area of riparian woodland along Black Water, River Peffery and their tributaries, and other watercourses feeding into River Conon and Cromarty Coastal catchments.	• Implementation of the future habitat proposals will be monitored annually through the restock programme and formally at LMP's 5 years review and 10 years revision
	• Protect the integrity of all watercourses during management operations and into long term by applying measures outlined in forest and water guidance.	• Special measures will be identified through work plan process and will be monitored through good site management and 75% site visits*.

	• Continue developing catchment scale habitat management to benefit species and positively influence hydrology, in close consultation with partners such as Fisheries Trusts and SEPA.	• On-going process lead by the Environment and Planning teams. Progress will be reviewed formally at LMP's 5 years review and 10 years revision.
To manage the forests sympathetically to the landscape in order to improve their appearance.	• Implement LMP felling and restocking proposals designed in liaison with the FCS landscape architect.	• Implementation of the felling and future habitat proposals will be monitored annually through the restock programme and formally at LMP's 5 years review and 10 years revision.
	• Remove wind damaged crops, prioritising highly used tourist routes and areas of ecological importance.	• Delivery will be monitored through annual work programmes and formally at LMP's 5 years review and 10 years revision.
To maintain access to the forests and improve / maintain visitor facilities to a consistently high quality. To provide venue for popular recreational events such as Strathpuffer (a 24hr Mountain Bike Race) and Snowman Rally.	• Maintain the level of public access to the forests within the LMP area by maintaining and/or improving visitor facilities and providing diversions and/or alternative access routes during forest operations.	• Monitoring of visitor numbers will be carried out by Communities, Recreation and Tourism team (CRT). • Maintaining level of public access during forest operations will be monitored through the work plan process, good site management and 75% site visits.
	• Develop campervan parking and informal camping sites for teams supporting Strathpuffer competitors. • Continue to improve key visitor zones around high priority recreation sites and along major tourist routes.	• Progress will be monitored by Communities, Recreation and Tourism team (CRT). Formally it will be reviewed at LMP's 5 years review and 10 years revision.
To optimise productive potential of the forests by matching restock species to site conditions; to sustain timber production at a level that supports local economy and wider timber industry; to increase area of productive broadleaves.	• Use best practice in silviculture to identify productive soils and suitable species and manage these areas accordingly, thinning where climate and soils allow. • Restock sites with productive broadleaf species where environmentally and silviculturally appropriate. • Apply best silvicultural practice to improve quality and yields of our commercial conifer timber.	• Implementation of the felling and general future habitat proposals will be monitored annually through the restock programme and formally at LMP's 5 years review and 10 years revision. Detailed restock proposals will be developed post-felling, during the work plan process and 75% site visit and will be monitored annually through restock programme.
To support local communities that are currently involved in management of their local forests, be open to working in partnership and encourage and support any new approaches.	• Contact local Community Councils and local interest groups within the LMP area in order to develop management approach that reflects their aspirations and secures benefits to the local residents and forest users.	• Contact with Community Councils and local interest groups will be recorded by LMP Forester and monitored formally at LMP's 5 years review and 10 years revision.

To contribute to climate change mitigation measures maintaining sustainable timber production, creating areas of new woodland and facilitating woodfuel and renewable energy production.	• Diversify age structure and species composition of our forests making use of silvicultural mixtures and disease resistant species to increase resilience to pathogens and climate change.	• Implementation of the general future habitat proposals will be monitored formally at LMP's 5 years review and 10 years revision. Detailed restock proposals will be developed post-felling, during the workplan process and 75% site visit and will be monitored annually through restock programme. • Areas affected by *Dothistroma needle blight* (DNB) will be monitored annually by Planning team and if needed, felled early to maximise timber recovery.
	• Continue to support the development of local timber and woodfuel businesses and seek out new outlets for small roundwood to help reduce timber miles.	• The production forecast will be produced by Planning team; volumes might fluctuate as forest health felling and windblow clearance will need to be accommodated. The forecast will be monitored by Programme Manager and Planning Manager.
	• Continue to make the land within the National Forest Estate available to windfarm and hydro scheme development and to work with developers to deliver projects of maximal environmental and economic benefit.	• The possible change in land use will be monitored by Planning and Estate teams respectively.

***75% site visit** is carried out at a point when about 75% of a harvesting coupe is felled and is attended by representatives of District teams (Harvesting, Forest Management, Planning, Environment, CRT, Deer Management and Civil Engineers); at this point restock proposal (as per FDP/LMP) is discussed and decision about future species composition is made. Other site specific issues (e.g. water management, protected species, landscape etc.) are also discussed. Decisions made during 75% site visit are recorded in workplan document.

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Certificate of Approval for Tree Felling

This is to certify that tree felling under

Forest Design Plan ref. 030/516/416
Ben Wyvis and Strathpeffer Woodlands

has been approved by the Forestry Commission as being in accordance with Government policy for the sound management of a renewable resource.

This certificate is valid only for the period of the felling approval.

Signed .....
Forestry Commission Officer

Date .....9 JUNE 2017.....

6.1 CSM6 Form

CSM 6 Appendix 1b

FOREST ENTERPRISE - Application for Forest Design Plan Approvals in Scotland

Forest Enterprise - Property

Forest District:	North Highland Forest District
Woodland or property name:	Ben Wyvis & Strathpeffer Woodlands
Nearest town, village or locality:	Garve
OS Grid reference:	NH 4248 6008
Local Authority district/unitary Authority:	Highland Council

Areas for approval

	Conifer	Broadleaf
Clear felling	1917.56	0.00
Selective felling	0.00	0.00
Restocking	1007.20	480.95
New planting (complete appendix 4)	0.00	55.27

1. I apply for Forest Design Plan approval*/~~amendment approval*~~ for the property described above and in the enclosed Land Management Plan.

2. * I apply for an opinion under the terms of the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 for afforestation*~~/deforestation*/~~ roads*/ ~~quarries*~~ as detailed in my application.

3. I confirm that the initial scoping of the plan was carried out with FC staff on 13th of April 2016

4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.

5. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included.

6. I confirm that consultation and scoping has been carried out with all relevant stakeholders over the content of the of the design plan. Consideration of all of the issues raised by stakeholders has been included in the process of plan preparation and the outcome recorded on the attached consultation record. I confirm that we have informed all stakeholders about the extent to which we have been able to address their concerns and, where it has not been possible to fully address their concerns, we have reminded them of the opportunity to make further comment during the public consultation process.

7. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed ..... Forest District Manager

Signed ..... Conservator

District North Highland Forest District

Highland & Islands Conservancy

Date 02.05.2017

Date of Approval: 09 JUNE 2017

Date approval ends: 08 JUNE 2027

*delete as appropriate

Received
08 JUN 2017
H & I Conservancy

CSM 6 Appendix 4

FOREST ENTERPRISE - Application for Approval of New Planting

1. Forest Enterprise – Property

Forest District:	North Highland
Woodland or property name:	Longart and Torrachilty Forests
Nearest town, village or locality:	Garve
OS Grid reference:	NH 3800 6840; NH 3936 6602; NH 4542 6192; NH 4933 6206; NH 4940 6203
Local Authority district/unitary Authority:	Highland Council

2. Proposed areas to nearest tenth of a hectare

New Planting	55.27 ha
Open Ground	0.0ha
Total	55.27 ha

3. Special areas and protected land

Designation	Area Name or Number	Comments
None		

4. Proposal details of new planting

Area Name or number	Gross Area (Ha)	P Year	Spp	Area (Ha)	Open Ground (Ha)	Field Identifier	Comments
Longart Allt-an t-Seabhaig	22.09	2026	NMB	22.09	0.00	N/A	Riparian woodland
Longart Allt Leacach	6.96	2021	NMB	6.96	0.00	N/A	Riparian woodland
Torrachilty Allt Gleann Sgathaich	2.92	2022	NMB	2.92	0.00	N/A	Riparian woodland
Torrachilty River Sgitheach	16.96	2025	NMB	16.96	0.00	N/A	Riparian woodland
Torrachilty River Sgitheach	6.34	2018	NMB	6.34	0.00	N/A	Native woodland

I apply for Authority to plant as above and as shown on the attached map – please see Maps 8 – New planting, for details.
I undertake to obtain the necessary permissions from the appropriate statutory body before commencing work under any approval which is granted.

Signed: ..... Forest District Manager

Signed: ..... Conservator

District: **North Highland**

Conservancy: **Highland & Islands**

Date: 02.05.2017

Approval Date 09 JUNE 2017

Date approval ends: 08 JUNE 2027

Supporting documents: Designated Site Planning

Designated sites covered by this document:

Ben Wyvis NNR
Ben Wyvis SAC
Ben Wyvis SPA
Ben Wyvis SSSI
Glen Affric to Strathconon SPA
Comrie GCR

Dates of Plan:

Start date of plan: 2017
End date of plan: 2022

The Land Management Plan is approved for 10 years; however this Designated Site Planning document will be reviewed at year 5 in line with the mid0term review to ensure that it is still fit for purpose

Management Aims and Objectives:

The aim of this plan is to fully take into account any management and mitigation required for the designated land on and around the National Forest Estate based on the area covered by the Ben Wyvis & Strathpeffer Woodlands Land Management Plan.

