

## Project Proposal

Business Reference Number:	224 339	Case Number:	
Application name:	Stuckenduff Woodland Creation		

## Introduction

The Woodland Creation Operational Plan allows you to show that you have carefully considered all of the relevant impacts and effects that the work you are proposing might have on the environment, and where appropriate the measures you intend to take to mitigate any adverse effects.

The Operational Plan, including the issues log at Annex 2, can be used to record any pre-application work completed ahead of submitting your woodland creation application (e.g. discussions with stakeholders, site assessment results, etc.).

The Woodland Officer will take account of the details you have given in this Plan when they assess your application and it will also help them to decide on a score for your application.

## General Details

You must complete this Woodland Creation Operational Plan and submit it with your Forestry Grant Scheme Woodland Creation application.

The amount of supporting information you give will depend on the scale, location and nature of your application. You should give sufficient detail so that we can properly assess the work you propose. Your local Scottish Forestry (SF) [Conservancy office](#) will be able to provide you with further advice about this.

Please note that the Woodland Officer who will assess your application may request further information or clarification about the details you give in this Operational Plan, especially those that may have an environmental impact on the site.

***When you have completed your Woodland Creation Operational Plan, save the document to your computer and then upload to your on-line application.***

## General Assessment

The information in your Operational Plan should be based on a thorough assessment of the site. Please complete the following:

Describe the management objectives for the site.

The Primary objectives are: -

- The diversification of the land holding through the production of timber in the medium to long term
- To protect and enhance biodiversity values through native woodland creation

Secondary objectives are: -

- To enhance the landscape through the establishment of attractive, diverse woodlands.
- The protection and enhancement of biodiversity values, primarily through improving connectivity between existing woodland sites.
- Mitigation for climate change through carbon sequestration

Provide a description of the planting site.

### Context:

The woodland creation proposal at Stuckenduff is being developed on behalf of the owner, who wishes to convert agricultural land to a mixed conifer & broadleaved woodland. This will include a mix of commercial conifers, native broadleaves along with areas of designed open ground.

The woodland creation proposal will be progressed through the Scottish Rural Development Programme. As part of the process a range of specific surveys have been completed and consultation with the local community is ongoing. The information gathered during the survey and assessment exercise has been used to inform the detailed designed proposals.

### Location:

The proposal at Stuckenduff is located outside Rhu, just off the A814 in Argyll & Bute. To the south lies the Gare Loch leading out the Roseneath Peninsula with Glen Fruin and the Luss Hills to the north.

The centre of Rhu lies approx. 2kcm to the south-east with housing skirting the shoreline running to the south leading up to Garelochhead approx. 4km north

### Extent:

The woodland creation proposal covers a total application area of 82.72 ha, with a grant application area of 69.04 ha once non-grant areas have been removed.

Woodland Creation Area:	69.04 ha	(grant funded)
Other Land:	13.68 ha	(non-grant funded)

TOTAL: 82.72 ha

The higher target rate has been selected for a percentage of the site as the proposal falls within the Preferred area of the FWS. Areas out with are designated as being sensitive

- Conifer: Higher Target rate
- Upland Native Birch: Standard rate

### **Land Use:**

The land is primarily used for livestock, with areas of pastoral land and rough grazing. In recent years parts of the proposal area, particularly the northern half, have become infested with rushes (due to a lack of drain and pasture maintenance) and gorse.

Agriculture and forestry are the dominant land use in the surrounding locality with large commercial forests to the south-east and south-west across the Gareloch on the Roseneath Peninsulas. Field boundaries have scattered remnants of old dykes which have largely been replaced by modern fencing.

### **Topography:**

The proposal area at Stuckenduff lies on sloping ground, from the hills to the north-east falling to the edge of the railway to the south-east falling to the shores of the Gareloch just over 1km from the most southern point of the proposal boundary.

Topography varies from 200m to 360m a.s.l. across the site.

### **Soils:**

Soils across the varies from blanket peat to the north to brown forest soil to the south with a combination of gleys and podzols in between.

The dominant soil is a combination of peaty gleys, peaty gleyed podzols and brown earth. During the proposal stage a peat survey was carried out which confirmed the soil type along with identifying any areas of deep peat. Areas of peat were identified within the planting area with these areas being removed from the planting application.

