

# Singdean Forest

# **UKWAS Management Plan Renewal**

2024-2043

submitted by Tilhill Forestry Ltd

on

31 October 2023

to

Scottish Forestry

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#### 1. INTRODUCTION

#### Location

Singdean Forest is situated approximately 16 miles South-east of Hawick in the Scottish Borders. The property borders the South-west boundary of Wauchope Forest which is a large commercial forest adjoining Kielder Forest. The property also borders Myredykes Forest on its South-east boundary.

The grid reference of the centre of Singdean Forest is NT 59052 01595. Entry to the forest is off the B6357, grid reference NT 58870 02911. This access also exits onto an agreed timber haulage route. There is also access through Myredykes Forest via a link road between the 2 properties.

#### **Area**

Singdean Forest covers an area of 313.48 ha. The forest was planted in the 1970's as a commercial forest plantation. Since then, the forest has undergone much restructuring in line with UKFS.

### Ownership [1.1.3]

Singdean Forest was purchased by Gresham House Forest Fund 1 in 2013. The BRN for the property is 161153, the MLC is 92/769/0035.

### **Declaration of Commitment [1.1.5]**

The management of the forest will comply with the UK Woodland Assurance Standard and will be certified through the Tilhill Forestry UKWAS Certification Scheme. A Declaration of Commitment will be signed, to comply with the requirements of UKWAS in the management of Singdean over a minimum of 5 years.

### **Anti-corruption [1.1.6]**

#### **Tilhill Code of Conduct**

All activities will be undertaken in accordance with the Code of Conduct (POL/HR/02)

### Management

Ben Schofield is the Forest Manager responsible for Singdean Forest on behalf of Tilhill, Bank House, 40 High Street, Jedburgh TD8 6DQ. All management is overseen by Tilhill for the property.



### 2. MANAGEMENT PLANNING

### Long-term vision [2.1.1 a]

Singdean is, primarily, a commercial forest. But has undergone restructuring to increase and improve biodiversity within the property. There are several aims for the long-term vision for the forest:

- 1. To maximise the owner's investment through the practice of sound silviculture.
- 2. Maximise production of commercial conifers through the use of improved planting stock where available.
- 3. Maintain and enhance the amenity, conservation and biodiversity value of the forest within the constraints of the primary objective of maximising the owner's investment.
- 4. Sequester carbon.

### Communication of policy and objectives [2.1.1 b]

Elements of relevant policies and objectives will be communicated to those operating within the forest through work instruction packs. The instruction will state that the forest is certified through UKWAS and explain how that relates to the instructed work. Examples of statements include:

- For contractors applying pesticides, a statement "this forest is managed in accordance with UKFS & UKWAS with an objective to ensure that the use of pesticides is kept to a minimum".
- For harvesting/ground preparation contractors, consider a statement "this forest is managed in accordance with UKFS & UKWAS with an objective to prevent damage to soils and water."

Emphasis will be placed on brevity and being focused on their role/activity with the forest and how they play a part in delivering the policy & management objectives.

### Management objectives [2.2.1 g]

The management of the forest will be enhanced in accordance with the following key objectives:

- Maximise owner's investment.
- Sequester carbon.
- Maintain & enhance biodiversity.
- Reduce the impact of browsing mammals on young crops.
- Manage the forest to UKFS and UK Woodland Assurance Standard.
- Operational works to comply with Forest & Water Guidelines.

#### Strategy

Most of the mature coupes have been felled within the property with only a few fell coupes remaining. These coupes will be felled in Fell Phase 1 (2024 – 2028) and Phase 2 (2029-2033) to complete the harvesting of the first rotation crops and begin the final stage of restructuring. These fell coupes will also create net timber revenue contributing towards the owner's investment objectives. The replanted trees in the



future restock coupes as well as the current restocked crops will also contribute to carbon sequestration.

Past restructuring has helped to deliver increased biodiversity by identifying long term retentions and natural reserves as well as planting native broadleaves in the riparian zones and the provision of deadwood habitats. Restructuring of the remaining fell coupes will also increase and enhance biodiversity by including more diverse conifer and broadleaf species.

The plan aims to deliver quality timber and to provide environmental and landscape benefits through the restructuring process. Opportunities to continue to improve protection and management of landscape, public access and sensitive sites will be acted on where feasible and practicable. These will all be done in line with UKFS & UK Woodland Assurance Standard.

### **Review [2.2.3]**

The UKWAS Management Plan will be reviewed every 5 years with a full plan revision after 10 years; adjustments will be made as the plan progresses. Activities will be recorded on annual summaries and within the set revision periods. The owner will receive annual Management Reports which will set out anticipated operations and net returns as well as providing measured operational and financial comparisons of the previous year's progress.

### **Consultation [2.3]**

#### Stakeholders [2.3.1]

All stakeholders have been consulted formally in the process of compiling this plan. Consultation information was made available to all parties and included an outline of the intended operations, with a concept map. As well as all the statutory consultees, neighbours and other stakeholders were included. This plan will also be made available on the public register. A copy of the scoping report has been seen and approved by Scottish Forestry and a copy is included in the appendices.

A summary of the key issues is below:



Part 2 – Key Issues				
Key Issues	Raised by	Detail any likely impact	Action(s) to be taken to address key issues and identify location within Forest Plan	Notes
Archaeology	Keith Elliot (SBC)	Nothing of interest identified	Any new findings will be recorded while surveying sites	General comments made.
Wildlife	Anne Brown (Nature Scot)	Nothing of interest identified	Any new findings will be recorded while surveying sites	General comments made.
No specific issues raised but Dr Kolbe asked if Tilhill could attend the next Community Council meeting in July and delay the response deadline to 31st July.	Dr Geoffrey Kolbe on behalf of Upper Liddlesdale & Hermitage CC	Nothing of interest identified	Tilhill were not willing to delay the scoping process but as an alternative offered to meet with Dr Kolbe on site before the response deadline of 30 <sup>th</sup> June to explain our proposals in more details if required. Tilhill have also offered to answer any questions the community council may have regarding the Plan proposals.	Tilhill offered to meet or give more details of the Plan proposals before response deadline of 30 <sup>th</sup> June - no further correspondence has been received from the community council.
Archaeology	Historic Environment Scotland	Nothing of interest identified	None	General comments made.

### Squirrel, rabbit, voles [2.3.2 b]

Voles are present within the property but there have been no recordings of any significant vole damage to restocked trees over the past 10 years since the start of the forest restructuring.

Rabbits may be present in very low numbers, but no sighting have been recorded. Signs of their presence and any subsequent damage will be monitored and recorded as part of the forest management activity and appropriate management and/or control will be undertaken if deemed necessary to improve tree establishment.

The presence of red squirrels in Singdean Forest is unknown, however neighbouring Wauchope Forest is recognised as an area of importance for red squirrels. In case red squirrels do inhabit the property, best practice guidance will be followed to protect red squirrels and their dreys should they be discovered.

The change to a mixed age-structure forest may encourage other species into the forest. Wildlife will be recorded as part of regular forest management visits and walk-over wildlife surveys will be carried out before major operational work is carried out (harvesting and new road construction).

### **Productive potential [2.4]**

#### Soils & Water [2.4.1]

Suitable buffers to watercourses will be maintained during forestry operations, and the quality of water will be monitored. The quality of drains and watercourses will be improved where possible, and the amount of native broadleaf coverage along riparian corridors will be increased. All operations will be carried out in line with Forest and Water Guidelines.

Soils will be actively protected during forest operations to prevent compaction and erosion. Soils within Singdean mostly comprise of significant areas of calluna/eriophorum blanket bog, ironpan and peaty ironpan soils, with smaller areas of



flushed & surface water gleys, imperfectly drained brown earth soils and imperfectly drained podzols.

Given that the current rotation of Sitka spruce on the peaty areas of the property are YC 16+ and the ESC data shows Sitka spruce is a suitable species for these areas, it's believed that Sitka spruce and other conifer species will be a suitable second rotation crop which will produce good growth and create positive greenhouse gas balance (according to the *Deciding future management options for afforested deep peatland* guidance).

Harvesting and ground preparation operations will be planned and monitored to reduce impact to the soil and avoid damage. Brash will be left on restock sites to provide protection from soil damage/rutting and to provide nutrients to the soil as it decomposes. Operations will be planned to minimise soil disturbance, with vulnerable areas highlighted on hazard maps during pre-commencement meetings.

#### **Climate conditions**

The average annual rainfall for Singdean is 1735mm. Precipitation is spread evenly, with about 186 days of rainfall per year. Winters are usually coldest in December with average daytime temperatures of 5°C, dropping to -2°C overnight. Summers are typically warmest in July with average day time temperatures of 18°C dipping to 10°C overnight. Prevailing winds come from the southwest, however there is some variation.

### **Hydrology**

There are several drains and small watercourses within Singdean Forest, some of which have become eroded due to overshadowing by conifers and lack of ground vegetation. High volumes of precipitation have also caused these watercourses to erode.

#### **Adjacent land uses**

Singdean shares most of its boundaries with Wauchope Forest, Myredykes Forest and Fanna Hill Forest. Therefore, most of the neighbouring land use is also commercial forestry with some upland livestock farmland on the southern boundary.

### Design planning [2.5.1 a]

Environmental impacts are a key consideration in the planning stages of all operational work within the forest. Hazards and constraints will be identified prior to any work commencing. These will inform risk assessments that identify any elevated risk and how these are to be mitigated. Only competent contractors will operate within the forest, these will hold current competence/ training certificates as well as being deemed competent by the relevant FWM. The quality of all work will be confirmed through assurance inspections.

Consideration of environmental aspects has also informed the design process in the past and will continue to do so in the future. Increasing the diversity of tree species planted within the forest, provides additional resilience against the effects of climate changes and pests and diseases. Increasing the area planted with native broadleaves will create a varied habitat that will help to further enhance and protect the watercourses and improve riparian zones.



### **Environmental impact assessment [2.5.2]**

An Environmental Impact Assessment Screening Opinion Request Form was submitted to Forestry Commission Scotland in February 2019 for the construction of approximately 150 metres of new forestry haul road with stacking benches to allow for timber extraction and haulage from coupe 4 (compartments 20 & 21). An EIA was not required but planning permission was required as the new road was to be constructed within 25 metres of and running parallel to the B6357 public road. Planning permission was sought from Scottish Borders Council and was approved on 6<sup>th</sup> June 2019.

