4.0 Analysis and Concept

4.1 Analysis of Opportunities

The East Sutherland Land Management Plan has been produced in accordance with the UK Woodland Assurance Scheme (UKWAS) guidelines and the UK Forestry Standard.

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 continue the long term restructuring of the forest with sensitively designed coupes and extensive areas of CCF, achieving the objectives of improved landscape, environmental and water quality.
- 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 establishing native and bog 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 downstream designated sites.
- To create habitat suitable for hen harrier and fresh water pear mussels to flourish.

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 two thirds of the forest will be managed for commercial timber production, ranging from local firewood production to providing sawlog material for processors through long term contracts. The production of high quality hardwood for selected markets is a long term goal, reflecting the more fertile soils in the lower margins of Rogart forest.

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 need to establish transitional habitats between open hill and wetland environments and plantation edge will be key in developing a more diverse forest structure and will improve the visual quality of the forest.

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 6.5 – Management Prescription Types.** 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 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.

⇩

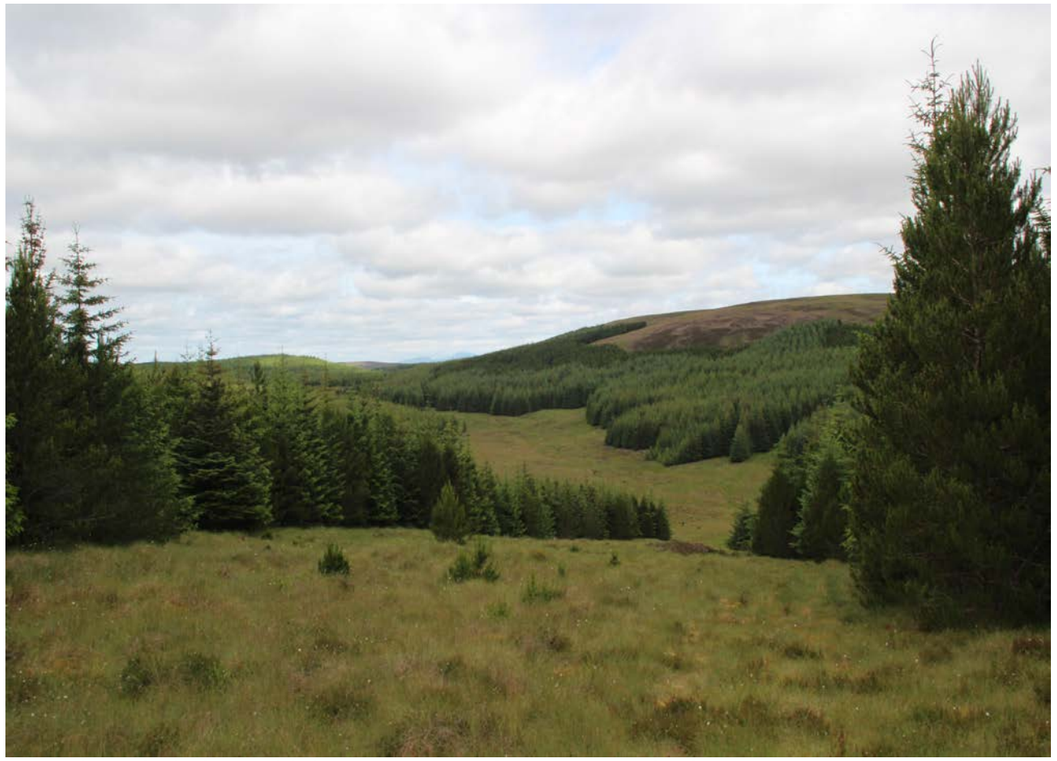
Three years prior to restocking the Programme Manager chairs a site objectives meeting with the Planning Manager, Planning Forester, Environment Manager and FM Forester and uses the workplan to create appropriate planting stock orders for the coupe and this order is entered into the FD Business Plan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

⇩

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.