This plan aims to act as a basis for targeted management for the notified features and to recognise other operations which might affect them through general use and management of land on the National Forest Estate.

Section 1. Designated Sites Covered by this Land Management Plan

Designated site name	PA site code	Site type	Total area of designated site (ha)	Area within this plan (ha)	% within this plan	% on NFE
Ben Wyvis NNR	5007	NNR	2300.39	N/A	N/A	N/A
Ben Wyvis SAC	8205	SAC	5385.22	0.1	N/A	N/A
Ben Wyvis SPA	8470	SPA	2178.41	N/A	N/A	N/A
Ben Wyvis SSSI	195	SSSI	5415.64	26.95	0.49	0.49
Glen Affric to Strathconon SPA	10233	SPA	50419.34	N/A	N/A	N/A
Comrie Geological Conservation Review site	2295	GCR	1.37	0.56	41%	41%

Table 1. Summary of designations relating to this plan.

Map 3 - Environmental features highlights the location of the above designated sites in relation to the LMP boundary and the NFE management area. The plan also shows the other designated sites in Ross-shire for context.

For further detail on the designations listed in Table 1, refer to the SNH documentation at the SiteLink page at www.snh.gov.uk/SNHi and on the North Highland Forest District electronic filing system (T/Environment/Designations).

The remainder of this plan will refer in detail only to the elements of the above designated sites on NFE that have the potential to be directly affected by our management.

Section 2. Features and / adjacent to the NFE and condition

Only features that exist on NFE within this LMP or have the potential to be directly affected by our management operations are listed in the table below:

Site type	Site code	Feature description	SCM Condition (date assessed)	Condition on NFE	Management Classification (if relevant)
SAC	8205	Blanket bog Dry heaths Acidic scree Plants in crevices on acid rocks Tall herb communities Alpine and subalpine heaths Montane acid grassland	No information	N/A	No outstanding remedies
SPA	8470	Dotterel *(Charadrius morinellus)* breeding	Unfavourable No change 2011	N/A	No outstanding remedies
SPA	10233	Golden eagle *(Aquila chrysaetos)* breeding	Favourable Maintained 2011	N/A	No outstanding remedies
SSSI	195	Blanket bog Dotterel (Charadrius morinellus) Breeding Dystrophic and oligotrophic lochs Quaternary of Scotland Upland assemblages	Unfavourable No change 2008 Unfavourable No change 2011 Favourable Maintained 2010 Favourable Maintained 2004 Favourable Maintained 2003	Unfavourable recovering N/A N/A N/A N/A	The existing plantation will be felled and /or mulched in order to remove non-native conifers from the designated site and from the adjacent area. No outstanding remedies
		Vascular plant assemblages	Favourable Recovered 2007	N/A	
GCR	2295	Rock outcrop (Moine)	Current	Current	No outstanding remedies

Table 2: Features on / adjacent to NFE within this LMP

Dotterel *(Charadrius morinellus)*

Conservation of Dotterel on Ben Wyvis SPA is of outstanding importance, as it supporting a nationally important breeding population. Between 1987 and 1993 an average of 20 pairs of dotterel (one of the highest breeding population densities in Britain) bred within the Ben Wyvis SPA, representing 2% of the British breeding population. In spring, SPA acts as a staging area for dotterel that go on to breed elsewhere in Britain and in Scandinavia. It is also important to the species range in Britain as it lies outside the core population in the Grampians.

Ben Wyvis SPA supports also other important montane species, such as golden eagle, golden plover, ptarmigan, and ring ouzel.

Golden eagle *(Aquila chrysaetos)*

Glen Affric to Strathconon SPA regularly supporting a population of European importance od golden eagle (Annex 1 species), with 10 active territories (as recorded in 2003 – 2.2% of Great Britain's population). Each pair needs a territory of c. 3000 acres.

The SPA contains some of the highest mountains north of the Great Glen and supports rich diversity of montane habitats, such as acid grassland, heats, blanket bog, bog woodlands and nutrient-poor lochs. The pinewoods within the SPA make up one of the largest areas of Caledonian forest in the UK.

Blanket bog and other upland habitats

Blanket bog covers the lower slopes of Ben Wyvis and is notable (especially on the southern side of the hill) for the amount of dwarf birch *(Betula nana)* and alpine bearberry *(Arctous alpinus)*.

Ben Wyvis supports a diverse mosaic of upland habitats such as summit heat, lochs, high level springs and flashes, bryophyte-rich snowbeds, montane and sub-montane dwarf-shrub heath. Summit heaths, dominated by woolly fringe-moss *(Racomitrium lanuginosum)* and stiff sedge *(Carex bigelowii)* is well represented. The SSSI supports diverse upland plant assemblages, including approximately 50 nationally scarce species, including flowering plants, lichens and mosses. Nationally rare plants present include alpine foxtail *(Alopecurus alpinus*), chestnut rush *(Juncus castaneus*) and alpine saxifrage *(Saxifraga nivalis)*.The lochs are nutrient poor and characteristic of the montane glaciated landscape. Species such as awlwort *(Subularia aquatica)*, shoreweed *(Littorella uniflora)* and quillwort *(Isoetes lacustris)* dominate the water.

Moine rock outcrop

The outcrop of Moine rocks at Comrie consists 2 main rock groups: amphibolite (metamorphosed igneous rock) – with visible dark green crystals of amphibole; and psammitic gneiss (metamorphic rock of sedimentary origin) – nearly white in colour. The rocks at Comrie are important as they offer rare clues regarding the conditions in which the rocks were formed, and the processes which affected them during a period of mountain formation in northern Scotland about 400 million years ago.

Section 3: pressures and proposed actions

Site type	Feature description	Pressures	Proposed action	Timescale	Location map highlighting work & other key limiting factors
SSSI	Blanket bog Dotterel (Charadrius morinellus) Breeding	Forestry operations	Forest restructuring proposal takes into account the well documented effect the plantation type forestry has on the water table on the adjacent non-planted blanket bog. To relieve the negative effect on water table on adjoining Designated Site, FES is committed to forest restructuring under approved LMP, moving forest edge back by agreed distances, to be determined on a site a site basis. Removal of the forest from the area adjacent to the designated peatland site is likely to have positive effect on dotterel and golden plover populations noted on SSSI - reducing the edge effect.	Throughout the life of the Land Management Plan as and when required.	The proposed works are detailed in the Management Coupes and Future Habitats Maps, appended to this plan.
		Game/Fisheries management	Deer management will be undertakes to FES best practice standards to protect tree crops and maintain the quality and structure of open habitats.	Throughout the life of the Land Management Plan	Not mapped
		Plant pest and diseases	Crops will continue to be surveyed for Dothistroma needle blight infection.	Throughout the life of the Land Management Plan	Not mapped
SPA	Dotterel (Charadrius morinellus) Breeding	Forestry operations	Removal of the forest from the area adjacent to the designated peatland site is likely to have positive effect on dotterel (limited impact predicted, as the population favours higher elevations, well above the existing forest edge) and golden plover population noted on SSSI - reducing the edge effect.	Throughout the life of the Land Management Plan	The proposed works are detailed in the Management Coupes and Future Habitats Maps, appended to this plan.
		Game/Fisheries management	Deer management will be undertaken to FES best practice standards to protect tree crops and maintain the quality and structure of open habitats.	Throughout the life of the Land Management Plan	Not mapped
SPA	Golden eagle *(Aquila chrysaetos)* breeding	Forestry operations	Currently there is no record of golden eagle nesting on the area covered by the Ben Wyvis & Strathpeffer Woodlands LMP. However, given the size of a territory required to support a breeding pair, and the relative close proximity of some of the forest blocks to the SPA boundary, it is likely that open hill areas within NFE ownership might be used in the future. All coupes proposed for felling will be surveyed prior to any operations taking place. All operations will adhere to FCS Guidance Note 32 – Forest Operations and birds in Scottish forests.	Throughout the life of the Land Management Plan	The proposed works are detailed in the Management Coupes and Future Habitats Maps, appended to this plan.
		Game/Fisheries management	Deer management will be undertaken to FES best practice standards to protect tree crops and maintain the quality and structure of open habitats.	Throughout the life of the Land Management Plan	Not mapped
GCR	Moine rocks outcrop	Forestry operations	The designated rock outcrop is located on the southern boundary of Achilty forest block and is currently outwith the proposed phase 2 felling coupe, located immediately to the north of the site. The Future habitat proposal states 'open', with the aim to keep the area open, exposed and accessible.	Throughout the life of the Land Management Plan	The proposed works are detailed in the Management Coupes and Future Habitats Maps, appended to this plan.