### Wind, fire, pests and diseases [2.5.3]

Prevailing winds come from the southwest, however, due to storms in recent years this has varied and caused windthrow along the exposed edges of the remaining mature crops and within the crops in some areas. Timber harvesting will be completed in Fell Phase 1 to reduce the risk of further windthrow and to achieve the owner's main objective of maximising investment value.

The wind throw hazard classes for the property are shown in the table below:

WHC	0	1	2	3	4	5	6	Totals
Area (Ha)	48.27	0	0	47.16	97.05	121.00	0	313.48
Area (%)	15.40%	0%	0%	15%	31%	38.6%	0%	100%

Crop monitoring will focus on signs of common plant health issues as well as common pests. General tree health will also be used as an indicator to focus on any areas that might raise concern.

#### New planting [2.6.1]

No new planting is proposed.

### **Restructuring [2.7.1]**

Due to the proportion of felling that has already taken place within the property, much of the restructuring has already taken place. The remaining first rotation crops will be restructured in line with UKFS and the UK Woodland Assurance Standard (UKWAS).

### **Species selection [2.8.1]**

#### **Species choice**

Species choice is determined by growing conditions, including climate, soils, available water and nutrients, topography, and aspect. Singdean soils comprise mainly blanket bog, ironpan and peaty ironpan soils, with smaller areas of flushed & surface water gleys, imperfectly drained brown earth soils and imperfectly drained podzols. The website 'Scotland's Soils', describes the area of land which Singdean sits within as having very limited flexibility for the growth and management of tree crops.

The Ecological Site Classification Decision Support System, an online modelling software provided by Forest Research (http://www.forestry.gov.uk/esc), highlights the limited suitability of the site for tree species diversity; the limiting factors being soil nutrient regime. Alternative conifer choice is limited to some pines (Scots pine and Lodgepole pine) and alternative spruce species (Norway spruce); these will form the basis of the crop to be restocked. Larch will not be considered for planting given the



current threat from Phytophthora ramorum. Similarly, the choice of suitable broadleaved species is limited, and replanting will focus on species that will cope with generally poorer soils, high elevation and exposure.

#### Restocking

Sitka spruce will remain the main productive conifer species for the remaining restock coupes due its inherent suitability for a range of site types with different soils and exposure.

Lodgepole pine is the most suitable alternative conifer species for the blanket bog soils and potentially capable of returning a productive yield. Pure blocks of LP will be planted on the upper margins of compartment 14 where they join the unplanted hill ground of Coomb Edge.

Scots pine, Aspen and Birch will be planted on the western and southwestern slopes of compartments 18 & 19 to provide visual diversity on this quite prominent face which is clearly visible from the B6357 when heading north.

Mixed conifer species will include Douglas fir, Norway spruce & Noble fir. These species could change due to species availability & site conditions. Mixed conifer within the property already consists of Douglas fir (65%), Norway spruce (25%) & Noble fir (10%).

Areas of Sitka spruce and Lodgepole pine planted in the first rotation on the blanket bog soils at the northeast end of the forest (compartment 8) are to be retained due to their slow growth, poor timber quality and biodiversity value.

Conifers will be restocked at an average density of 2,600 – 2,700 stems per hectare with the objective of achieving a minimum stocking density at establishment of 2,500 stems per hectare.

In the riparian areas broadleaves are integrated with open ground and have been planted to occupy approximately 50% by area of the riparian zone. These areas are mapped on the restock map with the designation MB/OG. Remaining riparian areas to be restocked within compartments 13, 14, 17 & 19 will be planted to the same stocking density.

Broadleaves will be planted at an average density of 1,600 stems per hectare and will be protected in short, 60cm tree shelters to aid initial establishment.

Native broadleaf species will include Silver & Downy birch (20%), Common Alder (30%), Aspen (10%), Rowan (10%), Hawthorn (5%), and willow species (25%). Larger seeded broadleaves (oak, hazel) will not be planted to help prevent the migration of grey squirrels into the forest. Aspen will also be planted in an intimate mix with the Sitka spruce (4:1 SS/Aspen) in the southwest corner of compartment 13 & 19 for visual diversity when viewed from the public road.



### Planting Year by Area (current)

P Year	1974	1975	1976	1977	2015	2017	2019	2020	2021	2022	OG	Total
Area	20.45	19.04	31.89	19.03	39.28	42.66	17.83	27.87	27.88	19.3	48.25	313.48
P Year %	6.52%	6.07%	10.17%	6.07%	12.53%	13.62%	5.69%	8.89%	8.89%	6.16%	15.39%	100%

### Area by Age Class

	Current	Year 2043
	Area (ha)	Area (ha)
Open Ground	48.25	54.43
0-10	174.82	
11- 20		63.1
21-30		175.5
31-40		
41-50	90.41	
51-60		20.45
61-70		
71-80		
81-90		
91-100		
100+		
Total	313.48	313.48

## Species by Yield Class by Area

	Area Sto	cked (ha)				OG Ar	ea (ha)	48.25
Yield Class	SS	DF	GF	HL	LP	MC	MB	Total
4							11.7	11.7
6							6.6	6.6
8	6.6				4.52			11.12
10	5.17							5.17
12	14.8				4.04			18.84
14	18.48		0.46	1.32				20.26
16	121.36			1.1	0.56	3.79		126.81
18	20.1	7.28						27.38
20	37.35							37.35
22								0
24								0
Stocked Area	223.86	7.28	0.46	2.42	9.12	3.79	18.3	265.23
Total Area								313.48
Species as %								
of total stocked								
area	84.40%	2.75%	0.17%	0.91%	3.44%	1.43%	6.90%	100%



### **Species proportions [2.8.1]**

#### Species by Area in 2023

Species	SS	DF	GF	HL	LP	MC	MB	OG	Total
Area	223.86	7.28	0.46	2.42	9.12	3.79	18.3	48.25	313.48
Species %	71.41%	2.32%	0.15%	0.77%	2.91%	1.21%	5.84%	15.39%	100%

**Species by Area in 2043** 

Species	SS	SP	LP	MC	MB	OG	Total
Area	204.49	3.36	15.5	12.48	23.22	54.43	313.48
Species %	65.2%	1.1%	4.9%	4.0%	7.4%	17.4%	100%

(Please note there is no change between years 10-20)

The table below summarizes the planned species percentages for Singdean Forest in 2043 against the requirements of the UK Forestry Standard 4<sup>th</sup> Edition (2017)

	Singdean	UKFS	Max/Min
Sitka spruce	65.2%	75.0%	Maximum
Other conifers	10%	10.0%	Minimum
Native Broadleaves	7.4%	5.0%	Minimum
Open Ground	17.4%	10.0%	Minimum
Total	100.0%	100.0%	

The text below is extracted from page 32 of the UK Forestry Standard 4<sup>th</sup> Edition (2017) from the section General Forestry Practice/Forest Structure:-

Maintain or establish a diverse composition within the forest management unit; where only one species is suited to a site and management objectives, a maximum of 75% may be allocated to a single species (see notes below). In all cases, incorporate a minimum of:

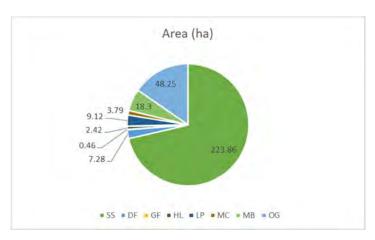
- 10% open ground or ground managed for the conservation and enhancement of biodiversity as the primary objective
- 10% of other species
- 5% native broadleaved trees or shrubs.



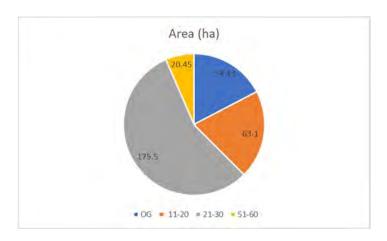
Graph of Age Class Distribution at present



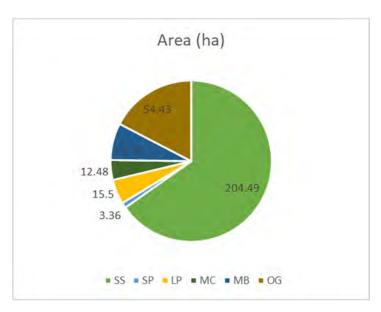
Graph of Species Distribution at present



Graph of Age Class Distribution in 20 years







Graph of Species Distribution in 20 years

### **Introductions** [2.9.1]

There a no known non-native or evasive species on site.

### Silviculture [2.10]

A phased felling plan has been adopted to maximise financial return within the requirements of restructuring. This approach will be carried forward with the remaining first rotation crops.

#### Clear felling

Clearfelling has been the silvicultural system selected as being the most suitable for this forest due to its inherent instability related to soils, elevation, exposure and aspect. The remaining first rotation crops will be clearfelled in the coming years.

To comply with the UKFS, coupes will not be felled until adjacent restocking areas have reached a minimum average height of 2m. If this changes collaboration with Scottish Forestry will be necessary.

#### **Thinning**

Opportunities for early thinning of the next rotation of trees will be explored as the crops are approaching 20 years old (2035 onwards).

#### **LISS**

Use of Low Impact Silvicultural Systems is not considered possible at Singdean due to the inherent instability of this site.

### Semi natural woodlands [2.10.2]

There are no semi-natural woodlands within Singdean.



# Management strategies and actions to maintain or enhance areas and features of high conservation value [2.11.2]

Areas of Sitka spruce and Lodgepole pine in the northeast corner of the forest have been identified for Long-Term Retention and will be retained as a habitat which will develop with age to provide increasing biodiversity and wildlife ecosystems. Areas of broadleaves along riparian zones throughout the property have been identified as important habitats for diversity. These riparian areas will be protected and managed by minimal intervention to allow the development of improved habitat, ecosystems and biodiversity. As these habitats develop with age, they are likely to be designated as Natural Reserves in future Plan revisions.

### Deer management [2.12.1]

The crop is now approaching the final period of felling and restocking of the first rotation crops. As such the main objective of deer control is to minimise browsing and fraying damage in restocked areas, and areas where natural regeneration of both coniferous and broadleaf species is desirable. This is to enable the development of trees with good form, free from damage.

Sporting rights are in hand and deer control is carried out by a professional deer controller. Cull figures have been monitored for many years and control is implemented following assessment of damage levels based on the following objectives and methodology:

### **Objectives**

To maintain browsing damage to the forest crop at an acceptable level. Based on current industry good practice effective deer control should aim to maintain average leader loss on conifer crops from deer browsing at 10% or less. This is to promote woodland succession and the development of a high-quality crop. To minimise the impact on neighbouring properties from emigration.