⇩

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



Achormlarie has a high percentage of open ground. Photo A.Baranska, NHFD

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 and the exposed nature of much of Achormlarie and parts of Harriets plantation will limit 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. Consider the use of productive broadleaves on lower margins.
Pests and Diseases	An increase in species diversity will improve the ability of the forest to withstand attack from pathogens now spreading toward or across North Scotland.	The current spread of Dothistroma Needle Blight, 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 may affect felling programmes. Scots pine and larch species are both important productive and conservation species across the area and are particularly vulnerable to current pathogens.	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 woodland on appropriate sites will add to age class diversity. The extension of LISS will benefit the landscape and forest health generally.	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 (especially in Rogart block) compromised the forest structure for the current rotation.	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. Plan LISS in accordance with best silvicultural practice to create a permanent forest structure.
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 of benefit to 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 no less than 30metres from each bank 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 natural reserve at an appropriate stage. Where LISS is adopted, create the riparian buffers through heavier thinning and planting with native broadleaf species.
Timber recovery	The opportunity to increase timber quality – with particular emphasis on conifers on workable sites and hardwood on brown earths – can increase productivity and income. The development of a local skyline resource and the increase in steep ground working equipment could help achieve thinning programmes in previously inaccessible coupes.	Stability of crops that miss their thinning windows could be compromised and the marginal economics of thinning could mean that budget constraints affect programmes.	Ensure thinning and LISS interventions are undertaken on time and that best silvicultural practice is a high business plan priority.

	Where current non native species are compromising biodiversity aims remove the crops as early as possible.		
Biodiversity	Opportunity to increase species diversity by introducing native broadleaf species – particularly riparian woodland providing dappled shade - providing a future seed source. Contribute to natural reserve targets by dedicating appropriate areas to minimum intervention management. Provide better linkage with neighbouring designated sites. Protect the designated species and enhance the habitat capable of supporting hen harrier and black grouse in particular.	Control of deer populations will be key to the establishment of sensitive broadleaf species and deer fencing will be restricted due to the presence of woodland grouse. Riparian native woodland establishment could have locally negative effects on feature species if done inappropriately (e.g. water vole and otter). Predator species and inappropriate deer fencing may compromise populations of woodland grouse species and species that may encourage or sustain grey squirrel populations could be planted.	Targeted deer culls and the maintenance of strategic 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 and bog woodland planting. We will maintain the high proportion of open ground habitat (Achormlarie) to ensure protection of hen harrier habitat. Forest and Water Guidance will be adhered to and the monitoring of River Evelix will be undertaken to make sure, that forest operation don't affect the freshwater pearl mussel habitat negatively.
Open habitats	To improve the quality of upland open and blanket bog habitats where they are encountered. To include open space in native woodland and productive woodland to increase forest structure diversity.	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 increase species diversity in riparian zones. Opportunity to contribute to national targets for natural reserve by the establishment of minimum intervention native woodland,	Planting opportunity will be partially limited due to extent of open ground priority habitats and unsuitable planting ground (exposure). Significant deer populations may cause difficulties during the establishment phase.	Continue to follow best practice deer management. Target natural reserves where productive forestry potential is limited and where biodiversity gains will be highest. 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. Recolonisation of open ground habitats by non native conifers may compromise objectives. 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.	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.

		Large scale clearfell or removal of future deadwood may compromise species habitat.	
Historic features / archaeology	Opportunity to integrate historical features into the open area 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 current 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 at Skelbo. Opportunity to enhance the landscape around existing RoW and Core Path network and review all access points for accessibility. 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 audit access points and improve them where necessary. 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 establishment of native woodlands will lead to a more organic transition from high forest to open hill habitats. Opportunity for LISS to create an attractive diverse forest.	Deer pressure may limit the successful establishment of the native woodland (more palatable species). Forest health issues may mean coupe shapes are re-designed to remove pathogens 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 disease dictates early felling. Improvements will be achieved by adopting staggered restocking. Accurate stratification of crops before marketing will allow harvesting to achieve full clearance of sites. Chapter 3.4 details the landscape analysis and resulting concepts.

The analysis and concepts can be viewed spatially in **Map 4** of this plan and detailed landscape analysis is provided in chapter 3.4. Landscape and Land Use and in the perspective visualisations.