The British Geological Society class the soil predominantly as diamicton (unsorted sediment with gravel in a fine mud matrix) of glacial origin with the underlying rock being of a sedimentary origin.

### **Drainage:**

There are several small drains on site, none are more than 1m in width, with some on the upper slopes generally fast flowing, and occupy small but incised channels. These lead into small watercourses which eventually lead south out to the Gareloch.

While there are no areas at risk of flooding within the site (SEPA, 2017), as the railway is sited directly below the proposal, care will have to be carried out to ensure any change in the drainage on site does not impact this network.

## **Historical and Cultural Interests:**

Initial discussions with Scottish Forestry led to a desk/walk over survey being commissioned to identify any remnant features on site.

Archaeological features were surveyed by Guard Archaeology through a desk based and walkover survey. The woodland design takes into consideration the archaeological features identified through avoidance of planting on these areas and incorporation of appropriate buffer zones.

The walkover survey has found that three archaeological sites could potentially be directly affected by the proposed afforestation. These are: Old Shandon bloomery slag heap and a rectangular feature made of earthen banks. The survey also identified Laigh Balernock, a cup marked stone, within 100m outside the planting area.

None of these archaeological sites are no scheduled monuments but are of local archaeological interest and guidance has indicated that a minimum 5m buffer from these features should be maintained to ensure preservation.

## **Designations:**

There are no other designations on the site itself, with the nearest designation being a geological Review Site (GRC) at Rhu Point, designated for evidence of historical succession, with no direct link with the site.

There are two areas of 'Ancient (of semi-natural origin) woodland near to the proposal, one to the south west and the other slightly further out to the north west. Currently they consist predominantly of mixed broadleaves such as sycamore with some ash and birch to the west with more mature broadleaves to the east.

Minimal ground flora of note appeared to be present in the area other than patches of gorse, rushes and grass.

There are no areas classed as 'Long-established (of plantation origin) within the proposal area with the nearest located 500m from the south eastern boundary.

**Habitats:**

Stuckenduff occupies the southwest-facing, upper slopes & summit of a ridge at altitudes of 200m to 360 m. It is located above enclosed land and therefore forms the outfield of a pastoral farm. Slope angles are relatively low but fall away more steeply beyond the southwestern boundary. As a result of the low gradients, conditions are widely waterlogged, so peatland & related mires are extensive, especially above the 290 m contour. Acid flush, acid grassland & dry heath and additional areas of blanket bog are present below 290 m. Marshy grassland & wet heath are also present.

Habitat diversity within the proposal area is focused around the watercourses with boundary tree lines adding a degree of habitat diversity, with a variety being present. Neighbouring land cover is of a similar style with improved pasture & rough grazing to the north & west with a combination of rough grazing and forestry to the east.

Directly south lies initially farmland leading to the main west coast railway line. This then changes to residential housing, infrastructure and finally to the banks of the Gareloch.

**Birds:**

The RSPB were contacted at an early stage in order to assess likely bird interest. They recommended that surveys be carried out for both Black Grouse and raptors. To comply with this Tetrix Ecology were commissioned to undertake a desktop review along with a Breeding Bird and Raptor Vantage Point surveys.

The Black Grouse survey revealed there was no evidence of Black Grouse lekking on site, however males were recorded to the south & west of the planting boundary which clearly highlights they are in the area. This coincides with surveys carried out on the neighbouring ground at Letrault where 3 lekking sites were recorded.

In order to mitigate the predicted effects of direct mortality, in terms of the collision of black grouse with deer fencing, the use of fencing within the site should be minimised. However, where fencing is required, batons will be installed onto all new and existing fencing within and along the boundary of the site.

The RSPB also requested that a site survey be undertaken to assess the potential breeding presence of scarce raptor species, specifically Hen Harrier & Merlin, which was undertaken by Tetrix Ecology (see Appendix 1).

Despite numerous site visits, the survey failed to record any direct and/or indirect evidence of breeding pairs on site however it is recommended (where possible) that all required works in support of the proposal are completed outside of the breeding raptor season as per the following:

- hen harrier (late February to August/September); and
- merlin (late March - August inclusive).

## **European Protected Species:**

No badger setts have been located throughout the planting site but given the nature of the site, and the presence of gorse cover, it is possible that there may be setts on site. There is potential for badger activity in the existing woodland on neighbouring land.