#### Methodology

Culling is carried out by a stalking professional. Full use will be made of all management options by the deer controller including out of season and night shooting if deemed necessary and appropriate. All necessary permits will be acquired before undertaking the above management options.

Assessment and monitoring of browsing damage on restock sites will be carried out by both the deer stalker and the forest managers to aid with the targeting of areas for deer control.

#### Fire plan [2.12.2]

Any incidents of fire within the forest will be dealt with in line with the Singdean Forest Fire Plan.

### Conversion [2.13]

No conversion is to take place within Singdean Forest during the Forest Plan period.

### **Christmas trees [2.13.3]**

No Christmas trees are to be grown within Singdean Forest during the Forest Plan period.



### **Monitoring [2.15.1]**

### **Proposals for monitoring management activities**

Management Objective	Monitoring Type	Monitoring Objective	Method	Frequency	Results Held	Review Period
Timber Production	Production records from harvesting	Compare actual production against predicted	Summary of actual harvesting production	On completion of harvesting	Property Files	5 Years
Maintain Broadleaf Riparian zones	Site checks	Prevent establishment of self- seeded conifers	Walk through inspection	Once every 5 years	Property files	5 Years
Minimum chemical use	Site checks and Pesticide Application Records	Ensure minimum usage	Site checks prior to and during chemical applications	During spraying operations	Property files	Ongoing during establishment
Minimise browsing impact	Site checks	Assess levels of damage	Site visits at times of risk	As required	Property files	Ongoing
Maintain good tree health	Visual check	Prevent spread of pests & diseases	Visual checks during site visits	As required	Property files	5 years
Accumulate standing & fallen deadwood across the forest	Harvesting contracts & site checks	To record that deadwood is being retained	Document deadwood requirement at harvesting pre-comm.  Visual checks during site visits.	At harvesting pre-comm meetings.  During harvesting site checks.	Property files	5 years

#### 3. WOODLAND OPERATIONS

### **Licences [3.1.2]**

There are currently no felling permissions for this property.

A new felling permission for the felling detailed in this plan will be issued by Scottish Forestry following plan approval.

Where badger setts are present on or in the vicinity of felling sites, a licence will be obtained from Nature Scot prior to operations commencing; operational control measures and restrictions outlined within the licence will be followed.

Any works requiring authorisation under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 will require written consent from SEPA. Authorisation is



required for operations other than specific low risk activities which are covered by the General Binding Rules.

Scottish Borders Council will be consulted through the use of Prior Notification (PN) where road construction or significant upgrading works are planned.

### **Emergency Response [3.1.3]**

Emergency Response Cards are issued to all contractors working within the forest; this includes information on location, emergency RVs, the nearest A&E Hospital, and SEPA contacts. It also contains details of spill kit locations and contact details for specialist contractors, should this prove necessary. Assurance inspections will include checking that suitable equipment is held and that contractors are conversant with emergency procedures.

### Whole tree and biomass harvesting [3.2.3]

There is no plan to conduct whole tree harvesting in the forest however skyline extraction of whole trees may be required for the crops below the forest road in compartments 17 and 19. This will be determined at the time of marketing the timber for sale.

### **Burning up [3.2.4]**

No burning up is proposed.

### Roads and rides [3.3.1 & 3.3.2]

The existing road network within Singdean is based on a good foundation but some sections will require upgrading before any further felling takes place. Road upgrading will be accompanied by harvesting infrastructure improvements, including forwarder tracks and stacking areas.

The remaining felling coupes will need some additional stacking areas; these will remain as permanent operational infrastructure for future felling operations.

#### Pesticides [3.4]

The need to use pesticides will be evaluated against alternative controls and measures to attempt to eliminate the problem at source. This evaluation will follow the decision framework described in the FC Practice Guide 15 "Reducing Pesticide Use in Forestry" 2004. Likely uses are for weeding and to control outbreaks of Hylobius abietis. Pesticide use will be reviewed annually with a 5-year review for UKWAS.

Where pesticides are required, the least harmful pesticide approved for the required use will be identified by evaluating human safety, environmental safety, effectiveness and cost. Application of pesticides will be carried out by competent operators, in accordance with the product label, using the minimum concentration necessary to achieve the desired control. Records of competence and application will be retained. Pesticides that are prohibited by the Forest Stewardship Council, specified on the "Highly Hazardous" list, will not be used unless derogation has been obtained from the FSC.

All applications of chemicals in the forest environment will be undertaken in accordance with Tilhill's AMS and Integrated Pest Management Strategy (IPMS) to reduce risk to



the environment to a minimum, and in accordance with industry best operational practice.

### **Biological controls [3.4.1]**

Biological controls will be considered against specific threats in line with the Tilhill Forestry Integrated Pest Management Strategy.

### Fertilisers [3.4.5]

Given that some soils in Singdean have poor nutrient content, fertilisation of selected areas of the forest will be considered to promote tree establishment in the early years.

### Bio solids [3.4.5 d]

No use of bio solids is anticipated.

### Fencing [3.5.1]

External boundary/march fences will be maintained in cooperation with neighbouring landowners to keep livestock out of the forest.

Deer fencing will be considered to protect more vulnerable species (particularly other conifer species) during establishment if required.

### Waste [3.6.1]

Any waste generated will be disposed of responsibly in line with waste management legislation and regulations. The forest has had no fly tipping incidents recorded.

### **Redundant Materials [3.6.2]**

Redundant materials are either no longer needed (e.g. high seats in locations where deer control is no longer possible/required) or are in a condition that they no longer perform a function (e.g. failed shelters/rabbit fencing).

Description	Location (Compartments)	Location (Coupe)	Quantity (approx.)	Estimated Year for Removal
Tree Shelters & Continental Mesh Guards	Cpts 1 & 2	Coupe 1	6,000	2025-26
Tree Shelters & Continental Mesh Guards	Cpts 9,10,11,12	Coupe 2	4,500	2026-27
Tree Shelters & Continental Mesh Guards	Cpts 22,23,24	Coupe 3	3,000	2027-28
Tree Shelters & Continental Mesh Guards	Cpts 20, 21	Coupe 4	780	2027-28
Tree Shelters & Continental Mesh Guards	Cpt 5	Coupe 5	800	2028-29
Tree Shelters & Continental Mesh Guards	Cpt 6	Coupe 6	1,100	2029-30

This schedule will form the basis of a redundant materials removal plan which will progressively remove/replace redundant materials on a prioritised basis as appropriate.

### **Diffuse pollution [3.7.1]**



For all operations that are deemed to be potentially medium or high risk, hazards and constraints will be identified during planning and communicated to forest workers. There will be clear instruction on how to control and monitor the diffuse pollution risk as well as a higher level of supervision when dealing with higher risk sites, as informed by site monitoring systems in place at Tilhill Forestry.

Operation	Year	Location	Diffuse Pollution Potential Risk	Main Issue(s) Relating to Risk
Road Upgrading	2023- 2024	Cpt 17,18,19	MEDIUM	Reasonably significant road upgrading is required involving widening sections of the haul road and resurfacing.  Steep slopes on the lower side of the forest road with no cross-drains or ground vegetation so potential for water to run unrestricted down plough furrows into the burn.
Clearfell	2023- 2030	Cpt 17,18,19, 13,14,16	HIGH	Steep sites, close proximity to watercourses, potentially only spring/ summer month working. Management of existing drains. Forwarder tracks to be well brashed and monitored for deterioration. Watercourses to be included on operational constraints maps for operators.
Ground preparation – includes ditch & dollop mounding, hinge mounding, brash raking and remedial drainage	2024- 2032	Cpt 17,18,19, 13,14,16	HIGH	Management of existing forest drains. Precautions will be taken when draining, and catch pits used as well as slope of no more than 2 degrees. Preference for machines with wider tracks to minimise ground damage. Consider time of year on steepest and wettest ground. Close proximity to watercourses.

### 4. NATURAL, HISTORICAL AND CULTURAL ENVIRONMENT

Designations [4.1.1 d]

None

Special features [4.1.1 & 4.4.2]

None

**ASNW [4.2.1]** 

None

**PAWS [4.3.1]** 

None



Summary table of biodiversity features

Feature	Area now (Ha)	% of Forest now	Area in 2043 (ha)	% of Forest at 2043	UKWAS Minimum %	Area where biodiversity is primary objective >15% of total
Long Term Retentions	20.45	6.5%	20.45	6.5%	1% of total area	6.5%
Natural Reserves	4.41	1.4%	4.41	1.4%	1% of total area	1.4%
PAWS	-	-		-	-	-
ASNW	-	-		-	-	-
Native broadleaf*	18.3	5.8%	23.22	7.4%	5% of total area*	7.4%
Managed OG <u>or</u> managed for conservation & enhancement of biodiversity as primary objective*	48.25	15.3%	54.43	17.4%	10% of total area*	17.4%
Areas of critical importance for watershed management or erosion control	-	-	-	-	-	-
Other special features	-	-	-	-	-	-

<sup>\*</sup>UKFS Forests & Biodiversity Guideline 10

#### **Open Ground**

Currently there is a total of 48.25 ha of open ground, this will increase to 54.43 ha by the year 2043, constituting 17.4% of the forest. Open ground consists primarily of forest rides, roadside edges, mixed broadleaf/open ground areas and open hill ground to the Southwest of the property on Coomb Edge and Dod Fell which will be linked together by a strip of open ground during the restructuring process.

# Areas and features of critical importance for watershed management or erosion control [4.5.1]

None

### Natural reserves [4.6.1]

Natural reserves within Singdean can be found in compartment 9 which is adjacent to the LTR, this is an area of low stocked native broadleaves planted in 2017.

#### Long-term retentions/LISS area [4.6.2]

The main area of LTR is in compartment 8. This area comprises mainly poor quality Sitka spruce with some Lodgepole pine. Overall growth and quality is poor as the trees are located on blanket bog, but there is conservation and amenity value by retaining this area. Due to its inherent nature and its location on the upper slopes with no road



access the area is proposed for low management intervention; no operations are proposed in the short/medium term.

Two small blocks of mature Sitka spruce in compartment 1 have also been left as LTR, as these provide some height variation from a landscape perspective without restricting the view along the B6357.