Table 3: Pressures and proposed actions

Section 4: Operations within the Land management Plan that could impact on the designated features on the NFE

Operation type	Detailed description of operation and method	Mitigation measures to be applied	Timing	Map reference & other relevant comments
Mulching of 1 coupe (Torrachilty) adjacent to Ben Wyvis SSSI	Standard on-site mechanical mulching of poor crop on deep peat.	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes. Water protection measures will be rigorously enforced and UKFS Forest and Water Guidelines will be followed. FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. (Felling 17 on Map 7 – CSMS Planned operations (felling and road construction)
Clearfell of 1 coupe (Torrachilty) within Ben Wyvis SSSI. Part of the coupe will mulched	Standard mechanical felling of trees by harvester and transport to roadside by forwarder for onwards transport by lorry. The extend of standard felling operation will be assessed during the operation. Areas where the ground condition and/or lack of brash are likely to result in causing damage to the organic soils, will be mulched to minimise any possible negative impact of forest operations.	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes. Water protection measures will be rigorously enforced and UKFS Forest and Water Guidelines will be followed. FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. (Felling coupe 16 on Map 7 – CSMS Planned operations (felling and road construction)
Clearfell of 1 coupe (Achilty), immediately to the north of the designated rock outcrop of Comrie GCR.	Standard mechanical felling of trees by harvester and transport to roadside by forwarder for onwards transport by lorry. The coupe boundaries will be clearly marked prior to harvesting operations taking place to ensure that no heavy machinery will cross over onto Comrie GCR. The restock of the area is outwith the LMP approval period. The designated area is marked as 'open' on Future habitats map,	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. The area is shown to the south of Felling coupe 55 on Map 7 – CSMS Planned operations (felling and road construction). It's also shown to the south of Restock coupe 85 on Map 7 - CSM6 Planned operations (restocking). The area is shown as 'open' on Map 6 – Future habitats.

Table 4: Operations within the LMP that could impact on features on the NFE.

Section 5. Operations within the Land Management Plan or aspects of the national Forest Estate within the FDP that could impact on Designated Sites adjacent to the NFE

Operation type	Detailed description of issue or operation	Proposed action and/or mitigation	Timing	Map reference & other relevant comments
Mulching of 1 coupe (Garbat) adjacent to Ben Wyvis SSSI	Standard on-site mechanical mulching of poor crop on deep peat.	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes. Water protection measures will be rigorously enforced and UKFS Forest and Water Guidelines will be followed. FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. (Felling coupe 1 on Map 7 – CSMS Planned operations (felling and road construction)
Clearfell of 1 coupes (Garbat) and 4 coupes (Torrachilty) adjacent to Ben Wyvis SSSI	Standard mechanical felling of trees by harvester and transport to roadside by forwarder for onwards transport by lorry.	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes. Water protection measures will be rigorously enforced and UKFS Forest and Water Guidelines will be followed. FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. (Felling coupes 15, 34, 45, 46 & 47 on Map 7 – CSMS Planned operations (felling and road construction)
Clearfell of 2 coupes in Grudie, 2 coupes in South Garve Hill and 2 coupes in Achilty, in relative proximity to Glen Affric to Strathconon SPA boundaries.	Standard mechanical felling of trees by harvester and transport to roadside by forwarder for onwards transport by lorry.	All work will be risk assessed by the FD Environment Team through the work plan and business plan processes. FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.	Throughout the life of the Land Management Plan	Map 5 - Management Coupes. (Felling coupes 8, 11, 12, 29, 39 & 55 on Map 7 – CSMS Planned operations (felling and road construction)

Table 5: Operations that could impact on Designated Sites adjacent to the NFE.

Section 6 Appropriate Assessment/s undertaken on work contained within the LMP

Appropriate Assessment for this Land Management Plan in relation to the Ben Wyvis SAC, SPA,SSSI and Glen Affric to Strathconon SPA are attached. FES will continue to consult with the FCS Species Ecologist, FCS Open Habitat Ecologist and SNH on any proposed changes to the LMP as per the tolerance table included, and a further Appropriate Assessment will be undertaken if required.

Section 7 Approvals, agreements & signatures

I confirm that the above management plan which covers the sections of Designated Sites shown in Table 1 of this Designated Site Planning Document in the Land Management Plan for Ben Wyvis & Strathpeffer Woodlands contains the necessary detail, content and mitigation measures to comply with the statutory requirements contained within the Nature Conservation (Scotland) Act 2004 and in particular in relation to Part 2, Chapter 1, Section 14 (e), which covers consents via an agreed management plan (i.e. "SNH's consent under section 13 is not required in relation to carrying out an operation of the type described in subsection (1) of that section – …….(e) in accordance with any plan relating to the management of land which has been prepared by the public body…and approved in writing by SNH.

SNH Signature …… Date ……..

SNH Name ……..

SNH Job Title ……..

Address……..

Email ……..

Contact telephone number ……..

FCS has a corporate requirement under UKWAS (2nd edition) and under the FCS Framework Document for FES (2010) to manage all designated sites in accordance with plans approved by the statutory authority, I therefore sign below to approve the contents of this plan in relation to the Designated Sites listed in Table 1 of this Designated Site Planning Document that fall within its

boundary on the NFE.

FCS Signature …… Date ……..

FCS Name ……..

Monument Management Plan

North Highland Forest District 2015

Vision

We are committed to undertaking conservation management, condition monitoring and archaeological recording at our significant historic assets; and to helping to develop, share and promote best-practice historic environment conservation management. We are proud to support *Our Place in Time: the Historic Environment Strategy for Scotland* and the emerging *Scottish Archaeology Strategy*; and often seek to contribute to the Scottish Archaeological Research Framework.

General background

The key **UK Forestry Standard (UKFS) good forestry practice requirement** in relation to the protection and conservation of scheduled monuments within our planning framework is that "*[1] Scheduled Monuments must not be damaged and consent must be obtained from the relevant historic environment authority for any works that have the potential to damage the monument"*. The key **UKFS good forestry practice requirement** in relation to the management of the historic environment within our planning framework is that "*[4] Forest management plans and operational plans should set out how important historic environment features, including veteran trees, are to be protected and managed"* (UKFS 2011, 13).

The key **UKFS good forestry practice guidelines** in relation to the conservation of the historic environment within our planning framework are that we should "*[18] Aim to maintain the open settings for features of historical interest; where appropriate monitor changes in vegetation and consider using grazing or mowing [cutting or flailing] as part of the management plan";* and *"[19] Manage public access so that open settings for [relevant] historic features are not subject to erosion or damage caused by visitor pressure"* (UKFS 2011, 22).

The **Strategic Directions for Scotland's national forest estate** set out our priorities in terms of integrated land management. The key priorities for the historic environment state that *"we safeguard archaeological sites through our planning and management and recognise special places and features with local cultural meaning"* and that:

- "*we will continue to undertake conservation management, condition monitoring and archaeological recording at significant historic assets; and*

- *that we will continue to work with stakeholders to develop, share and promote best-practice historic environment conservation management*" (FCS 2013, 52).

Forest District Planning and Environment teams will ensure that details of our significant historic assets are included within Forest Design Plans and Land Management Plans. Historic environment features are identified and **protected** within our Work Plans and that damage is avoided during forestry operations; and relevant designated historic assets (and significant undesignated historic assets) are actively managed within a programme of detailed archaeological recording and **conservation** management. Where appropriate, significant historic assets are **presented** to the public as part of the Forest District recreational framework (with interpretation panels and access paths).

Significant archaeological sites will be protected and managed following the UKFS *Forests and historic environment* guidelines (2011), the FCS policy document *Scotland's Woodlands and the Historic Environment* (2008) and the supporting *FES Historic Environment Planning Guidelines* (available from the FCS Archaeologist). Harvesting coupes, access roads and fence lines will be surveyed by Forest District staff prior to any work being undertaken in order to ensure that upstanding historic environment features can be marked and avoided. At restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Opportunities to enhance the setting of important sites will be considered on a case-by-case basis (such as the views to and from a significant designated site).

Scottish Historic Environment Policy Chapter 5 'The Conservation of the Historic Environment by Government Bodies in Scotland'

Designated Historic Assets Register

The implementation of SHEP5 requires the establishment of an **inventory of historic assets**[i]. The **Designated Historic Assets Register** contains information regarding all of the designated historic sites on Scotland's national forest estate. It includes sites from:

- **Scheduled Monuments** and **Listed Buildings** (individual designated features with **Monument Management Plans** and **Condition Surveys** respectively);
- the ***Inventory of Gardens and Designed Landscapes in Scotland***;
- the ***Inventory of Historic Battlefields*** (both non-statutory designations best considered by the relevant strategic plan); and also
- significant undesignated historic assets.