LMP objectives for Dornoch Blocks:
1. Healthy - HIGH IMPORTANCE
2.Productive - HIGH IMPORTANCE
3.Treasured - HIGH IMPORTANCE
4.Accessible - HIGH IMPORTANCE
5.Cared for - MEDIUM IMPORTANCE
6.Good Value - MEDIUM IMPORTANCE

We will manage the A9 margins to mitigate any possible negative impact of the forest trees on the road conditions. We will keep c 10m wide open strip on both sides of A9 (the south eastern corner of the Skelbo forest will be exception from this rule, to provide more sheltered feeling to the forest car park; only the regenerating broadleaves and potentially hazardous conifers will be felled there). We will accept the natural regeneration of trees within the A9 corridor (10 to c. 30m from the roadside), thin and re-space them to achieve visually attractive edge of woodland with a mixture of broadleaf and conifer species.

Skelbo Forest is very popular with both local residents and visitors to the area. We will work with local schools and regular forest visitors, to promote a sense of community ownership and to make sure that the needs and views of the forest users feed into our management strategy. We will continue to manage the forest according to LISS principles, to ensure its attractive appearance and, in long term, to achieve regeneration of the forest (with a mixture of planting and natural regeneration) with SP as main species. DNB is present within the block, but making relatively slow progress. We will continue to monitor the disease and to thin the crop to minimise its impact. Visitor facilities will be well maintained and updated (more detailed CRT focused plan to be prepared in spring 2015).

Balvraid block will be managed under clearfell system. We will increase broadleaved area by planting along watercourses with the aim to improve riparian habitat. SP will remain the main species within the block. By planting broadleaves in riparian corridors we will improve crop stability and reduce the risk of wind damage in the next rotation.

Harriets plantation will be managed under clearfell system.Productive areas will be thinned to improve the quality of timber.

Mature non-native conifers will be removed from A9 side to improve safety

Fourpenny plantation will be divided into two distinctive management areas: LISS area covering the northern part of the block with SP crop planted in the 60's) and clearfell management area to the south.

Poor soils and exposure exclude the area at the top of the hill from commercial timber production. We will gradually remove non-native conifers; promote SP and native broadleaves in order to achieve a native type woodland cover. The area will become more visually attractive then the existing failed c onifer plantation and will protect commercial crop from wind

The area managed as LTR will be reduced in comparison to the previous plan to allow for clearing and restocking area affected by wind damage.

Embo Community is currently negotiating taking over the management of the area south east from the power line. As the final decision is still to be made, the area is covered by the LMP proposals.

Young SS (PY 1983) will be felled prematurely to remove the risk of trees falling and damaging the power line. The area will be restocked with a mix of native broadleaves and SP kept in safe distance from the power line, to avoid similar issues in the future.

The wet area in the north eastern corner is a diverse wet woodland and deadwood habitat. We will manage it as a LTR to protect its unique characteristics. We will accept native broadleaves regeneration with the long term aim of creating mixed woodland, where native species will gradually take over as the non native conifers die.

Part of the former LISS coupe south of the power line will be felled and restocked with a mix of native broadleaves and SP to improve crop stability (and safety of the power line and neighbouring houses) and simplify future management.

Land locked compartments are currently on the market, and, as sale is being negotiated, are not covered by the LMP proposals.

Camore Forest is, together with Skelbo, the most frequently visited forest block within Dornoch area. Thanks to the well developed network of forest roads and paths and to the works carried out during the lifespan of the previous plan (like clearfelling around archaeology sites, removal o both mature and regenerating WH) the forest became an attractive and interesting place to visit. We will continue to manage Camore according to LISS principles. We include the area covered by mature NS within the ATC coupe (in the previous plan it was to be clearfelled and restocked). The visitor facilities will be maintained to promote public access and recreational use of the forest.

We will continue to remove WH regen, and managed the open areas around the archaeological features. We will manage existing hedges and plant more broadleaves to create more wind firm boundaries and protect the mature conifers against wind damage.

Summary of the previous plan:
Dornoch Blocks are attracting high number of visitors. They form an important recreational asset for Dornoch area inhabitants and are visible (close-up views) from A9. Camore lies within Dornoch Firth National Scenic Area (NSA).
New visitor facilities were developed and existing ones improved in Skelbo and Camore forests.
NHFD had been working with local schools and residents to accommodate their needs and promote access.
ATC systems were successfully adopted in Skelbo, Camore and Duchess/Countess.
Timber production was one of the plan objectives and the crop had been thinned where ground condition allowed.