### **Veteran Trees [4.6.3]**

None

### **Deadwood** [4.6.4]

It is recognised that deadwood provides an important habitat and that its provision is an important contribution to biodiversity within the forest. Management will allow for the retention and accumulation of deadwood where it does not pose a hazard, either standing, fallen or in habitat piles. Specifically, deadwood will be retained within areas designated as Natural Reserves and Long-Term Retention. Deadwood will be retained on harvested sites where appropriate opportunities to develop valuable habitat arise; this will usually be in wet hollows or other areas of poor harvester access and will include small windblown pockets.

### Archaeology [4.8.1]

There are no known archaeological features within the forest with the exception of several post-medieval sheep stells which are located throughout the woodland; these have been and will continue to be protected during restructuring.

### Game & fisheries management [4.9.1]

None

### 5. PEOPLE, COMMUNITIES AND WORKERS

#### Rights of way & Water supplies [5.1.1]

There are no known public 'Rights of Way' as such through the forest, however, the public are at liberty to walk within the forest and any restrictions imposed would be for health and safety reasons, e.g., during harvesting operations. Public access for quiet informal recreation is accepted but not actively encouraged. With the restructuring of the forest, public access particularly on foot or bicycles may become more frequent.

As part of Tilhill's risk assessment process, the level and nature of public use of the forest will be assessed and considered by the forest manager prior to the start of operational work and, where necessary, controls will be introduced to mitigate any risk to the public.

There are no public or private water supplies within the property.

### **Tree surveys & Timber traffic [5.2.1]**

Regular forest management visits include checks for any dangerous trees or obstructions to the road network. Should any dangerous trees be identified, they will



be removed as soon as possible by competent contractors. The low level of public access means that this is considered a low risk to public safety.

No consultation with Scottish Borders Council is required for timber haulage from the forest as the B6357 is an agreed timber transport route.

### Training and competency [5.5.1]

In line with Tilhill company policy, the following conditions will apply to all contractors working on site:

- All contractors employed in the forest will be competent for the tasks and certificated as competent and trained for equipment used as required. All contractors will have at least one operative on site at all times with valid emergency first aid training.
- Contractors are required to carry out relevant risk assessment for the work they are employed for, undertaking any relevant control measures.
- Contractors are required to complete daily checklists.
- Contractors are required to record all hours on site and report any accident and/or near miss.

### **Insurance** [5.7.1]

The forest is insured against public liability which is organised by the owner's agents Gresham House Forestry. All contractors hold appropriate insurance cover; copies of contractors' insurance documents are retained in the district office.



### 6. APPENDICES

**Appendix 1: Compartment Schedule** 



Compartment	Sub		6	Diamet Wasse	Wald Olars
<b>No</b> 1	Compartment A	<b>Area</b> 7.45	Species SS	2015	Yield Class 18
1	A1	0.56	SS	2015	18
1	A2	0.06	SS	1976	16
1	A3	0.09	SS	1976	16
1	В	2.38	SS	2015	18
1	В	2.38	HL	2015	14
1	M	4.13	MB	2015	4
1	M	4.13	OG		
1	M1	0.2	МВ	2015	4
1	M1	0.2	OG		
1	Z	0.28	OG		
2	Α	21.79	SS	2015	20
2	В	0.66	SS	2015	20
2	В	0.66	HL	2015	14
2	М	3.03	MB	2015	4
2	M	3.03	OG		
2	M1	1.01	MB	2015	4
2	M1	1.01	OG		
2	M2	1.77	MB	2015	4
2	M2	1.77	OG		
2	Z	1.31	OG		
3	Α	1.8	SS	2022	16
3	N	1.78	MB	2022	4
3	N1	0.47	NBL	2022	4
3	N1	0.47	OG		
3	Z	2.1	OG		0
4	Α	15.48	SS	2022	14
4	Q	0.17	QUA		0
4	Z	0.95	OG		0
4	Z1	0.86	OG		0
5	A	19.7	SS	2020	16
5	N	0.38	NBL	2020	4
5	N	0.38	OG		
5	Q	0.46	QUA		
5	Z	1.22	OK		
5	Z1 Z2	0.15	OG		0
6	A	0.35 18.29	OG SS	2021	16
6	A1	3.21	SS	2021	16
6	В	4.04	LP	2021	12
6	N	0.51	NBL	2021	4
6	N	0.51	OG	2021	0
6	Z	1.37	OG		0
6	Z1	0.08	OG		0
7	A	1.79	SS	2021	16
7	В	0.97	MC	2015	16
7	M	0.8	MB	2015	4
7	M	0.8	OG		
7	M1	0.58	NBL	2021	4
7	M1	0.58	OG		0
7	Z	0.27	OG		0
7	Z1	0.25	OG		
7	Z2	0.09	OG		0
8	Α	8.43	SS	1974	12
8	A1	5.29	SS	1974	12
8	E	5.19	SS	1974	10
8	E	5.19	LP	1974	8
8	Z	1.96	OG	0	0
9	В	2.78	SS	2017	16
9	В	2.78	LP	2017	16
9	С	1.54	SS	1974	10
9	M	4.44	MB	2017	6
9	M1	0.8	MB	2017	6
9	M1	0.8	OG		0
9	Z	0.92	OG		0
9	Z1	0.04	OG		0