We also undertake a programme of detailed archaeological measured survey of our most significant sites in order to enhance the national historic environment record and inform conservation management.

Forester GIS Heritage Module

The implementation of SHEP5 also required the establishment of a comprehensive GIS based national historic environment inventory for the national forest estate[ii]. The FCS Archaeologist has the overall responsibility for the maintenance and update of the national forest estate **Forester GIS Heritage Module** geodatabase (as *system owner*); Forest District Environment Teams have responsibility for use (as *data owners*).

Any recent archaeological surveys that have been undertaken on behalf of FCS have been incorporated into the Heritage Module geodatabase - and any new archaeological surveys required (in unimproved upland areas for example, or areas within which the archaeological record is unusually rich) will be undertaken to the standards laid out in *FES Historic Environment Planning Guidelines.* This will ensure that undiscovered historic environment features are mapped and recorded prior to forestry establishment and management operations - and will ensure the continued comprehensive protection of the known archaeological resource.

Forest District Monument Management Plans

The implementation of SHEP5 also requires an ongoing programme of conservation management, condition monitoring and archaeological recording at relevant significant designated assets[iii]. The annual **Forest District Monument Management Plan** identifies and records any major conservation works, significant condition monitoring programmes and archaeological measured surveys undertaken. The FD MMP is a collaborative document, referencing our **Forest District Strategic Plans** and Historic Scotland Field Officer reports and condition scores.

The annual **Forest District Monument Management Plan** replaces individual MMPs, enabling a better overview and providing a more dynamic planning document of FD priorities.

North Highland FD MMP 2015

North Highland Forest District has a significant role to play in delivering the protection, conservation and presentation of the historic environment on Scotland's national forest estate.

Extract from Forest District Strategic Plan

"*The North Highlands is a special place. Today, the Flow Country of Caithness and Sutherland (a candidate for World Heritage Site status), the Assynt Geopark and the many Natura 2000 sites around our coastlines are recognised internationally. Through our land management planning, we will continue to identify where our resources can best be used to restore damaged habitats, protect our existing heritage sites and contribute to species conservation*" (2014, 32).

The **District Specific Actions** set out below reflect the wide range of our activity, including stakeholder involvement, protection mechanisms and specific site-based commitments.

National Key Commitment (Cared for)	**District Specific Action**
We will safeguard archaeological sites through our planning and management, and recognise special places and features with local cultural meaning	We will review our significant holding of archaeology during land management planning reviews, and create proposals that enhance high priority sites and develop viewing opportunities, thus building on our work with community-based interest groups. We will continue to survey the National Forest Estate to identify and protect significant new heritage sites.

Major Monument Actions

The main objective of historic environment conservation management is to ensure the stable condition of the relevant monuments. In general terms, their condition is monitored by Historic Scotland's Field Officers, who record condition (1-5, good - poor), risk (1-5, low – high) and priority (a score of over 5 has been used to indicate a monument with significant issues) and management recommendations proposed. All intrusive scrub vegetation and tree regeneration will be removed. If required, clearance will occur at least once every year and will be undertaken by FCS Forest District staff or contractors. All scrub vegetation and naturally regenerating trees within the relevant scheduled area will be cut off at ground level using appropriate hand or power tools and removed. Any seedlings will be removed by pulling out by hand. Bracken encroachment shall be controlled within appropriate areas as necessary on an annual basis through strimming and / or chemical spraying, as appropriate. Any harvesting work will be planned and organised to avoid any damage to the relevant monuments in the course of any harvesting and timber extraction. No replanting will take place within any scheduled areas. Major monument action (and associated survey and / or special condition monitoring) is recorded below. Scheduled Monument Consent will be necessary in regard to any works that may cause damage or disturbance within the scheduled area.

Scheduled Monument	NGR	Monument Name (those in bold are / will be highlighted in their respective Land Management Plan)	Major Management Action (year action due) and / or general comments / AMS (Archaeological Measured Survey)	Date of last Historic Scotland FO visit	Condition	Risk	Priority
426	ND047607	Bridge of Broubster, standing stones 1350m NE of		12/05/2009	1	1	1.41
440	ND072592	Carriside, chambered cairn 350m NW of		24/08/2009	1	1	1.41
550	ND205374	Golsary, broch on W bank of Burn of Golsary, Rumster Forest		07/09/2010	2	2	2.83
573	ND212372	Rumster, broch 200m WSW of, Forse		07/09/2010	1	1	1.41
591	ND279424	Toftgun, broch 365m SSE of, Loch of Camster		12/11/2009	1	1	1.41
1672	NH505585	**Knock Farril** hillfort	AMS (2011); new interpretation (2015)	15/04/2008	2	1	2.24
1758	NC567026	Achany, cairn 890m NW of		05/05/2009	2	2	2.83
1779	NC679390	Clach an Righ, stone circle 400m NNW of Dalharrold		29/09/2004	1	1	1.41

1784	NC557027	Druim Baile Fuir, stone circle, cairns, hut circles and enclosure		11/04/2007	4	1	4.12
1812	NC574055	**The Ord**, chambered cairns, cairns, settlements and field systems	AMS (2010); [1] Upgrade access path (this is an aspiration and will need Scheduled Monument Consent).	08/02/2012	2	1	2.24
1829	NC591103	**Altbreck**, broch 1650m ESE of Dalchork Bridge	AMS (2013); [1] fence area [2] provide conservation grazing [3] monitor impact with fixed point photography.	11/02/2010	2	2	2.83
1885	NH782944	**Skelbo Wood**, broch 300m SW of Glen Cottage	[1] Archaeological record (2012) [1] fence area [2] provide conservation grazing [3] monitor impact with fixed point photography.	14/09/2006	3	4	5
2395	NH727834	Red Burn, chambered cairn 500m S of Redburn Cottage		09/03/2010	2	1	2.24
2510	NC689416	**Rosal**, deserted township	ALS (2014); [1] fence area [2] provide conservation grazing [3] provide new interpretation (2015)	10/11/2009	2	1	2.24
2511	NC701360	Bad an Leathaid, deserted township		24/08/2004	2	1	2.24
2512	NC702346	Truderscraig, deserted township, hut circles & clearance cairns		10/11/2009	2	1	2.24
2513	NC688348	Cnoc na h'Iolaire, hut circles & clearance cairns		27/10/2005	3	3	4.24
2514	NC687370	Cnoc na Gamhna, hut circles, burnt mound & clearance cairns	[1] Archaeological survey and mark out [2] careful harvesting of standing timber	29/04/2008	4	2	4.47
2515	NC683407	Rosal, hut circles	Careful harvesting of standing timber and removal of brash and windblow	18/09/2009	3	2	3.61
2517	NC689392	Meall a Choire Bhuidhe, hut circles	Careful harvesting of standing timber and removal of brash and windblow	06/03/2008	5	4	6.4
2518	NC686357	Allt a'Bhealaich, hut circles		10/11/2009	3	2	3.61
2519	NC696334	Cnoc Airigh an Leathaid, hut circles		27/10/2005	5	4	6.4
2520	NC718345	Leathad an Daraich, hut circles		18/09/2009	3	2	3.61
2521	NC673417	Allt Ceann na Coille, hut circles & field clearance cairns	Careful harvesting of standing timber and removal of brash and windblow	26/03/2009	4	4	5.66

2522	NC685398	Blar na Fola & Breac Dubh,hut circles		18/09/2009	3	2	3.61
2720	NH396628	**Little Garve Bridge**	Major masonry consolidation (2007)	15/02/2006	5	5	7.07
2914	NH721767	Scotsburn Wood, chambered cairn 550m NNE of Scotsburn House		30/03/2010	2	1	2.24
2915	NH726768	Scotsburn Wood, chambered cairn 820m NE of Scotsburn House		30/03/2010	2	1	2.24
2916	NH728767	Scotsburn Wood, cairn 910m ENE of Scotsburn House		30/11/2005	3	2	3.61
3129	NH747780	Lamington Park, long cairn 950m E of Lochan a'Chlaidheimh		05/03/2008	2	1	2.24
4022	NC303079	Cnoc Chaornaidh, chambered cairn 570m SW of		23/03/2010	2	2	2.83
4023	NC301081	Cnoc Chaornaidh, chambered cairn 560m WSW of		23/03/2010	2	2	2.83
4025	NC302101	Strathseasgaich, burnt mound 500m SW of		23/03/2010	1	1	1.41
4042	NC301091	Cnoc Chaornaidh, cairn 930m NW of		30/07/2008	2	2	2.83
4043	NC311097	Loch Ailsh, chambered cairn 900m SE of Strathseasgaich		23/03/2010	1	1	1.41
4044	NC300102	Strathseasgaich, chambered cairn 700m SW of		23/03/2010	1	1	1.41
4045	NC298084	Cnoc Chaornaidh, chambered cairn 180m NNE of, Stratheskie		23/03/2010	2	2	2.83
4046	NC313079	Allt Eileag, chambered cairn 800m SE of Cnoc Chaornaidh		30/07/2008	2	2	2.83
4054	NC290094	Aultivullin, cairn 650m SE of		30/07/2008	2	2	2.83
4505	NH681942	Creagan Reamhan, farmstead, kiln and fields 300m SSW of		28/03/2008	1	1	1.41