The watercourses within the planting site appear to be too small to provide habitat for otter, while some of the mature trees may provide suitable roosting sites for bats. Red squirrels are known to be present in the surrounding area.

The proposal site has been grazed for many years and as a consequence has a reduced biodiversity value. There is very little difference in the vegetation across the site which comprises of patches of wet ground with rushes where drainage is impeded. Field margins contain the greatest diversity with trees, shrubs and associated vegetation providing refuge in an otherwise open landscape.

Rabbits, hares, and roe deer are present in the local area.

## **Landscape Guidance:**

This review of the landscape has been carried out to assess the impact of a proposed woodland creation option at Stuckenduff. Consultation with interested parties has indicated that the location of the proposal, due to the topography, the planting will be visible on the skyline and consideration should be made to how this will impact the wider landscape.

The proposal area sits within an area identified by SNH in their Landscape Assessment of Argyll and the Firth of Clyde, as sitting within the classification type Rolling Farmland with Estates. The key characteristics of this class includes:

- Broad, rounded ridges with occasional steep banks, knolls and conical upstanding hills
- Groups of fairly large, rectangular fields, enclosed by linear shelterbelts and blocks of mixed woodland
- Stone walls, follies, beech hedgerows and estate policy woodlands
- Scattered large farmsteads in the countryside

The report indicated the key landscape issues as:

- Development pressures and associated infrastructure development, especially along loch edges and river valleys
- Pressure on semi-natural habitats and historical features through hedgerow removal and modern farm buildings
- Pressure from commercial forestry

In particular, and in relation to the associated application, the report indicates that commercial forestry should respect the scale of the surrounding landscape. Plantations

should be edged with belts of broadleaf trees, which, wherever possible, should link to existing hedgerows and woodlands to create wildlife corridors.

Woodland is currently limited across the site with pockets of trees and remnant hedgerows scattered across the site. The main concentration of trees can be found either on the boundaries or running along riparian corridors where access has limited browsing. The main species comprise of birch, oak, hazel and rowan along with other minor broadleaves species. There are commercial woodlands to the east, Highlandman Wood, where Sitka spruce dominates with smaller areas of Norway spruce and larch.

Currently farming dominates the land use with a combination of rough grazing to the north with areas of improved grassland on the lower slopes to the south.

Throughout the proposal area there are a number of watercourses running through the site leading to the Gare Loch located just south of the proposal. Where the proposal interacts with water, care has been taken to buffer these to minimise the risk of diffuse pollution from forest operations.

In terms of landscape, the main concern is the view from outwith the local area with particular comment regarding the view from Roseneath Peninsula. Plantings has been designed to complement the existing woodland and comprise both of commercial and native to maintain, and potentially enhance, the current diverse range of species and habitats across the farm.

Attention has been paid to ensuring the design moves away, as far as possible, from geometric blocks, especially on the upper ground, and there is the opportunity for a well-designed scheme to contribute to the landscape by tying into neighbouring Highlandman Wood, which currently sits quite isolated in the landscape. The combination of mixed conifer, native broadleaves and open ground have been designed to move away from 'hard edges' to give a more natural look to the forest.

In contrast, in terms of landscape, the immediate vicinity of the proposal will change very little. The nearest village is Rhu & Shandon, which is situated south of the proposal, which has a limited view of the site due to the topography, railway and current woodland.

The use of native broadleaves, in particular low growing species, and open ground will be used to maintain views adjacent to properties. However due to the limited number of dwellings, and existing woodland, there are very few that will be directly affected by the proposal.

Due to the scope of the site, ground preparation will be mainly carried out through ploughing, where possible, with more sensitive areas, such as steeper slopes or adjacent watercourses, will be carried out via excavator mounding and/or hand screefing.

Plough furrows will follow contours of the hill, at different angles, and will be broken at intervals to avoid long continuous lines in the landscape and excessive runoff.

During the initial surveying for the site a peat survey was carried out to identify any areas over 50cm in depth. These areas have been removed from the design as per current forestry guidelines.

In between these conifer blocks native broadleaved plantings are proposed, along with areas of open ground, which has been designed to mimic natural processes. Due to the current woodland lower down, there will be minimal impact on the larger landscape from this proposal.

Plantings below the skyline have been designed to fit within the existing woodland and comprise both of commercial and native to maintain, and potentially enhance, the current diverse range of species and habitats within the estate.