10	10						
10	10	10	Α	15.75	SS	2017	16
10	10						
10	10					2017	
111	11						
11	11	10	Z	1.41	OG		0
11	11	11	Α	4.83	SS	2017	16
11	11	11	В	1.83	MC	2017	16
11	11						
11	11						
11	11						
11	11					2017	
12	12	11	M	1.73	OG		0
12	12	11	Z	1.12	OG		0
12	12	12	Α	3.91	SS	2017	16
12	12						
12	12						
12	12						
12	12	12	B1	5.03	SS	2017	16
12	12 M1 0.44 M8 2017 6 12 M1 0.44 M8 2017 6 12 M1 0.44 OG 0 12 Z 0.69 OG 0 13 A 10.79 SS 1975 16 13 Q2 0.38 QUA 0 13 Z 0.64 OG 0 13 Z 0.66 OG 0 13 Z 0.66 OG 0 13 Z 0.66 OG 0 14 E 8.25 SS 1975 8 14 E 8.25 SS 1975 8 14 E 8.25 LP 1975 8 14 Z 0.66 OG 0 15 Z 0.6 OG 0 16 A 5.17 SS 1976 16 16 E 3.66 SS 1976 16 16 E 1 1.93 SS 1976 16 17 A 1 3 SS 1976 16 18 E 2 0.05 OG 0 17 A 6.35 SS 1976 18 18 E 0.18 SS 1976 18 19 F 1976 18 19 F 1976 18 10 O O O O O O O O O O O O O O O O O O O	12	B1	5.03	HL	2017	16
12	12 M1 0.44 M8 2017 6 12 M1 0.44 M8 2017 6 12 M1 0.44 OG 0 12 Z 0.69 OG 0 13 A 10.79 SS 1975 16 13 Q2 0.38 QUA 0 13 Z 0.64 OG 0 13 Z 0.66 OG 0 13 Z 0.66 OG 0 13 Z 0.66 OG 0 14 E 8.25 SS 1975 8 14 E 8.25 SS 1975 8 14 E 8.25 LP 1975 8 14 Z 0.66 OG 0 15 Z 0.6 OG 0 16 A 5.17 SS 1976 16 16 E 3.66 SS 1976 16 16 E 1 1.93 SS 1976 16 17 A 1 3 SS 1976 16 18 E 2 0.05 OG 0 17 A 6.35 SS 1976 18 18 E 0.18 SS 1976 18 19 F 1976 18 19 F 1976 18 10 O O O O O O O O O O O O O O O O O O O	12	М	1.11	MB	2017	6
12	12						
12 M1 0.44 OG 0 0 0 1 12 Z 0.69 OG 0 0 0 13 A 10.79 SS 1975 16 13 A 10.79 SS 1975 16 13 A 10.79 SS 1975 16 13 Z 0.64 OG 0 0 0 0 13 Z 1 0.56 OG 0 0 0 0 0 14 E 8.25 SS 1975 8 14 E 8.25 LP 1975 8 14 Z 0.66 OG 0 0 0 0 0 15 Z 0.65 OG 0 0 0 0 0 15 Z 0.65 OG 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12					2017	
12	12					2017	
13	13	12	M1	0.44	OG		0
13	13	12	Z	0.69	OG		0
13	13	13	Α	10.79	SS	1975	16
13	13					1	
13	13						
14         E         8.25         LP         1975         8           14         E         8.25         LP         1975         8           144         Z         0.6         OG         0         0         0           15         Z         6.54         OG         0         0         0           16         A         5.17         SS         1976         16           16         A         5.17         SS         1976         16           16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         3.66         SS         1976         16           16         E         1.93         SS         1976         16           16         E         1.93         LP         1976         8           16         E         1.93         LP         1976         16           16         E         1.90         O         O         O         O         O	14         E         8.25         LP         1975         8           14         E         8.25         LP         1975         8           14         Z         0.6         OG         O						
14         E         8.25         LP         1975         8           14         Z         0.6         OG         0         0         0           15         Z         6.54         OG         0         0         0         0           16         A         5.17         SS         1976         16         16         16         A         5.17         SS         1976         16         16         16         16         A         3.41         SS         1976         16         16         16         A         3.41         SS         1976         16         16         16         E         3.66         SS         1976         16         16         E         1.66         LP         1976         8         16         E         1.66         LP         1976         8         16         E         1.6         E         1.93         LP         1976         16         16         E         1.93         LP         1976         16         16         LP         1.976         16         16         LP         1.976         16         16         Z         5.02         UP         0         0         0         0	14         E         8.25         LP         1975         8           14         Z         0.6         OG         0         0         0           15         Z         6.54         OG         0         0         0         0           16         A         5.17         SS         1976         16         16         16         A         5.17         SS         1976         16         16         A         16         A         1.217         SS         1976         16         16         A         3.41         SS         1976         16         16         A         3.41         SS         1976         16         16         E         3.66         SS         1976         16         16         E         1.66         E         1.12         1976         16         16         E         1.66         LP         1976         8         16         16         E         1.02         1.02         1.02         16         16         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02         1.02						
14	14         Z         0.6         OG         O         O           15         Z         6.54         OG         O         O           16         A         5.17         SS         1976         16           16         A1         2.17         SS         1976         16           16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         16           16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E         1.66         LP         1976         8           16         E         1.93         SS         1976         16           16         E         1.93         LP         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         O         O         O           16         Z         5.02         UP         O         O         O         O	14	Е	8.25	SS	1975	8
14	14         Z         0.6         OG         O         O           15         Z         6.54         OG         O         O           16         A         5.17         SS         1976         16           16         A1         2.17         SS         1976         16           16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         16           16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E         1.66         LP         1976         8           16         E         1.93         SS         1976         16           16         E         1.93         LP         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         O         O         O           16         Z         5.02         UP         O         O         O         O	14	Е	8.25	LP	1975	8
15	15						
16         A         5.17         SS         1976         16           16         A1         2.17         SS         1976         16           16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         1.66         LP         1976         8           16         E         1.93         SS         1976         16           16         E         1.93         LP         1976         8           16         E         1.93         LP         1976         16           16         E         1.93         LP         1976         16           16         W         1.31         SS         1976         16           16         Z         5.02         UP         0         0           16         Z         2.025         OG         0         0           16         Z         2.025         OG         0         0         0           17         A	16						
16         A1         2.17         SS         1976         16           16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         1.93         LP         1976         8           16         E1         1.93         LP         1976         16           16         E1         1.93         LP         1976         16           16         W1         0.67         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z1         0.25         OG         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         3.55 <td>16</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	16						
16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E1         1.93         LP         1976         8           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11 <td>16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W1         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3<td></td><td></td><td></td><td></td><td></td><td></td></td>	16         A2         2         SS         1976         16           16         A3         3.41         SS         1976         18           16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W1         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       8         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0       0         16       Z       5.02       UP       0       0       0         16       Z       5.02       UP       0       0       0         16       Z       1.025       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.31       SS       1976       18         17       Z       1.47       OG       0       0       0 <t< td=""><td>16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       18         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0       0         16       Z2       0.05       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.14       SS       1976       18         17       Z       1.47</td><td>16</td><td>A1</td><td>2.17</td><td>SS</td><td>1976</td><td>16</td></t<>	16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       18         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0       0         16       Z2       0.05       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.14       SS       1976       18         17       Z       1.47	16	A1	2.17	SS	1976	16
16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       8         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0       0         16       Z       5.02       UP       0       0       0         16       Z       5.02       UP       0       0       0         16       Z       1.025       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.31       SS       1976       18         17       Z       1.47       OG       0       0       0 <t< td=""><td>16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       18         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0       0         16       Z2       0.05       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.14       SS       1976       18         17       Z       1.47</td><td>16</td><td>A2</td><td>2</td><td>SS</td><td>1976</td><td>16</td></t<>	16       A3       3.41       SS       1976       18         16       E       3.66       SS       1976       16         16       E       3.66       LP       1976       18         16       E1       1.93       SS       1976       16         16       E1       1.93       LP       1976       8         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       W       1.31       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0       0         16       Z2       0.05       OG       0       0       0         17       A       6.35       SS       1976       18         17       A       1.14       SS       1976       18         17       Z       1.47	16	A2	2	SS	1976	16
16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E1         1.93         LP         1976         8           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         18           17         A         1.41         SS         1976         18           17         A         1.49	16         E         3.66         SS         1976         16           16         E         3.66         LP         1976         8           16         E1         1.93         LP         1976         8           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         O         O         O           16         Z1         0.25         OG         O         O         O         O           16         Z2         0.05         OG         O         D         D         D         D						
16         E         3.66         LP         1976         8           16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         18           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         LP         1976         12           18         E1         0.78	16         E         3.66         LP         1976         8           16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0         0           18         E         0.18         SS         1977         16         18         1977         16						
16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         Z         1.47         OG         0         0           18         E         0.18         LP         1976         18           18         E         0.18	16         E1         1.93         SS         1976         16           16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z1         0.25         OG         O         O         O           16         Z2         0.05         OG         O         O         O         O           16         Z2         0.05         OG         O						
16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         18           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         E         0.18         SS         1976         18           17         Z         1.47         OG         0         0         0           18         E         0.18         LP         1977         16         18         19         1977	16         E1         1.93         LP         1976         8           16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0         0           16         Z2         0.05         OG         0         0         0         0           16         Z2         0.05         OG         0         0         0         0           16         Z2         0.05         OG         0         0         0         0         0         18         1976         18         18         11         18         1976         18         11         17         A         14         14         17         A         14         18         18         18         18         18         1977         16         18         18         1976         12	16		3.66	LP	1976	8
16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0         0           18         E         0.18         SS         1976         16         18         1977         16         18         1976         16         18         1977         16         18         1977         16         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         19         1976         18         1976         18	16       W       1.31       SS       1976       16         16       W1       0.67       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0         17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       0       0       0         18       E       0.18       SS       1976       16       18       18       E       0.18       LP       1976       8       18       18       E       0.18       LP       1976       8       18       12       18       1976       12       18       12       18       12       18       12       19       12       18       12       19       12       19       12       19 </td <td>16</td> <td>E1</td> <td>1.93</td> <td>SS</td> <td>1976</td> <td>16</td>	16	E1	1.93	SS	1976	16
16         W         1.31         SS         1976         16           16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         E         0.18         SS         1976         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.08         LP         1976         8           19         E         0.92	16       W       1.31       SS       1976       16         16       W1       0.67       SS       1976       16         16       Z       5.02       UP       0       0         16       Z1       0.25       OG       0       0         16       Z2       0.05       OG       0       0         16       Z2       0.05       OG       0       0         17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       0       0       0         18       E       0.18       SS       1976       16       18       18       E       0.18       LP       1976       8       18       18       E       0.18       LP       1976       8       18       12       18       1976       12       18       12       18       12       18       12       19       12       18       12       19       12       19       12       19 </td <td>16</td> <td>E1</td> <td>1.93</td> <td>LP</td> <td>1976</td> <td>8</td>	16	E1	1.93	LP	1976	8
16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0         0           18         E         0.18         LP         1976         16         18         E         0.18         LP         1976         16         18         E         0.18         LP         1976         8         18         E         10.18         LP         1976         8         18         E         10.18         LP         1976         8         1977         16         19         19         E         0.92         SS <td>16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         0.18         LP         1976         8           18         E         1.078         SS         1977         16           18         E         1.078         LP         1976         8           19         A         13.14</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	16         W1         0.67         SS         1976         16           16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         0.18         LP         1976         8           18         E         1.078         SS         1977         16           18         E         1.078         LP         1976         8           19         A         13.14						
16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         E         0.92         SS         1977         12           19         E         0.92	16         Z         5.02         UP         0         0           16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.11         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.078         SS         1976         12           18         E         1         0.78         LP         1976         8           19         E						
16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0         0           18         A         4.97         SS         1977         16         18         1977         16         18         1977         16         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         18         1976         12         18         1976         12         18         1976         12         18         1977         14         19         2         0.69         0         0         0         0 <td>16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.01         NB         LP         1976         8           18         E         1.078         SS         1976         12         18         1976         12         12         18         1976         12         12         19         12         12         19         12         19         12         19         12         19         12         12         19         12         19         12</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	16         Z1         0.25         OG         0         0           16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.01         NB         LP         1976         8           18         E         1.078         SS         1976         12         18         1976         12         12         18         1976         12         12         19         12         12         19         12         19         12         19         12         19         12         12         19         12         19         12						
16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         10.78         SS         1976         12           18         E         1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E	16         Z2         0.05         OG         0         0           17         A         6.35         SS         1976         18           17         A1         3         SS         1976         14           17         A2         1.11         SS         1976         18           17         Z         1.47         OG         0         0           18         A         4.97         SS         1977         16           18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E         1.078         SS         1976         12           18         E         1.078         SS         1977         16           19         A         13.14         SS         1977         12           19         E         0.92<						
17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       14         19       Z       0.69       OG       O       O         20       B       3.14       DF       2020<	17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       0       0         18       A       4.97       SS       1977       16         18       E       0.18       LP       1976       8         18       E       1.078       SS       1976       12         18       E       1.078       LP       1976       8         19       E       0.92       SS       1977       16         19       E       0.92       SS       1977       14         19       E       0.92       GF       1977       14         19       Z       0.69       OG       0	16	Z1	0.25	OG	0	0
17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       14         19       Z       0.69       OG       O       O         20       B       3.14       DF       2020<	17       A       6.35       SS       1976       18         17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       0       0         18       A       4.97       SS       1977       16         18       E       0.18       LP       1976       8         18       E       1.078       SS       1976       12         18       E       1.078       LP       1976       8         19       E       0.92       SS       1977       16         19       E       0.92       SS       1977       14         19       E       0.92       GF       1977       14         19       Z       0.69       OG       0	16	Z2	0.05	OG	0	0
17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         18       E1       O.78       LP       1976       8         18       E1       O.78       LP       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       16         19       E       O.92       GF       1977       14         19       Z       O.69       OG       O       O         19       Z1       O.08       OG       O       O         20       B       3.14       DF       2020       18         20       M       O.38       NBL       2020       4         20       M       O.38       NBL       202	17       A1       3       SS       1976       14         17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       0.18       SS       1976       16         18       E       0.18       LP       1976       8         18       E1       0.78       SS       1976       12         18       E1       0.78       SS       1976       12         18       E1       0.78       SS       1976       12         18       E1       0.78       LP       1976       8         19       A       13.14       SS       1977       16         19       E       0.92       SS       1977       12         19       E       0.92       GF       1977       14         19       Z       0.69       OG       O       O         20       B       3.14       DF       2020       18         20       M       0.38       NBL       <						
17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         18       E1       O.78       SS       1976       12         18       E1       O.78       SS       1976       12         18       E1       O.78       SS       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       12         19       E       O.92       GF       1977       14         19       Z       O.69       OG       O       O         19       Z1       O.08       OG       O       O         20       B       3.14       DF       2020       18         20       M       O.38       NBL       2020       4         20       M       O.38       OG	17       A2       1.11       SS       1976       18         17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         18       E1       O.78       SS       1976       12         18       E1       O.78       SS       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       GF       1977       14         19       E       O.92       GF       1977       14         19       Z1       O.69       OG       O       O         20       B       3.14       DF       2020       1         20       M       0.38       NBL						
17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         18       E1       O.78       SS       1976       12         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       12         19       E       O.92       GF       1977       14         19       Z       O.69       OG       O       O         19       Z       O.69       OG       O       O       O         20       B       3.14       DF       2020       18         20       M       O.38       NBL       2020       4         20       M       O.38       N	17       Z       1.47       OG       O       O         18       A       4.97       SS       1977       16         18       E       O.18       SS       1976       16         18       E       O.18       LP       1976       8         18       E1       O.78       SS       1976       12         18       E1       O.78       LP       1976       8         19       A       13.14       SS       1977       16         19       E       O.92       SS       1977       16         19       E       O.92       GF       1977       14         19       Z       O.69       OG						
18       A       4.97       SS       1977       16         18       E       0.18       SS       1976       16         18       E       0.18       LP       1976       8         18       E1       0.78       SS       1976       12         18       E1       0.78       LP       1976       8         19       A       13.14       SS       1977       16         19       E       0.92       SS       1977       12         19       E       0.92       GF       1977       14         19       Z       0.69       OG       0       0         19       Z1       0.08       OG       0       0         20       B       3.14       DF       2020       18         20       M       0.38       NBL       2020       18         20       M       0.38       NBL       2020       4         21       B       4.14       DF       2020       18         21       M       1.01       NBL       2020       4         21       M       1.01       NBL	18       A       4.97       SS       1977       16         18       E       0.18       SS       1976       16         18       E       0.18       LP       1976       8         18       E1       0.78       SS       1976       12         18       E1       0.78       LP       1976       8         19       A       13.14       SS       1977       16         19       E       0.92       SS       1977       12         19       E       0.92       GF       1977       14         19       Z       0.69       OG       0       0         19       Z1       0.08       OG       0       0         20       B       3.14       DF       2020       18         20       M       0.38       NBL       2020       4         21       B       4.14       DF <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         M         1.	18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         GF         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         B         4.14         DF         2020         18           21         M         1.	17	Z	1.47	OG	0	0
18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         M         1.	18         E         0.18         SS         1976         16           18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         GF         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         B         4.14         DF         2020         18           21         M         1.	18	Α	4.97	SS	1977	16
18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL	18         E         0.18         LP         1976         8           18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         M         1.						
18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL	18         E1         0.78         SS         1976         12           18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1						
18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         O           20         Z         0.3         OG         O         O           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         Z         0.77	18         E1         0.78         LP         1976         8           19         A         13.14         SS         1977         16           19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0         0           20         Z         0.3         OG         0         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01						
19       A       13.14       SS       1977       16         19       E       0.92       SS       1977       12         19       E       0.92       GF       1977       14         19       Z       0.69       OG       O       O         19       Z1       0.08       OG       O       O         20       B       3.14       DF       2020       18         20       M       0.38       NBL       2020       4         20       M       0.38       OG       O       O         20       Z       0.3       OG       O       O       O         20       M       0.38       NBL       2020       4       O       A       O	19       A       13.14       SS       1977       16         19       E       0.92       SS       1977       12         19       E       0.92       GF       1977       14         19       Z       0.69       OG       O       O         19       Z1       0.08       OG       O       O         20       B       3.14       DF       2020       18         20       M       0.38       NBL       2020       4         20       M       0.38       OG       O       O         20       Z       0.3       OG       O       O       O         20       Z       0.3       OG       O						
19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         D         D         O         O         D         D         O         O         D         D         O         O         D         D         D         D         D         D         D         D         D         D         D	19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         D	18	E1	0.78	LP	1976	8
19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         D         D         O         O         D         D         O         O         D         D         O         O         D         D         D         D         D         D         D         D         D         D         D	19         E         0.92         SS         1977         12           19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         D	19	Α	13.14	SS	1977	16
19         E         0.92         GF         1977         14           19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         O           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         NBL         2020         4           21         M         1.01         OG         O         O           21         Z         0.77         OG         O	19         E         0.92         GF         1977         14           19         Z         0.69         OG         0         0           19         Z1         0.08         OG         0         0           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0         0           20         Z         0.3         OG         0         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         NBL         2020         4           21         Z         0.77         OG         0         0           21         Z         0.77         OG         0         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           22         N         1.21 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         O         O         O         O         O         O         O         O         D	19         Z         0.69         OG         O         O           19         Z1         0.08         OG         O         O           20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         O         O           20         Z         0.3         OG         O         O         O         O         O         O         O         O         O         D						
19     Z1     0.08     OG     0     0       20     B     3.14     DF     2020     18       20     M     0.38     NBL     2020     4       20     M     0.38     OG     0       20     Z     0.3     OG     0       20     Z     0.3     OG     0       21     B     4.14     DF     2020     18       21     M     1.01     NBL     2020     4       21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG     0       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG     0       23     Z     0.73     OG     0       24     A     8.03     SS     2019     20       24     N     2.76	19     Z1     0.08     OG     0     0       20     B     3.14     DF     2020     18       20     M     0.38     NBL     2020     4       20     M     0.38     OG     0       20     Z     0.3     OG     0       21     B     4.14     DF     2020     18       21     M     1.01     NBL     2020     4       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       24     A     8.03     SS						
20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         Z         0.77         OG         0         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           23         A         3.46         SS         2019         20           23         N         1.6         MB         2019 <td>20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0         0           21         Z         0.77         OG         0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	20         B         3.14         DF         2020         18           20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0         0           21         Z         0.77         OG         0						
20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         Z         0.77         OG         0         0           21         Z         0.77         OG         0	20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0         0           21         Z         0.77         OG         0	19	Z1		OG	0	0
20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         Z         0.77         OG         0         0           21         Z         0.77         OG         0	20         M         0.38         NBL         2020         4           20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0         0           21         Z         0.77         OG         0	20	В	3.14	DF	2020	18
20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0           21         Z         0.77         OG         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           22         N         1.21         OG         0	20         M         0.38         OG         0           20         Z         0.3         OG         0           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0           21         Z         0.77         OG         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           22         N         1.21         OG         0						
20         Z         0.3         OG           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0           21         Z         0.77         OG         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           22         N         1.21         OG         0	20         Z         0.3         OG           21         B         4.14         DF         2020         18           21         M         1.01         NBL         2020         4           21         M         1.01         OG         0           21         Z         0.77         OG         0           22         A         3.55         SS         2019         20           22         N         1.21         MB         2019         4           22         N         1.21         OG         0						
21     B     4.14     DF     2020     18       21     M     1.01     NBL     2020     4       21     M     1.01     OG     0       21     Z     0.77     OG     0       21     Z     0.77     OG     20       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	21     B     4.14     DF     2020     18       21     M     1.01     NBL     2020     4       21     M     1.01     OG     0       21     Z     0.77     OG       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG       22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     OG       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG						U
21     M     1.01     NBL     2020     4       21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	21     M     1.01     NBL     2020     4       21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG						
21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG	21	В	4.14	DF	2020	18
21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	21     M     1.01     OG     0       21     Z     0.77     OG     0       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     Z     0.91     OG     0       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG	21	M	1.01	NBL	2020	4
21     Z     0.77     OG       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG     20       22     Z     0.91     OG     20       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	21     Z     0.77     OG       22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG     20       22     Z     0.91     OG     20       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG						0
22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG     20       22     Z     0.91     OG     20       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	22     A     3.55     SS     2019     20       22     N     1.21     MB     2019     4       22     N     1.21     OG     20       22     Z     0.91     OG     20       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG						-
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22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG	22			MB	2019	4
22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4	22     Z     0.91     OG       23     A     3.46     SS     2019     20       23     N     1.6     MB     2019     4       23     N     1.6     OG       23     Z     0.73     OG       24     A     8.03     SS     2019     20       24     N     2.76     MB     2019     4       24     N     2.76     OG	22	N	1.21	OG		
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### Appendix 2: Work Plans (20 year outline, 5 year detail)