4560	NC608112	Meall Meadhonach, hut circles, field system and shielings 750m SW of		20/08/2008	2	2	2.83
4563	NC619145	Dalnessie, settlement N of Feith Osdail		22/08/2008	2	1	2.24
4564	NC314091	Cnoc Chaornaidh, chambered cairn, cairn and long mound E of		30/07/2008	3	2	3.61
4569	NC622096	Loch Tigh na Creige, house 200m N of E end of		11/02/2010	2	2	2.83
4727	NH716804	Carn a Chait cairn		30/03/2010	2	1	2.24
4743	NH731786	Provost`s Well, hut circles and field system 150m NW of		05/03/2008	2	1	2.24
4750	NH656722	Carn na Croiche chambered cairn		11/05/2009	3	2	3.61
4752	NH730798	Carn Liath long cairn		05/03/2008	1	1	1.41
4760	NH728784	Provost's Well, homestead and enclosure 550m WSW of		05/03/2008	2	1	2.24
4763	NH734834	Redburn Cottage, long cairn 880m SE of		30/11/2005	3	2	3.61
5078	NC614099	Loch Tign na Crieg, farmstead 600m NNE of NW end of		11/02/2010	2	2	2.83
5081	NC597149	Loch Beag na Furalachd, cairn and shielings 1175m ESE of SW end		20/08/2008	1	1	1.41
5084	NC623139	Achadh nan Eun, shieling 1400m N of		20/08/2008	1	1	1.41
5090	NC615103	Creagan Tigh na Creige, shielings 600m W of		22/02/2010	1	1	1.41
5093	NC619124	Meall Meadhonach, settlement and shielings 900m N of		20/08/2008	1	1	1.41
5153	NC603093	Loch Tigh na Creige, settlement 650m W of W end of loch		11/02/2010	3	2	3.61
5154	NC625124	Achadh nan Eun, shielings		22/02/2010	2	2	2.83

5159	NC602146	Loch Beag na Fuaralachd, shielings 1000m SW of SW end of		22/08/2008	1	1	1.41
5160	NC618096	Loch Tigh na Creige, sheepfold 300m NW of NE corner of		11/02/2010	2	1	2.24
5161	NC604124	Meall Meadhonach, sheepfold 1550m NW of		22/08/2008	2	1	2.24
5162	NC624097	Tighcreag, hut circle 500m WSW of		11/02/2010	3	2	3.61
5194	NC607120	Meall Meadhonach, hut circle and field system 1200m WNW of		22/02/2010	2	1	2.24
5299	ND058593	Lorg an Fhamhair, footprint carving		16/03/2010	1	1	1.41
5300	NC589138	Cnoc a' Bhreac-leathaid, shielings and cairnfield 700m NNE of		22/02/2010	2	2	2.83
5301	ND176492	Halsary, standing stones 450m WNW of and 620m NW of		24/08/2009	1	1	1.41
5305	ND073593	Carriside, hut circle 350m N of		24/08/2009	1	1	1.41
5306	ND048607	Bridge of Broubster, limekilns 1450m ENE of		12/05/2009	1	1	1.41
5309	NC618097	Loch Tigh Na Creige, hut circle 350m N of NE corner		11/02/2010	2	1	2.24
5401	NC600149	Loch Beag na Fuaralachd, prehistoric settlement 950m SW of SW end of		22/08/2008	1	1	1.41
5406	ND067593	Carriside, cairns 750m NW of		24/08/2009	2	1	2.24
5462	NH580980	Invershin Primary School, settlement 760m NE of and 750m ENE of		05/05/2009	3	2	3.61
5470	NH586966	Invershin Farm, settlement and burnt mound 1200m E of		05/05/2009	2	2	2.83
5483	NH761932	Carn an Fheidh long cairn		29/04/2009	1	1	1.41

5484	NH786942	Glen Cottage, long cairn 520m SE of		28/03/2008	2	2	2.83
5493	NH771897	Davochfin, chambered cairn 700m NNW of		24/04/2009	2	2	2.83
5497	NH579965	Invershin Farm, settlement and burnt mound 500m E of		05/05/2009	2	1	2.24
5498	NH579977	Invershin Primary School, settlement 600m E of		05/05/2009	3	2	3.61
5563	NC592102	**Altbreck**, homestead 1800m ESE of Dalchork Bridge	AMS (2012) [1] fence area [2] provide conservation grazing [3] monitor impact with fixed point photography.	11/02/2010	2	1	2.24
5564	NC699438	Dalvina Lodge, hut circles 320m SE and 450m SE of		09/04/2010	2	2	2.83
5565	NC698428	Dalvina Lodge, settlements 700m SSE of and 1050m S of		09/04/2010	3	1	3.16
5573	NH772926	Proncy, hut circle 330m NNE of		18/03/2008	1	1	1.41
5627	NC693428	Dalvina Lodge, hut circle and field system 1130m SSW of		09/04/2010	1	1	1.41
5628	NC697426	Dalvina Lodge, hut circle 1300m S of		09/04/2010	1	1	1.41
5663	NC665509	**Cracknie**, souterrain and settlement	AMS (2012)	09/04/2010	1	1	1.41
5799	ND285409	Toftgun, cairn and shieling 1950m SSE of		12/11/2009	1	1	1.41
5898	NH771892	Camore Wood settlement	AMS (2012) [1] consider conservation grazing [2] monitor impact with fixed point photography	29/04/2009	3	3	4.24
10942	NH685867	Creag an Fhithich, fort, Dounie Wood	AMS (2013)	09/03/2010	2	2	2.83
11056	NH411566	Carn na Buaile, fort 750m NNW of Comrie, Contin		15/04/2009	2	2	2.83

Listed Buildings

HB Number	Grid Ref	Designation	LB Name	Comments
52317	NH688744	A	Inchindown Underground Fuel Reservoir	Underground and unused; managed decay.

[i] [5.11] Organisations must be aware of the designated historic assets in their estate and should either establish and maintain an inventory of assets, or ensure that their existing property/asset management systems take account of historic aspects. Such assets might include: a building or group of buildings; part of a building (eg a retained façade); an individual archaeological site or monument or a group of them. Priority in all activities should be given to designated assets (scheduled monuments; listed buildings; conservation areas; gardens and designed landscapes or battlefields on non-statutory Inventories (see Chapter 2)). This record should where possible incorporate a statement of the asset's significance based on available information.

[ii] [5.12] Historic assets that are not scheduled, listed or on non-statutory Inventories – particularly archaeological features – may be material considerations in the planning system or require mitigation in advance of development and bodies should normally also record the location and, if known, the extent of such assets. These basic data are available from RCAHMS and from local Historic Environment Records.

[iii] [5.15] A fundamental requirement of the SHEP is to maintain a system of regular condition surveys for designated assets (no more than 5 years apart), appropriate to the sort of historic asset - buildings will require a very different approach from, for instance, archaeological earthworks. Such a survey cycle should not replace any more intensive programme of inspection, for example for health and safety reasons such as to ensure that stonework is stable. These reports should identify and prioritise necessary repair and major maintenance requirements.

REQUEST FOR DETERMINATION UNDER THE E.I.A. (FORESTRY) (SCOTLAND) REGULATIONS 1999	
OPERATION	**New Planting** (please see Maps 8 - New Planting for detail)
LOCATION	Longart & Torrachilty Forests
GRID REFERENCE	NH 3800 6840; NH 3936 6602; NH 4549 6193; NH 4933 6206; NH 4940 6203
IS THE LOCATION OF THE PROPOSED WORKS WITHIN A "SENSITIVE AREA", AS DEFINED IN THE REGULATIONS? IF SO, WHAT TYPE OF SENSITIVE AREA?	No
IF OPERATION IS AFFORESTATION, DEFORESTATION OR FOREST QUARRIES, WHAT AREA IS INVOLVED?	55.27 ha
IF OPERATION IS FOREST ROADS, TRACKS OR PATHS, WHAT IS SPECIFICATION AND WHAT LENGTH & WIDTH IS INVOLVED?	**N/A**
IS THE PROPOSED OPERATION IMMEDIATELY ADJACENT TO AN AREA OF THE SAME PROJECT TYPE WHICH HAS BEEN COMPLETED SINCE 6TH SEPT.1999? IF SO, GIVE DETAILS.	No
PROPOSED TIMING	New planting - 2018 to 2027
STATE ANY PERCEIVED IMPACT ON THE FOLLOWING:	
ARCHAEOLOGY	No impact is anticipated. Full GIS record exist and archaeology will be identified by workplan process and walk over survey prior to commencement of operations.
CONSERVATION	Increase in area of riparian and native woodland will benfit aquatic environment. Native woodland will create windfirm forest edge. Positive impact is anticipated, with an overall increase of afforested area and increased carbon sequestration
LANDSCAPE	These areas are not prominent in the landscape. Positive impact anticipated from new planting , as the proposed planting will link existing woodland areas.
WATER	Positive impact anticipated due to creation of riparian woodland
RECREATION / ACCESS	No negative impact anticipated.
PEOPLE	No negative impact anticipated.
OTHER INFORMATION	None
SIGNED & DATED	Agata Baranska, 2nd of May 2017