While there will likely be changes to the included design following consultation there should be minimal negative impact on the wider landscape due to the location of the woodland and the softening of the hard boundary with the neighbouring plantation. In addition, within the immediate vicinity of the proposal, care has been taken to reduce the impact through the use of broadleaves and open ground.

### **Public Access:**

In terms of public access, one of the main points raised through initial scoping was the need to preserve & enhance the existing resource and to further develop the potential of the area in a responsible way.

Through the change from farmland to woodland possibilities for responsible access will be created, in line with the current Scottish Access Code. Current access through the site will be maintained, where they exist, to ensure the public can continue to access the area following diversification.

### **Management Access:**

Access will be taken from the adjacent wood, Highlandman Wood, which has access out over the railway and down through Rhu. Access has already been agreed in advance with both the neighbouring woodland owner and farmer.

Initial works will be to create a link road, of up to 1km, from Highlandman into the upper area of the neighbouring site with a ride left for access to Stuckenduff. This will require separate approval and will be carried out prior to starting works.

Regarding access, concern was raised regarding large vehicles using the route along Pier & Station road. Initially this will involve a small number of journeys which, primarily, will be used to deliver excavators for ground works.

This is a Timber Transport Consultation Route and has been recently used for haulage from the neighbouring forest, with a management plan put in place to ensure not only continued public use and safety but also to protect the infrastructure.

Harvesting from the proposed site would be on an approximate rotation of between 30-40yrs, depending on growth with minimal transport movement in the intervening years.

Prior to commencement of works, an agreement would be sought with authorities to ensure safe passage. Any movement of machinery will follow the parameters of the agreed management plan to ensure ongoing safety.

Provide details of discussions with neighbours, local communities and consultees. For Community Councils and neighbours please evidence who was contacted, date and method of contact used (e.g. meeting, leaflet drop, letter etc.) Where reasonable, you may just identify street names (e.g. larger urban areas).

At an early stage of the application process Scottish Forestry were contacted and provided with details of the proposed planting at Letrault Farm. The feedback related to the presence of archaeological features, vegetation, visibility and landscape concerns. Surveys have been carried out on site to identify and mitigate where required.

During the initial consultation the local community council was contacted, Rhu & Shandon Community Council, with initial concerns relating to access, landscape, biodiversity and recreation.

Main concerns relating to the proposal come from access, in particular, haulage to and from the site using the public road through Rhu. Further consultation with interested parties will be required to resolve this issue and find a solution to move forward.

The RSPB was contacted with recommendations to carry out both a Black Grouse and Raptor Point surveys for the site to assess the current situation and how the proposal may impact species.

Scottish Forestry was contacted relating to concerns raised with regards vegetation, GWDTE's and potential peat >50cm depth.

Nearest neighbours were initially contacted, including residents at Torr Farm & Cottage, which indicated no real concerns over the proposal other than how this would affect the condition of the road. Due to the large number of residents on the haulage route the main source of correspondence has been the Community Council.

Opportunities for further comments will be possible following formal consultation on submission.

You must carry out a site-based assessment of soil and vegetation to match species choice with the particular site. Refer to ([ESC-DSS](#)) during this process.

List the site surveys undertaken to inform tree species selection. For example: soil survey, soil depth survey, vegetation survey.

A walk-over survey of the site was conducted to assist with the design of the woodland and the choice of woodland type and tree species.

This survey considered the local topography, the vegetation present, and determined the soil types and depths, especially regarding peat.

Please indicate the climatic suitability of the site for the tree species you have chosen. Use the [Scottish Forestry Map Viewer](#) - see the 'FGS Climatic Site Suitability' data.

Current land use is livestock grazing with the land capability for agriculture score indicating 6.3 (rough grazing)

The land capability for forestry scores range from F3 (good flexibility for trees), F5 (Limited flexibility for trees) to areas of F6 (Very limited flexibility for trees) on the upper reaches.

The good growth of coniferous and broadleaved trees in adjoining woods suggests that the land should allow the establishment of certain conifers and broadleaved species, and that the land is very capable of producing timber in the medium-long term. This is supported by the ESC analysis results below.

An ESC analysis was undertaken, based on typical locations within the Cpt's. to assess the compatibility of the chosen species.