### **20 Year Work Programme**

Outline long-term work programme (2024 to 2043)

Commont	Activity	Year						
Compartment	Activity	6-10	11-15	16-20				
13,14,16 (pt)	Beating up	X						
13,14,16 (pt)	Weeding	X						
16 (pt), 17,18,19	Beating up	X						
16 (pt), 17,18,19	Weeding	X						

### **5 Year Work Programme**

Short-term work programme (2024 to 2028)

			Year						
Compartment	Activity	1	1 2 3						
6,20,21,22,23,24,	Beating up	X	X						
1,4	Beating up		X	X					
1,4,20,21,22,23,24	Weeding		X	X					
Remaining road	Road upgrades		X						
16 (pt), 17, 18, 19	Felling		X						
16 (pt), 17, 18, 19	Ground preparation			X					
16 (pt), 17, 18, 19	Restock planting				Х				
16 (pt), 17, 18, 19	Beating up					X			
16 (pt), 17, 18, 19	Weeding					X			

### Appendix 3: Production Forecast (10 year) & Felling Phase/Restocking table

		Coupe D	ata						Sec. 5					-				
	Period 1		Period 2			Stand data						Restructuring areas by successor crop types (hectares)						
Coupe Reference	Fell/Thin Period	Intervention Type	Fell/Thin Period	Intervention Type	Planned Felling Year	Species		General Yield Class	WHC	Previously Thinned			Other Conifer	Mixed Broadleaves	Native Broadleaves	Caledonian Scots Pine	Natural Regeneration	Other Land
Coupe 9	Phase 1	Fell			2025	SS	1977	16	3	n	36.69	25.67	4.83	3.93				
Coupe 8	Phase 2	Fell			2029	SS	1975	16	4	n	31.94	19.01	8.59	1.07				

SCALE O	SCALE OF PROPOSED FELLING AREAS (including LISS final fell areas)												
Total	Total Forest Plan Area: 313.48 hectares												
Felling	Phase 1	%	Phase	2	%	Phase 3	%	Phase 4	%	Long Term Retention	%	Area out- with 20yr plan period	%
Area (Ha)	36.69	11.79	31	.94	10.19	0	0	0	0	20.45	6.52	224.40	71.50



Felling Phase	Map Identifier(s)	Species to be planted	Area (ha) to be planted
1 (Coupe 9)	See map legend	Sitka spruce	25.67
1 (Coupe 9)	See map legend	Scots pine	3.36
1 (Coupe 9)	See map legend	Mixed conifer	1.47
1 (Coupe 9)	See map legend	Mixed broadleaves	3.93
1 (Coupe 9)	See map legend	Open ground	2.26
2 (Coupe 8)	See map legend	Sitka spruce	19.01
2 (Coupe 8)	See map legend	Lodgepole pine	8.59
2 (Coupe 8)	See map legend	Mixed broadleaves	1.07
2 (Coupe 8)	See map legend	Open ground	3.27
		Total Restocking Area	68.6

### Appendix 4: Surveys, Citations, Reports

The scoping report below was approved by Scottish Forestry on 5<sup>th</sup> October 2023.