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Map 4 - Analysis & Concept (a)

Scale @ A3 1:25,000

Legend

- Land Management Plan Area
- Forest Road
- Proposed roadline
- powerline_oh
- CONTOURS

N

LMP objectives for Achormlarie:
1. Healthy - HIGH IMPORTANCE
2.Productive - HIGH IMPORTANCE
3.Treasured - LOW IMPORTANCE
4.Accessible - LOW IMPORTANCE
5.Cared for - HIGH IMPORTANCE.
6.Good Value - MEDIUM IMPORTANCE

Northern boundary of the forest, visible from a minor Bonar Bridge to The Mound (A9) public road, will be managed in order to make it more sensitive to the landscape.

Summary of the previous plan:
Achormlarie is an even aged and relatively young conifer block (over 64% of the crop below 31 years) and with a large proportion of open ground (c.26%).
Up to date there was virtually no felling. The forest lies entirely within the Strath Carnaig and Strath Moors SPA, and its southern edge is close to the River Evelix SAC. There is very little recreational interest in the area as it is quite remote.
The roading is poor with only the central part of the block accessible from the existing forest road.

We will further develop forest roads network to allow for harvesting operations and future management

Area to the north of the proposed substation road has been recently felled, increasing the risk of winthrow on the exposed brown edge of the forest. We will clearfell the area within the first five year period of the plan and restock it with native species to create windfirm forest boundary.

We will retain the high percentage of the open ground to protect hen harrier habitat.
The hills of Achormlarie, both open and afforested ones, are prominent in the landscape.
Proposed coupe structure is based on principles of felling bigger areas on the hill sides and smaller further down the slopes and in the valleys; using the existing windfirm boundaries where possible and making the coupes accessible from either existing or proposed forest roads.
Only 3 coupes will be felled within this plan period. Majority of felling is scheduled for phases 4,5 & 6 and later.

Western and south western parts of the block will be restocked with commercial conifers suited to the site conditions. As these slopes are prominent in the landscape, we will avoid creating sharp, highly visible boundaries between species (e.g. SS and JL). We will consult the detailed restock proposals for the above area with the FC landscape architect to make sure that no unsightly geometrical shapes are created.
We will plant native broadleaves and SP on the block boundary to create a habitat link with a native woodland planted on privately owned land to the west of Achormlarie.

River Evelix SAC
Currently assessed by SEPA as having good ecological status.
The river supports fresh water pearl mussel population.
We will monitor the water quality on the River Evelix tributaries running from Achormlarie, to establish a bench mark parameters and be able to asses the potential impact of forestry activities on the river.
We will plant native broadleaves in riparian zones (where it doesn't significantly reduce the area of open corridors supporting hen harrier) and adhere to Forest and Water Guidance to protect Achormlarie watercourses.

Poor areas will be removed from commercial timber production. Where the deep peat is found, we will plant broadleaves to create bog woodland.

South eastern corner is an area of open ground used by a crofting tenant as a rough pasture.

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Map 4 - Analysis & Concept (b)

Legend

- Land Management Plan Area
- Forest Road
- Proposed roadline
- Proposed substation road
- CONTOURS

Scale @ A3 1:25,000

N

LMP objectives for Rogart:
1. Healthy - HIGH IMPORTANCE
2.Productive - HIGH IMPORTANCE
3.Treasured - HIGH IMPORTANCE
4.Accessible - HIGH IMPORTANCE
5.Cared for - MEDIUM IMPORTANCE.
6.Good Value - MEDIUM IMPORTANCE

Summary of the previous plan:
Rogart forest had been in the past a very uniform, 'wall-to-wall' conifer bloc. It suffered from wind damage and, subsequently, extensive areas had been felled to remove the windblown trees.
The visually intrusive geometric boundaries have been to large extend reshaped.
A network of paths has been created in co-operation between Rogart Community and NHFD.