The analysis has been carried out using the ESC version 4 using; moist soil moisture, medium soil nutrient status and default exposure were used with site management in the form of drainage was included in the analysis.

#### Conifers:

- Sitka spruce - Very Suitable throughout
- Norway spruce – Suitable (in areas identified for planting)
- Scots Pine - Suitable

#### Broadleaves:

- Sessile Oak - Suitable
- Downy Birch - Suitable
- Silver Birch - Suitable
- Rowan - Very Suitable
- Alder - Suitable
- Grey Willow – Very Suitable

- Cherry – Suitable
- Hazel - suitable
- Hawthorn – Suitable (in drier areas)

The use of The Ecological Site Classification (ESC) identifies the National Vegetation Classification (NVC) as both W4.

In brief, there are limitations on species choice, conifers other than Sitka only being suitable on areas depending on site management options, including the addition of drainage.

Forecast yield class for commercial species range for selected species in their potential locations include: -

- Sitka spruce – average YC 20 - 22
- Scots pine – average YC 10 - 12
- Norway spruce – average YC 12 - 14

Woodland Strategy: Describe how your proposal fits with the Local Authority woodland strategy.

### **Land Capability:**

In terms of Land Capability for Forestry, the ground is classified as F5 – F6:

F3: Land with good 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.

The land classification for agriculture has severe limitations due to the soils and/or topography (6.3).

### **Context for Forestry & Woodland:**

This proposal corresponds with themes identified under the Scottish Forestry Strategy, especially points 1 & 7.

The proposal is sited across existing farmland that has woodland blocks nearby, these being either commercial to the east or native woodland blocks to the west and will create good habitat and biodiversity links and potentially enhance quality of life benefits.

### **Opportunities for Woodland Expansion:**

This is an application for a medium scale commercial mixed woodland scheme and is defined in the SNH in their Landscape Assessment of Argyll and the Firth of Clyde, as sitting within the classification type Rolling Farmland with Estates. A proportion of the

planting area is within an area highlighted as being preferred or potential for woodland creation. The remaining area falls within an area highlighted as being in a sensitive area and discussions with the local council have not conclusively identified why this is designated as such. Initial discussions have mentioned the nearby Local Nature Conservation Site (LNCS), the railway or nearby housing and if so, initial discussions have ruled out any concerns.

The forestry industry has been identified as providing multiple benefits and indicates the right tree should be chosen for the right place. This woodland type is highlighted as providing multiple benefits including biodiversity, water management, recreation and as a source of timber in the future.

Increasing woodland cover to sequester carbon and developing the biomass sector, create significant opportunities. Commercial woodlands have shown the ability to sequester carbon over the growing period, and beyond depending on the end use. Additionally, the biomass market will help to reduce our reliance on fossil fuels through providing a renewable resource that is sustainable and reliable.

Woodland expansion in the upper parts of river catchments, and on river floodplains may assist in natural attenuation schemes, slowing flow rates and limiting the erosive power of floodwaters.

This proposal will also help diversify the land at Stuckenduff by utilising under used agricultural land that would otherwise be neglected.

In areas where wildfire is a risk to the woodland describe how you will address the risks and how this has been considered in the woodland design. Refer to [Building wildfire resilience into forest management planning](#) for information.

Stuckenduff Farm, as with all woodland sites, could be at risk from wildfires. The location of the proposal sits above Rhu and will be serviced via the existing access through the neighbouring plantation.

The proposal is also close to the Gare Loch which could be used as source of water, by helicopter, in an emergency.

Additionally, Stuckenduff will be on the list of sites covered by Scottish Woodlands during the peak fire season who have a manager on call should they be required.

If applying for the productive conifer options please use the Timber Transport Forum – [Agreed Routes Map](#) and confirm the sites timber route classification i.e. agreed, consultation, severely restricted, excluded or no classification.

Haulage of timber in the future will be taken through the neighbouring plantation down through ATTG Consultation Route from the Highlandman's Wood, Rhu to the Dumbarton Arrochar (A814), Gareloch Road. The route utilises the unclassified public roads Station Road and Pier Road, Rhu to the junction of the A814 opposite Rhu Marina.

This is a Timber Transport Consultation Route and has been recently used for haulage from the neighbouring forest, with a management plan put in place to ensure not only continued public use and safety but also to protect the infrastructure.