REQUEST FOR DETERMINATION UNDER THE E.I.A. (FORESTRY) (SCOTLAND) REGULATIONS 1999	
OPERATION	**Road Construction** (please see Maps 7 -Planned Operations)
LOCATION	Ben Wyvis & Strathpeffer Woodlands LMP area
GRID REFERENCE	NH 4248 6008
IS THE LOCATION OF THE PROPOSED WORKS WITHIN A "SENSITIVE AREA", AS DEFINED IN THE REGULATIONS? IF SO, WHAT TYPE OF SENSITIVE AREA?	No
IF OPERATION IS AFFORESTATION, DEFORESTATION OR FOREST QUARRIES, WHAT AREA IS INVOLVED?	N/A
IF OPERATION IS FOREST ROADS, TRACKS OR PATHS, WHAT IS SPECIFICATION AND WHAT LENGTH & WIDTH IS INVOLVED?	**Forest Road Construction (Cat 1a)** **Grudie extension** - 835m long - 15m wide at NH 2921 6294 **South Garve Hill spur road** - 255m long - 15m wide at NH 3602 6287 **Achilty Loch Achonachie** - 680m long - 15m wide at NC 4301 5538 **Achilty extension** - 205m long - 15m wide at NH 4187 5624 **Achilty new road** - 160m long - 15m wide at NH 4437 5814 **Achilty new entrance** - 110m long - 15m wide at NH 4471 5771 **Garbat** - 365m long - 15m wide at NH 4192 6691 **Strathrannoch extension** - 225m long - 15m wide at NH 4094 6950 **Strathgarve spur road** - 1340m long - 15m wide at NH 4013 6253 **Loch na Crann spur road** - 110m long - 15 m wide at NH 4522 5804 **Corriemoillie extension** -- 375m long - 15m wide at NH 3680 6370
IS THE PROPOSED OPERATION IMMEDIATELY ADJACENT TO AN AREA OF THE SAME PROJECT TYPE WHICH HAS BEEN COMPLETED SINCE 6TH SEPT.1999? IF SO, GIVE DETAILS.	Achilty new road, and Achilty new entrance projects are not extention of existing roads. All of the remaining proposed roads are extention of existing roads.
PROPOSED TIMING	Roading - 2017 to 2027
STATE ANY PERCEIVED IMPACT ON THE FOLLOWING:	
ARCHAEOLOGY	No impact is anticipated. Full GIS record exist and archaeology will be identified by workplan process and walk over survey prior to commencement.
CONSERVATION	No environmental impact is anticipated. Full GSI record exists and species/habitat interest will be identified by workplan process and walk over survey prior to commencement.
LANDSCAPE	No landscape impact is anticipated from internal roading.
WATER	No impact is anticipated.
RECREATION / ACCESS	The expansion of the forest road network will improve the access and recreational value of the forest
PEOPLE	No issues foreseen
OTHER INFORMATION	None
SIGNED & DATED	Agata Baranska, 27th of March 2017

Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Environmental Impact Assessment
Screening Opinion Request Form

Please complete this form to find out if you need consent from Forestry Commission Scotland, under the **Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017**, to carry out your proposed forestry project. Please refer to Schedule 2 Selection Criteria for Screening Forestry Projects under Applying for an opinion. If you are not sure about what information to include on this form please contact your local Conservancy office.

Proposed Work

Please put a cross in the box to indicate the type of work you are proposing to carry out. Give the area in hectares and where appropriate the percentage of conifers and broadleaves

Proposed Work	select	Area in hectares	% Conifer	% Broad-leaves	Proposed work	select	Area in hectares
Afforestation	☐				Forest roads	☐	
Deforestation	☒	363.61	100%	-	Forest quarry	☐	
Location of work		Garbat & Torrachlity					

Description of Forestry Project and Location

Provide details of the forestry project (size, design, use of natural resources such as soil, and the cumulative effect if relevant).

Please attach map(s) showing the boundary of the proposed work and other known details.

Removal of existing poor quality conifer crop (by standard harvesting and on-site mulching/felling to recycle) from 2 deep peat sites - Torrachilty (343.73 ha) and Garbat (19.88 ha) and subsequent peatland restoration works (e.g. drain and furrow blocking). Please see Map 4 - Analysis & concept, Map 5 - Management Coupes and Map 6 -Future habitats for details.

Provide details on the existing land use and the environmental sensitivity of the area that is likely to be affected by the forestry project.

Both areas proposed for peatland restoration are located on slopes of Ben Wyvis, and are currently categorised as High Forest - non-native conifer plantation, planted on deep peat. The proposed peatland restoration area in Torrachilty partially lies within Ben Wyvis SSSI (26.95 ha) and is immediatelly adjacent to Ben Wyvis NNR & Ben Wyvis SAC.

Description of Likely Significant Effects

Provide details on any likely significant effects that the project will have on the environment (resulting from the project itself or the use of natural resources) and the extent of the information available to assist you with this assessment.

No likely significant effects anticipated. Removal of non-native conifers of slow growth

and poor quality from area of deep peat, partially located within Ben Wyvis SSSI, and immediately adjacent to Ben Wyvis NNR & Ben Wyvis SAC, will remove the hard forest edge and increase the open land area available for waders; following the peatland restoration works (e.g. drain and furrow blocking) the increase in carbon sequestration and positive impact on hydrology on adjacent peatland SAC is anticipated. Removal of hard conifer edge from the upper slopes of Ben Wyvis is likely to have a positive effect on landscape. Please see Map 3 - Environmental Features, Map 5 - Management coupes, Map 6 - Future habitats, peat depth maps & ESC reports for proposed peatland restoration areas (Torrachilty north-east and Garbat north) for more details.

Include details of any consultees or stakeholders that you have contacted in order to make this assessment. Please include any relevant correspondence you have received from them.
SNH, SEPA, RSPB. Please see Appendix III - External consultation record for more details.

Mitigation of Likely Significant Effects
If you believe there are likely significant effects that the project will have on the environment, provide information on the opportunities you have taken to mitigate these effects.
All works will be risk assessed by Forest District Environment Team through work plan and business plan processes. UKFS Forest & Water Guidelines and FC Guidance Note 32: forest operations and birds in Scottish forests will be adhered to.

Sensitive Areas	
Please indicate if any of the proposed forestry project is within a sensitive area. Choose the sensitive area from the drop down below and give the area of the proposal within it.	
Sensitive Area	Area
Deep peat soil	363.61 ha
Sites of Special Scientific Interest (SSSI)	26.95 ha
National Nature Reserve (NNR)	Adjacent
Special Area of Conservation (SAC)	Adjacent
Select...	

Property Details			
Property Name:	Garbat & Torrachilty Forests		
Business Reference Number:	N/A	Main Location Code:	N/A
Grid Reference: (e.g. NH 234 567)	NH 4266 6983 , NH 4777 6414	Nearest town or locality:	Garve, Strathpeffer

Local Authority:	The Highland Council

Owner's Details				
Title:	Mr	Forename:	Tim	
Surname:	Cockerill			
Organisation:	Forest Enterprise Scotland - North Highland Forest District		Position:	Forest District Manager
Primary Contact Number:	0300 067 6841		Alternative Contact Number:	
Email:	NorthHighland.FD@forestry.gsi.gov.uk			
Address:	North Highland Forest District, The Links, Golspie Business Park			
Golspie				
Postcode:	KW10 6 UB		Country:	
Is this the correspondence address?	Yes			

Agent's Details				
Title:	Mrs	Forename:	Agata	
Surname:	Baranska			
Organisation:	Forest Enterprise Scotland - North Highland Forest District		Position:	Planning Forester
Primary Contact Number:	0300 067 6097		Alternative Contact Number:	0791 905 7647
Email:	agata.baranska@forestry.gsi.gov.uk			
Address:	North Highland Forest District, The Links, Golspie Business Park,			
Golspie				
Postcode:	KW10 6 UB		Country:	Scotland
Is this the correspondence address?	Yes			

Office Use Only	
GLS Ref number:	

Forestry Commission Scotland

Appropriate assessment of forestry proposals which are likely to have a significant effect on a European site.

(The Conservation of Natural Habitats, &c.) Regulations 1994. Regulation 48.)

1a. Name of European site affected by the application and current designation status.