Creag na Dallach Moire

Very prominent in the landscape both for the Rogart village and the motorists on A839 public road to Lairg. Fertile but in places shallow soils with rocky outcrops. Steep slopes making access and harvesting challenging.
The commercially grown conifers on Creag na Dallach Moire suffered from windthrow and we propose to clearfell them within the first five year period of the plan. Taking into account the landscape character, access issues and difficult terrain, for the next rotation we propose to:

1.Plant native woodland with SP on the lower slopes of the hill, to create habitat link between Rogart forest and privately owned land to the west of the block. The native trees, planted in l in safe distance from the railway line will pose a lesser risk the railways than tall, commercially grown conifers;

2.Plant the top of Creag na Dallach Moire with native broadleaves and SP. Upper slopes are steep and the soil is shallow in places, but parts could be harvestable in next rotation. The decision about how much of the native woodland could be harvested will be made at the time of felling of the commercial conifer crop below.

3.Restock the remaining area with productive conifers, best suited to the site conditions, where the slope steepness and soil allows.

4.Manage the steep eastern slopes with granny pines and old broadleves along the railway line as a Natural Reserve to protect the unique characteristics of the area treasured by local residents.

No access for lorries/big machinery (railway underpass with a height restriction)

Privately owned strip of land dividing forest block; during the previous plan period the edges were restructured to minimise their negative visual impact.

River Fleet - currently classified by SEPA as having moderate ecological status and with a potential to be affected by operation within the LMP area. We will protect watercourses during forest operations and plant broadleaves in riparian zones to improve the quality of water running from the forest block into River Fleet
.

We will protect the network of paths created by the Rogart Community/NHFD during forest operations. Further cooperation between the District and the community will be developed to maintain and promote these paths.

The upper edge of the forest is currently badly affected by windthrow. We will clearfell the damaged crop within the first five year period of the plan. We restock the area with a mix of native broadleaves and SP, to create a windfirm boundary and protect the commercial crop further down the slope.

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Map 4 - Analysis & Concept (c)

Legend

- Land Management Plan Area
- Forest Road
- Proposed roadline
- Rogart Community Paths
- CONTOURS

Scale @ A3 1:25,000

N

4.4 Land Management Plan Brief

Background Information

The East Sutherland Land Management Plan area is situated in Sutherland, between the towns of Dornoch and Bonar Bridge and the village of Rogart. The plan area extends to over 3075 ha of largely mixed coniferous forests. The forests are predominantly productive with recreation also being a management priority. Landscape is an important issue, given the forests' close proximity to the main A9 tourist route north (Skelbo, Balvraid, Harriets). Rogart Forest is a main landscape feature viewed from Rogart village and is highly visible for the motorists using the A839 public road to Lairg. Achormlarie is quite remote, visible from a minor Bonar Bridge to The Mound (on A9) public road.
Arguably the most important function that the woodlands perform is to provide refuge for designated habitats and species of significance for biodiversity. Achormlarie lies entirely within the Strath Carnaig and Strath Fleet Moors Special Protection Area (SPA) and Site of Significant Scientific Interest (SSSI) for hen harrier, and borders with River Evelix Special Area of Conservation (SAC) for fresh water pearl mussel with watercourses on the southern slopes of the block feeding into the river. Rogart borders with the Strath Carnaig and Strath Fleet Moors SPA & SSSI to the north and the watercourse running from the block are tributaries to River Fleet. Many European Protected Species are recorded locally.

Statement of Intent

The plan area's primary role will be to contribute toward biodiversity targets with conservation of important species and sites, and restoration of riparian woodland as main aims. Recreation, community involvement and maintaining a productive timber resource are also of high importance. In order to maintain the productive capacity of the forest in the long term, the soils will be assessed for suitability to sustain timber production considering predicted changes in the local climate, and restock species will be chosen accordingly. Areas affected by Dothistroma Needle Blight will be closely monitored.

We will continue to work with our stakeholders to identify opportunities to improve conditions for black grouse, juniper, hen harrier and fresh water pearl mussel specifically.