Harvesting from the proposed site would be on an approximate rotation of between 30-40yrs, depending on growth with minimal transport movement in the intervening years.

Prior to commencement of works, an agreement would be sought with authorities to ensure safe passage. Any movement of machinery will follow the parameters of the agreed management plan to ensure ongoing safety.

If applying for the Native Woodland options please use the 'Native Woodland Habitat Network' map in the 'FGS Target and Eligibility' folder on the [Scottish Forestry Map Viewer](#) and describe the habitat network zones your application is within i.e. primary, secondary or out with the habitat network.

The proposal for Upland Native Birch at Stuckenduff sits within the secondary habitat network zone and will provide good linkage of habitat to existing areas of native woodland.

## Sensitive Areas & Potential Impacts

### Sensitive Areas:

- National Nature Reserve or Site of Special Scientific Interest (SSSI)
- National Park
- World Heritage Site
- Scheduled Ancient Monument
- National Scenic Area
- Natura sites – Special Area of Conservation (SAC) or Special Area of Conservation (SPA)
- Land on which there is a Nature Conservation Order
- Deep peat soil

### Potential Impacts:

- Population & Human Health
- Biodiversity
- Land, Soil, Water, Air, Climate
- Material Assets, Cultural Heritage, Landscape

List any **Sensitive Areas** and any **Potential Significant Impacts** relating to your site, including appropriate mitigation (**refer to Annex 1**). Detail any surveys completed to inform this assessment.

*For complex cases the Issues Log (**Annex 2**) can be used to record this instead.*

*(Scotland's Environment Web Land Information Search*

*<https://www.environment.gov.scot/maps/land-information-search/> is a useful resource which may help you identify some of the constraints within your site).*

Following initial consultation, the main sensitivities that have been identified is the presence of archaeological evidence and potential vulnerable bird species on site. As such an Archaeological walkover survey has been carried out with the results used to modify the planting design.

While there was no Black Grouse lek site located on Stuckenduff, they have been seen on the perimeter with leks located in neighbouring land at Letrault.

Following discussion with the RSPB, the recommendation was that the current lek on the neighbouring proposal would become too enclosed for Black grouse to continue to use once the trees grow around it, and it was proposed to fill this in. The leks will then move north east or west to the hill ground.

In order to improve this ground for Black grouse it was proposed to alter the woodland edge by creating a broadleaved strip, planted with suitable species for Black grouse. This provides a more varied food source for the birds and a buffer between the commercial planting and the hill ground, where Black grouse will spend the majority of their time.

To mitigate any potential effects of direct mortality, in terms of the collision of black grouse with deer fencing, the use of fencing within the site should be minimised. However, as fencing will be essential to ensure the establishment of many species, batons will be installed onto all new and existing fencing.

The RSPB also requested that a site survey be undertaken to assess the potential breeding presence of scarce raptor species, specifically Hen Harrier & Merlin, which was undertaken by Tetrix Ecology (see Appendix 1). While the survey recorded both species in the neighbouring land, these sightings were both male, and while this does indicate the site forms part of their territory, the surveys failed to record any additional direct and/or indirect evidence of breeding pairs on site.

It is recommended however that all required works in support of the proposal are completed outside of the breeding raptor season as per the following:

- Hen Harrier (late February to August/September); and
- Merlin (late March - August inclusive).

***Please ensure that any maps or survey reports that have been produced to support your application are uploaded to the online application system.***

## Management Operations

### All Applications

Having assessed the site please provide information about how you are going to establish the new woodland.

**Ground Preparation:** Describe the method that you will use, including dimensions. Where you propose multiple ground preparation techniques then you must identify these on a map.

All ground preparation will comply with the Forestry Commission guidelines 'Cultivation of Soils for Forestry' (Bulletin 119).

- The aim is to provide a suitable planting location for tree establishment and growth while minimising visual and hydrological impacts.
- The area will either be prepared via continuous mounding, excavator mounding or screefing.
- Locations which are difficult to access with machinery, may be prepared by individual hand mounding
- Vegetation control may be undertaken to facilitate subsequent cultivation works
- All gorse within the planting areas will be removed prior to planting, using a combination of manual and mechanical means. Clearance works will avoid the bird-breeding season.
- Bracken will be controlled through the use of herbicides carried out by way of helicopter on the larger areas with smaller, more sensitive, areas spot sprayed by knapsack

**Drainage:** Identify any existing drains/watercourses and provide information relating to new drains.

It is anticipated that drainage will be required, both to assist in tree establishment, and to provide a dry surface for maintenance and access purposes. All drainage works will comply with the 'Forests and Water' guidelines (5th Edition).