1. Ben Wyvis SAC & SPA

1b. Name of Component SSSI if relevant

Ben Wyvis

2. Features of European interest, whether priority or non-priority; and conservation objectives for qualifying interests

Conservation objectives for qualifying interests:

a) Ben Wyvis SPA:

- Dotterel *(Charadrius morinellus)*

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.

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

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

b) Ben Wyvis SAC:

- Blanket bog
- Dry heaths
- Acidic scree
- Plants in crevices on acid rocks
- Tall herb communities
- Alpine and subalpine heath
- Montane acid grassland
- Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels

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

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

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

c) **Ben Wyvis SSSI**

- Blanket bog
- Dotterel *(Charadrius morinellus*)
- Dystrophic and oligotrophic lochs
- Quaternary of Scotland
- Upland assemblage
- Vascular plant assemblages

To avoid deterioration of the qualifying habitats and habitats of the qualifying species (listed above) or significant disturbance to the qualifying species and habitats, thus ensuring that the integrity of the site is maintained. Please see points a & b for specific requirements.

2. DETAILS OF PROPOSAL

Name: Ben Wyvis & Strathpeffer Woodlands Land Management Plan
Applicant: Reference: 030/516/416

Description of proposal: Agreement of a Land Management Plan for the National Forest Estate in Ben Wyvis & Strathpeffer Woodlands area, along with a Designated Site Planning Section covering multiple designated sites. This plan sets out what management through the Land Management Plan will be carried out and also specific measures for management of the designated sites. The overall aim of the plan is to set out the long-term aims for the NFE in central Ross-shire, agree specific measures that will benefit the designated sites, and also show how Forest Enterprise Scotland will manage operations to mitigate any potential damage or disturbance.

Operations:

- ☐ Clearfell
- ☐ Restocking
- ☐ Deer management.
- ☐ Specific management operations for qualifying habitat and species, including pulling of the forest edge away from a designated site boundary, modification of ground vegetation and tree canopy structure in relation to open habitat conservation and marking and monitoring of qualifying features

Mitigation:

The proposal is over ten breeding seasons therefore there is potential for disturbance to breeding birds. Ben Wyvis SPA is completely outside NFE boundaries. As part of operations, mitigation is included to reduce environmental impacts of proposals on breeding birds. This includes:

FCS Guidance Note32 –Breeding birds in Scottish Forests will be implemented to ensure that no breeding birds will be disturbed linked to forestry works.

Bird surveys will be undertaken prior to operations taking place; additional surveys will be undertaken when resources allow. Mitigation will be planned to correspond with FC Guidance Note 32.

4. Assessment of impact on European interest.

4.1

Is the proposal directly connected with or necessary to the management of the site?
NO (if Yes go to 5.)

4.2

Is the proposal likely to have a significant effect on the European interest on the designated site? No (if yes assess impact on site)

The restructuring of the forest - pulling back the forest edge away from the boundary of the designated site results in increase of open space available to birds for breeding and foraging, and is likely to improve the hydrology of the designated peatland. All the forest operations will follow the UKFS best practice requirements. FC Guidance note 32: Forest operations and birds in Scottish forests.
The proposal will benefit the qualifying species and habitats.

Conclusion – Significant effect unlikely.

4.3 Summary of assessment in relation to possible impacts

N/A

4.4 Any other comments

N/A

4.5 What would be the outcome on the site if the proposals not approved.

If these proposals were not approved, there would be restriction on the development of beneficial habitat preservation and restructuring.

5 Conclusions

Will the proposal adversely affect the integrity of the European site:
No

6 Conditions required (if any)

None required, as mitigation built into planning and operational phases.

Signed

Woodland officer/Area Officer:
Date :

Ops Manager/ Conservator:
Date:

Ben Wyvis & Strathpeffer Woodlands Land Management Plan 2017 - 2027

Forestry Commission Scotland

Appropriate assessment of forestry proposals which are likely to have a significant effect on a European site.

(The Conservation of Natural Habitats, &c.) Regulations 1994. Regulation 48.)

1a. Name of European site affected by the application and current designation status.

1. Glen Affric to Strathconon SPA

1b. Name of Component SSSI if relevant

N/A

2. Features of European interest, whether priority or non-priority; and conservation objectives for qualifying interests

Conservation objectives for qualifying interests:
Glen Affric to Strathconon SPA:

- Golden eagle *(Aquila chrysaetos)*

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.

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

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

2. DETAILS OF PROPOSAL

Name: Ben Wyvis & Strathpeffer Woodlands Land Management Plan
Applicant: Reference: 030/516/416

Description of proposal: Agreement of a Land Management Plan for the National Forest Estate in Ben Wyvis & Strathpeffer Woodlands area, along with a Designated Site Planning Section covering multiple designated sites. This plan sets out what management through the Land Management Plan will be carried out and also specific measures for management of the designated sites. The overall aim of the plan is to set out the long-term aims for the NFE in central Ross-shire, agree specific measures that will benefit the designated sites, and also show how Forest Enterprise Scotland will manage operations to mitigate any potential damage or disturbance.

Operations:

- ☐ Clearfell
- ☐ Restocking
- ☐ Deer management.
- ☐ Specific management operations for qualifying habitat and species, including pulling of the forest edge away from a designated site boundary, modification of ground vegetation and tree canopy structure in relation to open habitat conservation and marking and monitoring of qualifying features

Mitigation:

The proposal is over ten breeding seasons therefore there is potential for disturbance to breeding birds. Glen Affric to Strathconon SPA is completely outside NFE boundaries. As part of operations, mitigation is included to reduce environmental impacts of proposals on breeding birds. This includes:

FCS Guidance Note32 –Breeding birds in Scottish Forests will be implemented to ensure that no breeding birds will be disturbed linked to forestry works.

Bird surveys will be undertaken prior to operations taking place; additional surveys will be undertaken when resources allow. Mitigation will be planned to correspond with FC Guidance Note 32.

4. Assessment of impact on European interest.

4.1

Is the proposal directly connected with or necessary to the management of the site?
NO (if Yes go to 5.)

4.2

Is the proposal likely to have a significant effect on the European interest on the designated site? No (if yes assess impact on site)

All the forest operations will follow the UKFS best practice requirements. FC Guidance note 32: Forest operations and birds in Scottish forests.
The proposal will benefit the qualifying species and habitats.

Conclusion – Significant effect unlikely.

4.3 Summary of assessment in relation to possible impacts

N/A

4.4 Any other comments

N/A

4.5 What would be the outcome on the site if the proposals not approved.

N

5 Conclusions

Will the proposal adversely affect the integrity of the European site:

No

6 Conditions required (if any)

None required, as mitigation built into planning and operational phases.

Signed

Woodland officer/Area Officer:

Date :

Ops Manager/ Conservator:

Date

6 Conditions required (if any)

None required, as mitigation built into planning and operational phases.

Signed

Woodland officer/Area Officer:
Date :

Ops Manager/ Conservator:
Date:

Ben Wyvis & Strathpeffer Woodlands Land Management Plan 2017 - 2027

Ecological Site Classification Report

Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
242600	869700	NH426697	Baseline climate 1961-1990	Cool - Highly exposed - Wet	All species	Brash older than 18 months	No drainage installed	No fertiliser

Site Description and Variables

The site has a cool, highly exposed and wet climate. Exposure constraints may limit species options and the ability to thin woodlands without significant risk of windthrow. The soils are wet moisture status and vp2 very poor nutrient status. Wet soils may cause flotation problems for heavy machinery on establishment, and on harvesting, if only lightly crowned species are present (e.g. birch).

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	836.0	4.0	17.0	30.0	2.0(Wet)	0.5(VP2 Very poor)
Final	836.0	4.0	17.0	30.0	2.0(Wet)	0.5(VP2 Very poor)