Brief & Objectives

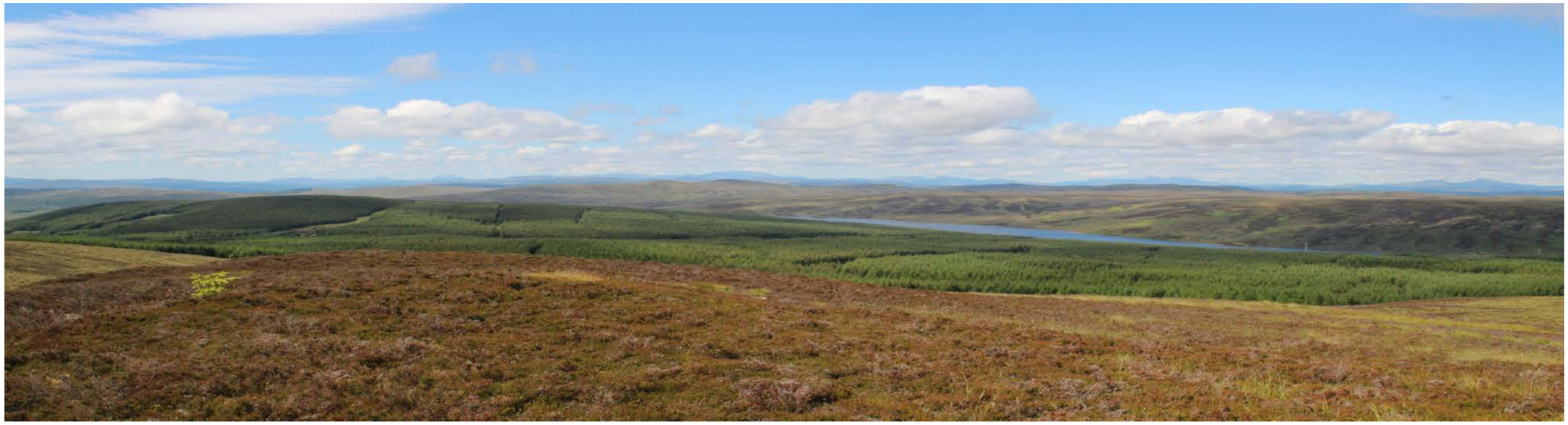
This Land Management Plan is being revised in line with the Scottish Forestry Strategy (SFS) and it seven key themes:

- Climate change
- Timber
- Business development
- Community development
- Access and health
- Environmental quality
- Biodiversity

Seven key themes of SSF formed the basis of Forestry Commission Scotland's Strategic Direction document with it's Six National Key Commitments. On the district level, the North Highland Forest District Strategic Plan (2014 – 2017) recognises Six National Key Commitments as significant in relation to the LMP area. These are:

- 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

It is accepted that each individual forest area within North Highland can only contribute to a limited number of strategic targets as high priority areas. The following table describes how North Highland Forest District will contribute to the National key Commitments from the NHFD Strategic Plan. The targets that are considered fundamental to the delivery of the aims of this Land Management Plan – the critical success factors – are highlighted in green in the table below. The delivery of these elements will be the primary factors by which the plan's success is judged at mid-term review and full revision (5 & 10 yrs respectively):