Specifically: -

- New drains will not exceed 2-3 degrees angle of slope.
- New drains will terminate short of watercourses.
- Silt traps will be constructed to prevent sediments reaching the watercourses.

**Protection:** Describe how the site will be protected. For example: fencing, tree guards/shelters and pest management.

Append a deer management plan if required. You should refer to the [Deer Management Best Practice Guide](#) and the [Joint Agency statement on deer fencing](#). You may be asked to submit a checklist from the Joint Agency guidance (May 2010).

Due to deer, Roe & Red, along with rabbits, hares and sheep in the locality the proposal will require a deer fence to protect the most vulnerable species.

Both field and self-closing gates will be added to facilitate access, not only for management works but also to allow the local community to enjoy outdoor recreation.

Careful planning has been taken to reduce the length where possible. The line of this fence will run through the site, opposed to the boundary, and will follow designed open ground. While this may lead to areas of Sitka spruce being fenced in, it does reduce the overall length and in turn total grant, rather than fencing around MC/NBL areas.

The existing fences are generally in a poor condition and require replacement, while new fence lines are required in some sections to form new boundaries. In some location's fences will be set back slightly from existing trees, stone dykes, and ditches to aid their construction and maintenance.

The fences will also have batons added to the fence to reduce the chance of bird strikes due to the location of the Black Grouse Leks on site.

In addition, all the broadleaves will be further protected by vole guards as per the table below:

Option	Mix	Area	%	Density (per ha)	No.
Conifer	NBL	3.44	100%	1,100	3,780
Upland Birch	NBL	5.78	100%	1,600	9,267
		<b>9.22</b>		<b>Total</b>	<b>13,047</b>

**Planting; please provide the following:**

- Species to be planted and percentage of each. (Please use the components area table to record hectares planted).
- Describe the nursery stock and planting method to be used.
- Confirm if you will be planting vegetatively propagated Sitka spruce.
- For native woodland creation specify the [Seed Source Zone](#).

The planting proposal at Stuckenduff is incorporates one option and has been chosen to fit with the site conditions and includes:

- Conifer
- Upland Native Birch

The required species mix which is summarised below.

Design features include: -

The use of native broadleaf trees and shrubs, in conjunction with commercial conifer species, to deliver biodiversity benefits and linkage of habitat

- The use of designed open ground used to create more rounded woodland edges to fit within the existing landscape.
- Where the broadleaves run alongside conifers, a buffer zone of 8-10m will remain unplanted to ensure the broadleaves become established with plant density increased within the planting blocks to compensate

Summary of Planting Options:

<b>Conifer Option:</b>	62.43 ha	
Sitka Spruce:	45.29 ha	(72%)
Norway Spruce:	5.63 ha	(9%)
Scots Pine:	2.19 ha	(3.5%)

- This mix will be planted at an average of 2m x 2m spacing, to achieve min. 2,500 stems per ha at year five.

NMB:	3.44 ha	(5.5%)
of which NVC is W4:		

Downy Birch: 1.03ha (30%), Grey Willow: 0.69ha (20%), Alder 0.69ha (20%), Rowan: 0.35ha (10%), Silver Birch: 0.17ha (5%), Sessile Oak: 0.17ha (5%), Hazel 0.17ha (5%) & Hawthorn: 0.17ha (5%)

Open Ground:	6.28 ha	(10%)
--------------	---------	-------

**Upland Native Birch:** 6.61 ha

NMB: 5.77 ha (87%)

of which NVC is W4: 5.37 ha

Downy Birch: 2.89ha (50%), Grey Alder: 1.16ha (20%), Grey Willow: 1.16ha (20%), Rowan: 0.58ha (10%)

- W4 will be planted at an average 2.5m x 2.5m spacing to achieve min. 1,600 stems per ha at initial planting with a target density of 1,100/ha at year five.