Species	Abbr.	Suit(Ecol)	Suit(Timber)	Yield	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
[Corsican pine]	[CP]	●	●	0	AT5	●	●	●	●	●	▲	3.3(A)
[Lodgepole pine]	[LP]	▲	●	4	SNR	●	●	●	●	●	▲	3.1(A)
Macedonian pine	MCP	▲	▲	5	MD	●	●	●	▲	●	▲	3.1(C)
Maritime pine	MAP	●	●	0	AT5	●	●	●	●	●	▲	3.1(C)
Monterey/Radiata pine	RAP	●	●	0	MD	●	●	●	●	●	▲	3(C)
Scots pine	SP	▲	●	3	SMR	●	●	●	●	▲	▲	3.3(A)
Weymouth pine	WEP	●	●	0	SMR	▲	●	▲	●	●	●	3(C)
Norway spruce	NS	●	●	1	SNR	●	●	▲	●	▲	●	3.2(A)
Oriental spruce	ORS	●	●	0	SMR	▲	●	●	●	●	●	3(C)
Serbian spruce	OMS	●	●	2	SNR	●	●	▲	●	▲	●	3(B)
Sitka spruce	SS	●	●	3	SNR	●	●	●	●	●	●	3.2(A)
Sitka spruce (Imp.)	Imp.SS	●	●	4	SNR	●	●	●	●	●	●	3.2(A)
Douglas fir	DF	●	●	0	SMR	▲	●	●	▲	●	●	3.1(A)
[Hybrid larch]	[HL]	●	●	1	SMR	●	●	▲	▲	●	▲	3(A)
[Japanese larch]	[JL]	●	●	3	SMR	●	●	●	●	●	▲	3(A)
[European larch]	[EL]	●	●	0	SMR	●	●	▲	●	●	●	3(A)
Western red cedar	RC	●	●	0	SNR	●	●	▲	●	●	●	3.1(A)
Japanese red cedar	JCR	●	●	0	SMR	●	●	▲	●	●	●	3(B)
European silver fir	ESF	●	●	2	SMR	●	●	▲	●	●	●	3(B)
Grand fir	GF	●	●	0	SNR	▲	●	▲	●	●	●	3(A)
Noble Fir	NF	●	●	0	SMR	●	●	●	●	●	●	3(A)
Nordmann fir	NMF	●	●	0	MD	▲	●	●	●	●	●	3(C)
Pacific fir	RF	●	●	1	SMR	●	●	●	●	●	●	3.1(C)

Ecological Site Classification Report												
Leyland cypress	LEC			0	SMR							3(B)
Western hemlock	WH			0	SMR							3(A)
Giant redwood	WSQ			0	MD							3(B)
Coast redwood	RSQ			1	SNR							3(B)
Lawson's cypress	LC			1	SNR							3(B)
Downy birch	PBI			3	SNR							3.2(A)
Silver birch	SBI			3	SNR							3.2(A)
Big leaf maple	AMA			0	MD							3.1(C)
Norway maple	NOM			0	SNR							3(B)
Sycamore	SY			0	SMR							3.3(A)
Beech	BE			0	SMR							3.1(A)
Roble beech	RON			0	AT5							3.1(B)
[Ash]	[AH]			0	SNR							3(A)
Pedunculate oak	POK			0	SNR							3.1(A)
Red oak	ROK			0	SMR							3(B)
Sessile oak	SOK			0	SNR							3.2(A)
Aspen	ASP			0	SNR							3.2(A)
Black poplar	BPO			0	SNR							3.1(A)
Rauli beech	RAN			0	AT5							3.1(B)
Common alder	CAR			1	SNR							3.2(A)
Red alder	RAR			0	SNR							3(B)
Grey alder	GAR			2	SNR							3.1(B)
Italian alder	IAR			0	AT5							3.2(B)
Shining gum	ENI			0	SMR							3(C)
Cider gum	EGU			1	AT5							3(C)
Rowan	ROW			0	SMR							3.3(A)
True service tree	TST			0	SMR							3(A)
Wild service tree	WST			0	AT5							3(A)
Black walnut	JNI			0	AT5							3(B)
Common walnut	JRE			0	AT5							3(B)

Ecological Site Classification Report												
Hornbeam	HBM			0	MD							3(A)
Small-leaved lime	SLI			0	MD							3(A)
Wych elm	WEM			0	SMR							3(A)
Wild cherry	WCH			0	SNR							3(A)
Sweet chestnut	SC			0	AT5							3(A)
White willow (SRC)	WWL			0	SNR							3(C)

Ecological Site Classification Report

Eastings(m)	Northings(m)	Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser/Nurse
248200	863900	NH482639	Baseline climate 1961-1990	Cool - Highly exposed - Wet	All species	Brash older than 18 months	Drainage installed	No fertiliser

Site Description and Variables

The site has a cool, highly exposed and wet climate. Exposure constraints may limit species options and the ability to thin woodlands without significant risk of windthrow. The soils are wet moisture status and vp2 very poor nutrient status. Wet soils may cause flotation problems for heavy machinery on establishment, and on harvesting, if only lightly crowned species are present (e.g. birch). To remove excess water, drainage and appropriate cultivation will be undertaken; on wet soils avoid creating linear features that may increase the risk of erosion on steeper slopes.

Modifications	AT	CT	DAMS	MD	SMR	SNR
Default	797.0	4.0	18.0	22.0	2.0(Wet)	0.5(VP2 Very poor)
Drainage					1.0	0.5
Final	797.0	4.0	18.0	22.0	3.0(Very moist)	1.0(VP3 Very poor)

Species	Abbr.	Suit(Ecol)	Suit(Timber)	Yield	Limiting	AT	CT	DAMS	MD	SMR	SNR	Version
[Corsican pine]	[CP]	●	●	0	AT5	●	●	●	●	●	●	3.3(A)
[Lodgepole pine]	[LP]	●	▲	4	MD	●	●	●	●	●	●	3.1(A)
Macedonian pine	MCP	▲	●	4	MD	●	●	●	▲	●	●	3.1(C)
Maritime pine	MAP	●	●	0	AT5	●	●	●	●	▲	●	3.1(C)
Monterey/Radiata pine	RAP	●	●	0	MD	●	●	●	●	●	●	3(C)
Scots pine	SP	●	▲	5	SNR	●	●	●	●	●	●	3.3(A)
Weymouth pine	WEP	●	●	0	SMR	▲	●	▲	●	●	●	3(C)
Norway spruce	NS	●	●	4	SNR	●	●	▲	●	●	●	3.2(A)
Oriental spruce	ORS	●	●	0	SNR	▲	●	●	●	●	●	3(C)
Serbian spruce	OMS	●	●	1	MD	●	●	▲	●	●	▲	3(B)
Sitka spruce	SS	▲	●	6	SNR	●	●	●	●	●	▲	3.2(A)
Sitka spruce (Imp.)	Imp.SS	▲	●	6	SNR	●	●	●	●	●	▲	3.2(A)
Douglas fir	DF	●	●	0	SMR	●	●	●	●	●	●	3.1(A)
[Hybrid larch]	[HL]	▲	▲	5	MD	●	●	▲	▲	●	●	3(A)
[Japanese larch]	[JL]	●	●	7	DAMS	●	●	●	●	●	●	3(A)
[European larch]	[EL]	●	●	0	SNR	●	●	▲	●	●	●	3(A)
Western red cedar	RC	●	●	0	SNR	●	●	▲	●	●	●	3.1(A)
Japanese red cedar	JCR	●	●	0	SNR	●	●	●	●	●	●	3(B)
European silver fir	ESF	▲	●	4	SNR	●	●	▲	●	●	▲	3(B)
Grand fir	GF	●	●	0	SNR	●	●	▲	●	●	●	3(A)
Noble Fir	NF	●	●	5	SNR	●	●	●	●	●	●	3(A)
Nordmann fir	NMF	●	●	0	MD	▲	●	▲	●	●	●	3(C)

Ecological Site Classification Report												
Pacific fir	RF			7	DAMS							3.1(C)
Leyland cypress	LEC			2	SNR							3(B)
Western hemlock	WH			6	DAMS							3(A)
Giant redwood	WSQ			0	MD							3(B)
Coast redwood	RSQ			1	SNR							3(B)
Lawson's cypress	LC			1	DAMS							3(B)
Downy birch	PBI			3	DAMS							3.2(A)
Silver birch	SBI			2	DAMS							3.2(A)
Big leaf maple	AMA			0	DAMS							3.1(C)
Norway maple	NOM			0	SNR							3(B)
Sycamore	SY			0	SNR							3.3(A)
Beech	BE			2	SNR							3.1(A)
Roble beech	RON			0	AT5							3.1(B)
[Ash]	[AH]			0	SNR							3(A)
Pedunculate oak	POK			0	SNR							3.1(A)
Red oak	ROK			0	SNR							3(B)
Sessile oak	SOK			1	SNR							3.2(A)
Aspen	ASP			0	SNR							3.2(A)
Black poplar	BPO			0	SNR							3.1(A)
Rauli beech	RAN			0	AT5							3.1(B)
Common alder	CAR			1	SNR							3.2(A)
Red alder	RAR			0	SNR							3(B)
Grey alder	GAR			1	MD							3.1(B)
Italian alder	IAR			0	AT5							3.2(B)
Shining gum	ENI			1	MD							3(C)
Cider gum	EGU			1	AT5							3(C)
Rowan	ROW			1	SNR							3.3(A)
True service tree	TST			0	SMR							3(A)
Wild service tree	WST			0	AT5							3(A)
Black walnut	JNI			0	AT5							3(B)

Ecological Site Classification Report												
Common walnut	JRE			0	AT5							3(B)
Hornbeam	HBM			0	MD							3(A)
Small-leaved lime	SLI			0	MD							3(A)
Wych elm	WEM			0	SNR							3(A)
Wild cherry	WCH			0	SNR							3(A)
Sweet chestnut	SC			0	AT5							3(A)
White willow (SRC)	WWL			0	SNR							3(C)