Loch Buidhe, seen from Beinn Domhraill, Achormlarie. Photo: A.Baranska, NHFD

North Highland District Strategic Plan (2014 – 2017) Target:	District Specific Action	How This Forest will Contribute and How We Will Monitor the Achievement of This Target:
Key National Commitment- Healthy **Achieving good environmental and silvicultural condition in a changing climate** High priority objective in all LMP forest blocks.		
We are committed to high quality silviculture and, increasingly, to using alternatives to clearfelling.	We will use best practice in silviculture to identify productive soils and suitable species and manage these areas accordingly, thinning where climate and soils allow. We will identify areas of woodland where low impact silviculture will most benefit biodiversity, landscape and the forest environment, and implement alternatives to clearfell over appropriate timescales.	We will concentrate productive conifers on appropriate soils, using species best suited to site conditions. Across the LMP area, we will continue to manage ATC coupes according to LISS principles. New areas suitable for this management type identified during the preparation of the plan will be included in the management proposals. LISS will be managed and recorded by the Programme Manager and the Planning Manager using existing FCS LISS reporting systems.
We are exploring how to best steward the carbon resources locked up in the Estate's trees and soils.	We will adapt our management as information develops on carbon sequestration with particular emphasis on preserving organic soils and to matching the most productive tree species to the best sites	On deep peats, where it is ecologically appropriate and achievable, we will restore native woodland/bog woodland/scrub.
We will help the Estate adapt to climate change and become more resilient to pressure.	We will continue to diversify the 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. We will continue to annually monitor the condition of our pine trees to assess the ongoing effects of *Dothistoma Needle Blight*. Severely affected timber will be targeted for early removal. Where possible, we will strive to work with Scotland's Environmental and Rural Services and our neighbours to develop a sustainable landscape-scale approach to deer management, and promote the National Forest Estate as an exemplar of best practice.	We will protect mature stands with unique values or significance as Natural Reserves and Long Term Retentions. We will match the restock species to the site condition. We will monitor the DNB affected stand annually and, if necessary, we will fell badly affected areas early, maximising timber recovery. We will ensure that the LMP area has 100% coverage by Deer Management Plan and will work with neighbouring landowners to identify opportunities to consolidate deer fencing at a landscape scale. We will work with neighbours to identify collaborative control opportunities. Deer management will be monitored and reported on using existing FCS deer management protocols.
We are committed to dealing with invasive plants and animals that threaten habitats and biodiversity.	We will monitor our woodlands for the presence of invasive plants and animals and take appropriate action to reduce them.	We will continue to eradicate rhododendron and western hemlock. Monitored by the LMP Forester at mid term review and work plan stages against LMP prescriptions.

Key National Commitment - Productive **Providing sustainable economic benefits from the land.** High priority objective in all LMP forest blocks.		
We aim to increase the contribution of the National Forest Estate to the economy of Scotland and its regions, and recognise the potential of the Estate to assist transition to low carbon economy. We aim to provide at least three million cubic metres of softwood timber every year on a sustainable basis. We will use our work programmes to promote the development of the forestry and land management sectors.	We will review our open land holding and continue to survey the habitats. Where appropriate, we will seek to maximise income from forestry activities, agricultural leases and renewable energy developments. We will produce a forecast of timber production and match those predictions (currently 222,000 cubic meters per year) to subsequent marketing plans. We will work to increase the current annual thinning volume (26,000 cubic metres), and ensure that all suitable areas are thinned. We will remain committed to softwood timber production, and apply best silicultural practice to improve the quality and yields of our commercial conifer timber. We will develop the National Forest Estate in North Highland Forest District into a sustainable resource that can contribute to the viability of the local economy through timber and non-timber productivity. We will strive to further develop the local forestry contractor base in North Highland District to facilitate the delivery of rising restock programmes and promote sustainable local employment.	The production forecast for the FD will be produced to accommodate the demands of managing forest health fellings and may fluctuate within the plan period. We will undertake the felling as per the volumes detailed in **Appendix 8 – Coupe Summary.** The forecast will be monitored and managed by the FD Planning Manager and Programme Manager.
Key National Commitment - Treasured **…as a multi-purpose resource that sustains livelihoods, improves quality of life, and offers involvement and enjoyment.** High priority objective in Dornoch Blocks and Rogart, low priority in Achormlarie.		
We want to encourage local people to get involved in using and managing local Estate woodlands, so we will actively engage with local communities and be open to work in partnership.	We will continue to support communities that are currently involved in the management if their local forests (Dornoch, Embo, Rogart) and will encourage and support any new approaches.	We will contact the Community Councils who represent this plan area to update them on local and national forestry issues where they have requested this input. CC Contact will be recorded by the LMP Forester and reported on at MTR and full revision.