### **Scoping Report**

Part 1 – General Details	
Property Name:	Singdean Forest
FGS number:	99FGS34018
Forest Plan area:	313.48 hectares
Type of scoping:	Emails

#### Assessment of local impacts and key issues

Singdean Forest is located approximately 16 miles southeast of Hawick in the Scottish Borders. The forest was planted in the 1970's, covering an area of 313.48 hectares (ha) and has reached maturity. Felling operations have been carried out over the past 9 years in a phased manner with the aim of restructuring the forest to create more diversity.

The attached Concept Map outlines the key constraints and opportunities at Singdean Forest, and the impacts they have on the local environment and landscape.

In general terms Singdean forest is not considered ecologically sensitive and timber production is the key objective.

The forest is typical of the upland forests in Southeast Scotland with a predominance of non-native conifers. Where suitable, opportunities will continue be taken to improve internal and external landscape aesthetics. The intention is to incorporate Singdean forest into the surrounding landscape (where possible) by softening any straight edges in the restructuring design, improving tree species layout in the planting design, leaving areas of long-term retention, and by integrating the forested area into designed open ground.

Scoping was carried out for the property engaging with statutory bodies and neighbours about concerns they might have with the property at present or in the



future. During the scoping process no key issues or concerns were raised from the responses that were received. General comments were made with regards to archaeology, wildlife and landscape when operations are taking place.

Responses to the scoping process and action needed can be found in the key issues section of this report.

### Stakeholders

A copy of the pre-scoping map and a summary of the woodland were sent to the following stakeholders.

Name	Organisation	Address	Response received	
K Elliot	Scottish Borders	Scottish Borders Council	Yes	
	Council- Cultural	Headquarters, Newtown St		
	Heritage	Boswells, Melrose TD6 0SA		
	Scottish Borders	Scottish Borders Council	No	
	Council-	Headquarters, Newtown St		
	Biodiversity	Boswells, Melrose TD6 0SA		
	Scottish Borders	Scottish Borders Council	No	
	Council- Landscape	Headquarters, Newtown St		
		Boswells, Melrose TD6 0SA		
	Scottish Borders	Scottish Borders Council	No	
	Council- Planning	Headquarters, Newtown St		
	Officer	Boswells, Melrose TD6 0SA		
	Scottish Borders	Scottish Borders Council	No	
	Council- Senior	Headquarters, Newtown St		
	Ranger	Boswells, Melrose TD6 0SA		
B Young	Scottish Borders	Scottish Borders Council	No	
_	Council- Roads	Headquarters, Newtown St		
	Planning	Boswells, Melrose TD6 0SA		
	Scottish Borders	Scottish Borders Council	No	
	Council- Flood	Headquarters, Newtown St		
	Management	Boswells, Melrose TD6 0SA		
J England	South Scotland	james.england@dumgal.gov.uk	No	
	Timber Transport			
	Scottish Borders	Scottish Borders Council	No	
	Council- Forestry	Headquarters, Newtown St		
	Consultation	Boswells, Melrose TD6 0SA		
A Brown	Nature Scot	Anne.Brown@nature.scot	Yes	
K Grimsditch	SEPA	Kate.grimsditch@sepa.org.uk	No	
J Gallagher	RSPB	Julia.Gallagher@rspb.org.uk	No	
D Cameron	HES	Deirdre.Cameron@hes.scot	Yes	
M Stamp	Scottish Wildlife Trust	swtborders@gmail.com	No	
A Heavisides	Scottish Raptor	scottishraptorsq@gmail.com	No	
	Study Group			
Dr. G Kolbe	Upper Liddlesdale	ulhcommunitycouncil@gmail.com	Yes	
	& Hermitage CC			





S McKillop	Saving Scotlands	smckillop@scottishwildlifetrust.or	No
	Red Squirrels	<u>g.uk</u>	
	Forestry & Land	enquiries.south@forestryandland.	
	Scotland	gov.scot	
G Dearden	Tilhill Forestry Ltd	garth.dearden@tilhill.com	No
Christa & Del	Resident	Singdean Cottage, Newcastleton,	No
Dobson		Scottish Borders, TD9 0SP	
A Douglas	Resident	Saughtree Farm, Newcastleton,	No
		Scottish Borders, TD9 0SW	

Organization/Person	Response & date
Keith Elliot (SBC Archaeology)	Date received: 24/05/2023
Reful Linet (SBC Archideology)	Thank you for sending this on for Scottish Borders Council Archaeology Service comment. From what has been sent on I think it unlikely that I would have any comments to make for this Long Term Forest Plan work in particular, the only comment I would make is that there online greater availability than there once was for the likes of old Ordnance Survey map editions which would the locations of the old sheepfolds and stells to be all the more readily identified for their sites. Please let me know if you have any further archaeological and historic questions and/or comments.
Anne Brown (NatureScot)	Date received: 30/05/2023
	Thank you for consulting us on your proposal. We do not intend to offer formal comment on this proposal as it does not affect any of the designated sites for which we are responsible. We do not provide comment on forest management in relation to assessment against the UK Forestry Standard (UKFS).
Deirdre Cameron (HES)	Date received: 25/05/2023
	Thank you for your consultation. We have considered your consultation and comment as follows: Historic Environment Scotland is the lead public body established to investigate, care for and promote Scotland's historic environment. Our comments here concentrate on our statutory remit for world heritage sites, scheduled monuments and their setting, category A-listed buildings and their settings, and historic battlefields and gardens and designed landscapes appearing in their respective Inventories.  We note that there are no scheduled monuments, category A-listed buildings or Inventory gardens and designed landscapes within the boundary of the <b>Singdean LTFP</b> and therefore we have no locus regarding this consultation.  You may also wish to seek information and advice on matters including impacts on unscheduled



	archaeology and category B and C listed buildings from your local authority's archaeology and conservation services if you have not already done so.  If we can be of further assistance please do not hesitate to contact us.
Dr. Geoffrey Kolbe Upper Liddlesdale & Hermitage Community Council)	Date received: 26/05/2023  Thanks for this We (Upper Liddesdale & Hermitage Community Council) have a meeting on 13th of July and we would be grateful if the response deadline was shifted to 31st July so that this may be discussed at our meeting? Would it be possible for a representative of Tilhill to come and give a presentation of your Scoping plan to the meeting? Thanks very much.

### **Appendix 5: UKWAS Declaration of Commitment**

Signed copy held in the Singdean Forest UKWAS folder.

### **Appendix 6: Central Borders Fire Plan**

A fire plan for Singdean Forest is held electronically in the property folder.



### **Appendix 7: Tolerance Table**

	Map Required (Y/N)	Adjustment to felling period*	Adjustment to felling coupe boundaries**	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ***	Windblow Clearance ****
FC Approval normally not required	N	Fell date can be moved within 5-year period where separation or other constraints are met	Up to 10% of coupe area	Up to 2 planting seasons after felling	Change within species group e.g. evergreen conifers or broadleaves		Increase by up to 5% of coupe area	
Approval by exchange of email and map	Y		Up to 15% of coupe area	Between 2 and 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised		Additional felling of trees not agreed in plan  Departures of more than 60m in either direction from centre line of road	Increase by up to 10%  Any reduction in open ground within coupe area	Up to 5 ha
Approval by formal plan amendment may be required	Y	Felling delayed into second or later 5 year period  Advance felling into current or 2 <sup>nd</sup> 5 year period	More than 15% of coupe area	More than 5 planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised	Change from specified native species Change between species group	As above, depending on sensitivity	More than 10% of coupe area  Colonisation of open areas agreed as critical	More than 5 ha

#### Note

<sup>\*</sup>Felling sequence must not compromise UKFS in particular felling coupe adjacency. Felling progress and impact will be reviewed against UKWAS at 5 year review.

<sup>\*\*</sup> No more than 1 ha, without consultation with Scottish Forestry, where the location is defined as 'sensitive' within the Forestry (Environment Impact Assessment) (Scotland) Regulations 2017.

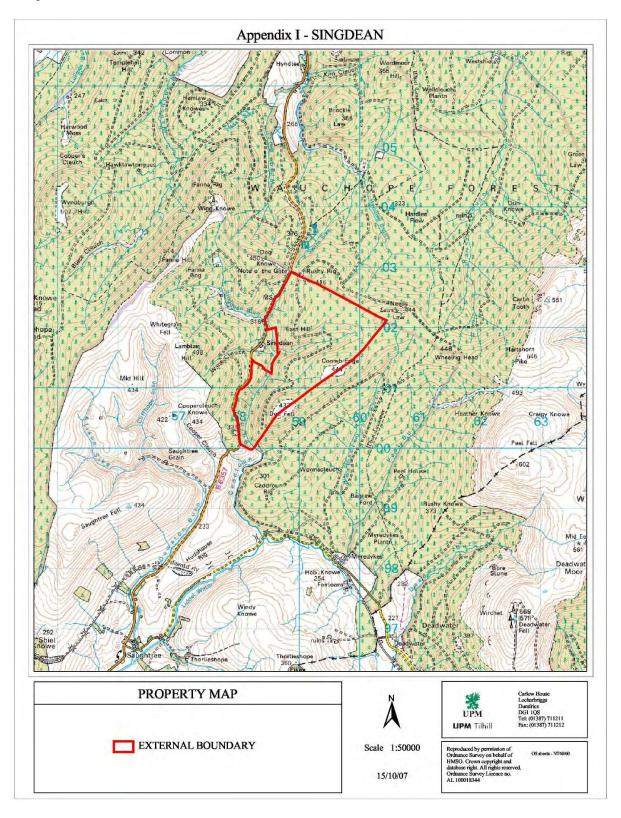
<sup>\*\*\*</sup> Tolerance subject to an overriding maximum of 20% designed open ground.

<sup>\*\*\*\*</sup> Where windblow occurs, Scottish Forestry must be informed of extent prior to clearance and consulted on clearance of any standing trees.