Open Ground: 0.83 ha (13%)

## Planting Stock

- Coniferous stock will generally be 2-3-year-old transplanted or undercut stock, 20-40cm tall
- Broadleaved stock will generally be transplanted or undercut stock at 30- 50cm
- Native broadleaved plants will be Native Seed Zone 106. If such plants cannot be sourced, the next nearest seed zone suitable will be sought.
- Trees and shrubs will be planted using a 'T' or 'L' shaped notch, on the lee side of the furrows and mounds.

**Maintenance:** Describe the maintenance regime for the site (e.g. monitoring, weeding, beat-up, etc.).

- All fences and gates will be monitored regularly for signs of intrusion and maintained in a stock/deer proof condition.
- All plants and guards will be maintained.
- Site will be weeded as required. This will be achieved by the applications of systemic and residual herbicide and by hand weeding as necessary.
- Replacement planting will be undertaken to ensure that the required stocking densities are maintained until year 5.
- Guards & shelters will be removed when the trees are fully established.
- Drains will be maintained as required.

**Fertilisation:** Where applicable, describe the proposed fertiliser regime e.g. application rate, timing, etc.

Plants will be monitored for signs of disease, nutrient deficiency, and damage, and

appropriate action taken as necessary.

- If necessary, slow release fertiliser will be applied to plants as required. Application will comply with current Forest and Water Guidelines and by qualified operatives.

**Other:** Please include any other silvicultural detail here.

n/a

## Annex 1

### **Assessment of Potential Impact**

Please use the following guidance to assist with describing any potential significant impacts and any mitigation which is proposed:

- **Population & Human Health:** Detail any discussions which you have had with neighbours, local communities or other stakeholders and explain how this has influenced your proposal. Explain what public access is currently undertaken on the site and what provisions you plan to make to continue or improve this in adherence with the [Scottish Outdoor Access Code](#).
- **Cultural Heritage:** Indicate what survey work has been undertaken and describe how archaeology will be protected.
- **Soil:** Provide an accurate assessment of the soil on site and describe how you will manage the quality of the soil including any effects from erosion and compaction.
- **Water:** Detail the nature of the likely impacts on water bodies or water supplies from your activities and how you will mitigate these impacts.
- **Air:** Detail the nature of the likely impacts on air quality or the impacts on light provision.
- **Biodiversity:** Detail the nature and extent of high value habitats such as those listed on the [Scottish Biodiversity List](#) and describe how you will protect these habitats. Detail the nature of the likely impacts on wildlife from your activities and how you will mitigate these impacts. Refer to [European Protected Species](#) for guidance.
- **Landscape:** Provide details of how the impact on the landscape has been assessed and how the application has been designed to minimise any impact.
- **Climate:** Provide details on the vulnerability of the project to climate change and how this impact was mitigated.
- **Land:** Does your application have an impact or an effect on prime agricultural land (defined as land use classes 1, 2 and 3.1), or the local land use balance with agriculture?  
Detail the nature of the likely impacts on agriculture from your activities and how you will mitigate these impacts and integrate with forestry.  
You should refer to the [Guidance About Woodland Creation on Agricultural Land](#), located in the further information and technical guidance section of the [FGS woodland creation](#) web page.
- **Material Assets:** Identify and describe all built and natural assets that are relevant to the site and which could be adversely impacted by the proposal e.g. utilities, minerals. Describe any mitigation proposed for these features.

### Annex 2 Issues Log

Issue (include date and raised by)	Applicant's Comments	FCS Comments	Agreed Mitigation	Status (Open, Closed)	Significance of Impact (High, Medium, Low)
<i>e.g. Archaeology – Scheduled Monument at NS123456. HES, 23/10/16.</i>	<i>e.g. Scheme design includes OG to buffer Scheduled Monument as per UKFS. John Smith, 25/10/16</i>	<i>e.g. Applicant has taken on board HES feedback and designed the scheme in accordance with best practise. Susan Jones, 27/10/17.</i>	<i>e.g. 20 metre OG buffer around SAM.</i>	<i>e.g. Closed</i>	<i>e.g. Low</i>
<b>Population &amp; Human Health</b>					
<b>Cultural Heritage</b>					
<b>Soil</b>					
<b>Biodiversity</b>					
<b>Landscape</b>					
<b>Material Assets</b>					
<b>Water</b>					
<b>Air</b>					
<b>Climate</b>					
<b>Land</b>					