We will continue to use the Estate as a place for volunteering and gaining employment skills. We are committed to creating more uniquely special places across the Estate and to delivering benefits to an increasingly diverse range of Scotland's people.	We will facilitate, through the National Forest Land Scheme (NFLS), opportunities for community ownership, the development of woodland crofts and the provision of sites for affordable housing. We will continue to work with local schools to deliver Rural Skills SVQ units and work experience placements. We will continue to improve key visitor zones around high priority recreation sites and along major tourist routes; thereby adding to and enhancing the visitor experience.	Embo community is currently negotiating the possibility of owning part of the Fourpenny plantation under NFLS. Dornoch community has a keen interest in management of woodlands around Dornoch. Rogart Community is in a process of developing an agreement with the District CRT Team to maintain and promote access to the paths constructed during the lifespan of the previous plan. Skelbo will have its recreational master plan developed in spring 2015. A wide public consultation will take place to ensure that all the stakeholders have a chance to express their concerns and aspirations. Rogart Community is increasingly more involved in the path management in Rogart. A9 corridor (Skelbo/Balvraid) will be managed to improve road safety and visual appearance of the forest edges. This will be monitored and reported on by the CRT Manager using existing CRT systems.

Key National Commitment – Accessible		
…local woodlands and national treasures that are well promoted, welcoming and open for all. High priority in Dornoch Blocks and Rogart, low priority in Achormlarie.		
We will continue to invest available resources into high quality facilities that encourage and help visitors experience and enjoy the outdoor environment.	We will continue to review our recreation facility provision, monitoring use and concentrating resources where they most benefit visitors and local communities.	Ongoing maintenance of visitor facilities in Skelbo and Camore. District's CRT Team will develop a detailed 'master plan' (spring 2015) to identify any upgrades needed.
We will continue to encourage use of the Estate for health benefits and outdoor learning.	We will continue to support the work of North Highland FEI Cluster, Highland Council Ranger Service, TCV Green Gym and local schools to deliver education and physical activity programmes on the National Forest Estate.	
Through our Woodlands In and Around Towns (WIAT) programme, we aim to provide more opportunities for more of Scotland's people to enjoy high quality countryside, and find health, education, skills and community involvement benefits.	We will continue to develop facilities near larger centres of population in (…), Sutherland, (…) and seek internal and external partners to deliver social opportunity programmes.	This will be monitored and reported on by the CRT Manager using existing CRT systems.
Key National Commitment – Cared for		
…working with nature and respecting landscape, natural and cultural heritage. High priority in Achormlarie, medium priority in Dornoch Blocks and Rogart.		
We aim to increase broadleaf tree cover from current 8% of woodland cover to around 20%.	We will create riparian woodland areas to provide a permanent network of native broadleaf woodland, contributing to the wider habitat network and buffering important aquatic habitats	Riparian zones will be restocked with native broadleaves to create riparian woodland This work will be monitored by the Environment Manager under existing native woodland and open habitat reporting mechanisms.
We are committed to maintaining the best open habitats in good ecological condition.	We will conserve and enhance the significant areas of open habitat on the National Forest Estate, contributing to species and habitat diversity. We will continue to lead the development of best practice in the establishment of transitional habitats – bog and tree line woodland – by contributing to research and implementing	The Environment Manager will monitor the management of open habitats using existing FCS protocols and with reference to the FCS Open Habitats Ecologist.

	appropriate Land Management Plans. We will ensure that all our Land Management Plans take into consideration the requirements of the Water Framework Directive.	
We will identify particularly vulnerable species for which the National Forest Estate is important and take specific conservation action.	We will work towards dedicating 5% of our native woodland and 1% of our planted productive woodland to natural reserve, allowing natural processes to create a richly diverse woodland habitat. We will continue to develop significant areas of high quality open and woodland habitat that will benefit all species, including specific work to protect key species and enhance pinewood, (…) and peatland habitats.	Forest structure change will be monitored and recorded in the LMP reviews by the LMP Forester and the Environment Manager will undertake animal and habitat species surveys using existing Environment protocols.
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.	We will maintain full coverage of scheduled monument planning across the LMP area in consultation with Historic Scotland and the FCS Archaeologist. We will record all new discoveries on the GIS Heritage manager tool and inform the necessary stakeholders of location, asking the FCS Archaeologist to comment on significance and recommend the appropriate management. The Environment Manager will manage archaeology using existing heritage systems and protocols.
Key National Commitment – Good value		
…exemplary, effective and efficient delivery of public benefits. Medium priority in Dornoch Blocks, Achormlarie and Rogart**.**		
We will make progressive reductions in the emissions from our Estate management activities.	We will engage fully with the FC Business Sustainability Programme, and seek to conduct our operations in the most environmentally sensitive ways.	