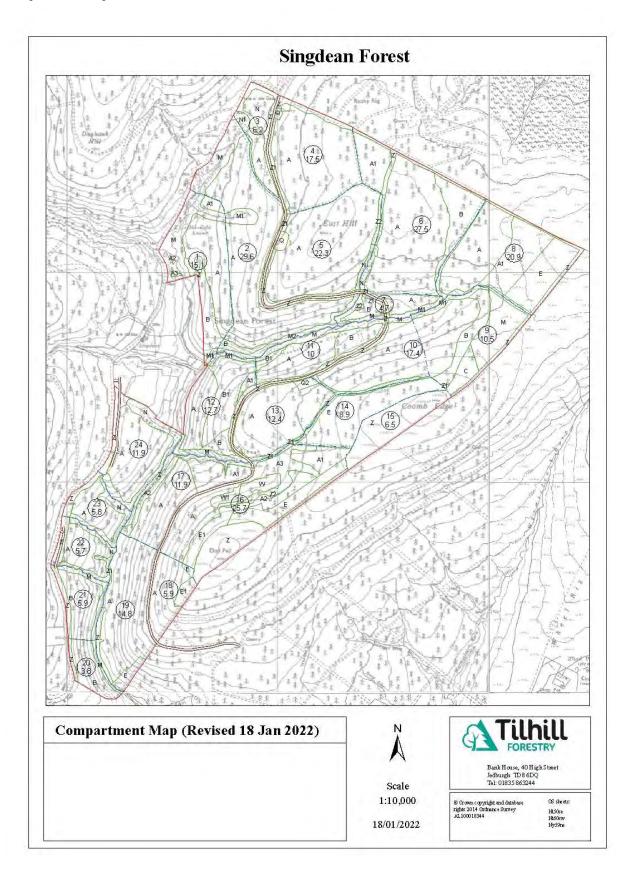
### Appendix 8: Maps

### Map 1: Location



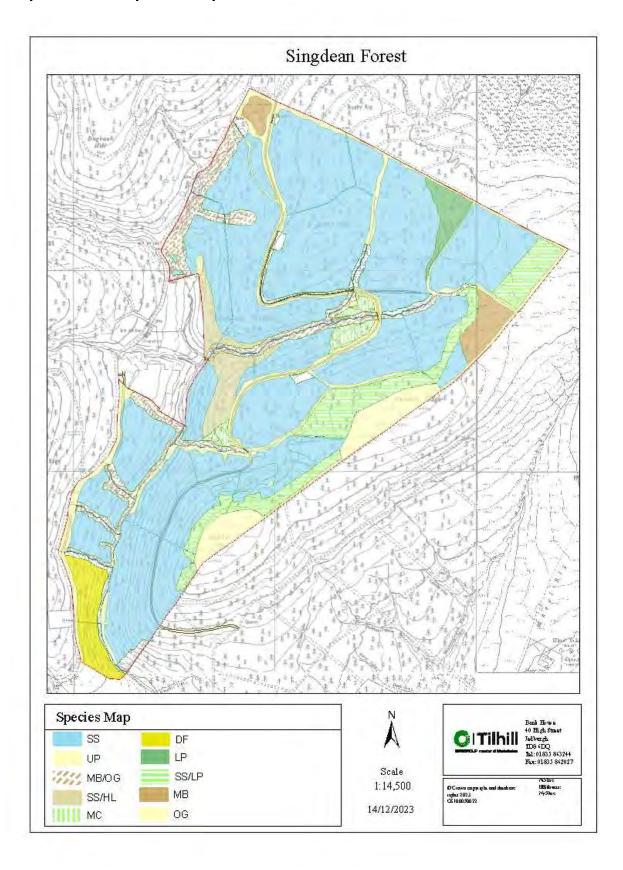


**Map 2: Compartments** 



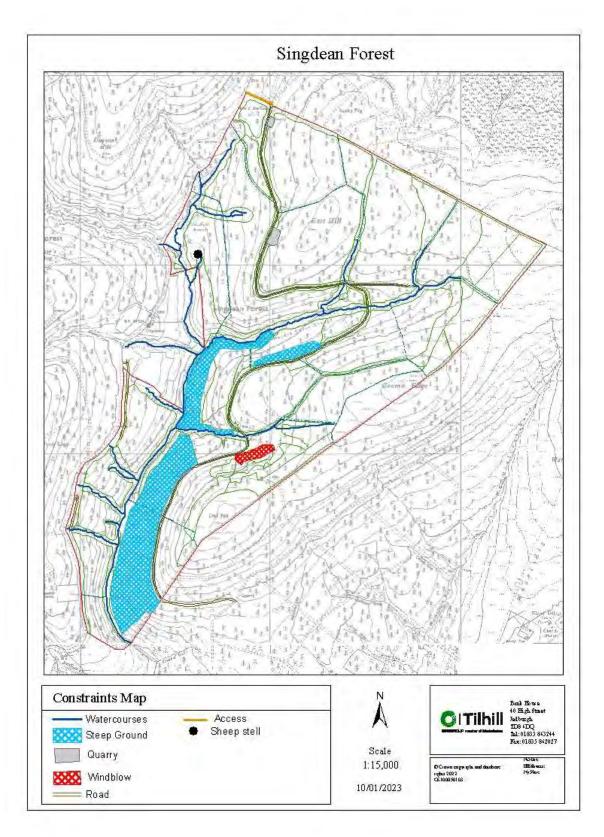


Map 3: Current Species Map



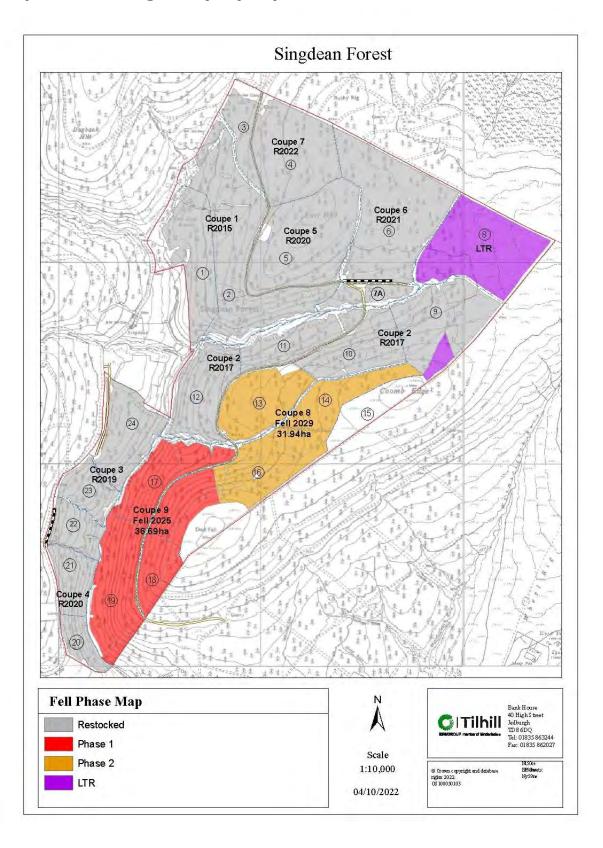


Map 4: Hazards and Sensitivities



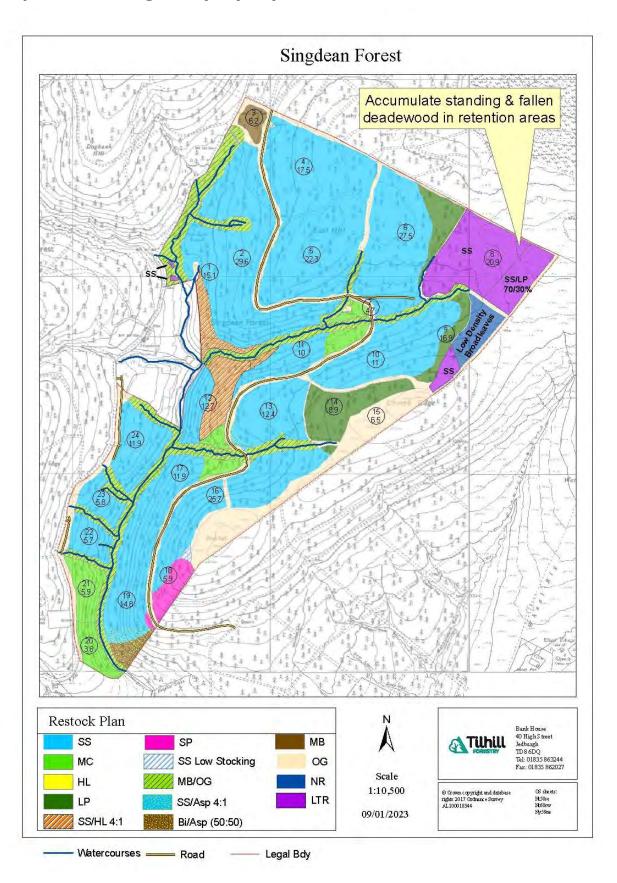


Map 5: Harvesting Plan (20 year)



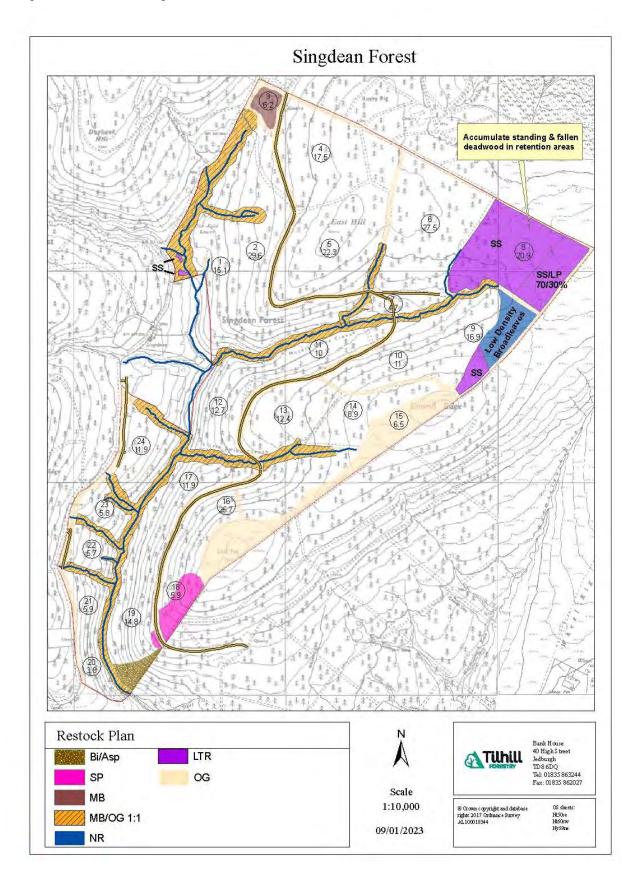


### Map 6: Restocking Plan (20 year)





Map 7: Biodiversity





Map 8: Neighbours

