



Forestry and
Land Scotland
Coilltearachd agus
Fearann Alba

Dallas

Land Management Plan

2023-2042

Includes the Kellas Oakwood SSSI plan

This plan sets out the strategic direction for management over the next 20 years and provides details of the operations proposed in the first 10 years.



We manage Scotland's National Forest Estate to the United Kingdom Woodland Assurance Standard – the standard endorsed in the UK by the International Forest Stewardship Council® and the Programme for the Endorsement of Forest Certification. We are independently audited.

Our land management plans bring together key information, enable us to evaluate options and plan responsibly for the future. We welcome comments on these plans at any time.



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1. Introduction and Summary

1.1 Location

The Dallas Land Management Plan (LMP) comprises of four forestry blocks, the Hill of the Wangie, Gallow Hill, Hillockhead and Mill Buie, covering 577 hectares (ha) Figure 1.

The adjacent village, Dallas is less than 2 km from the main entrance of the Hill of the Wangie, a popular location for downhill mountain biking. Forres, the nearest town, is approximately 10 kilometres (km) north-west of Dallas.

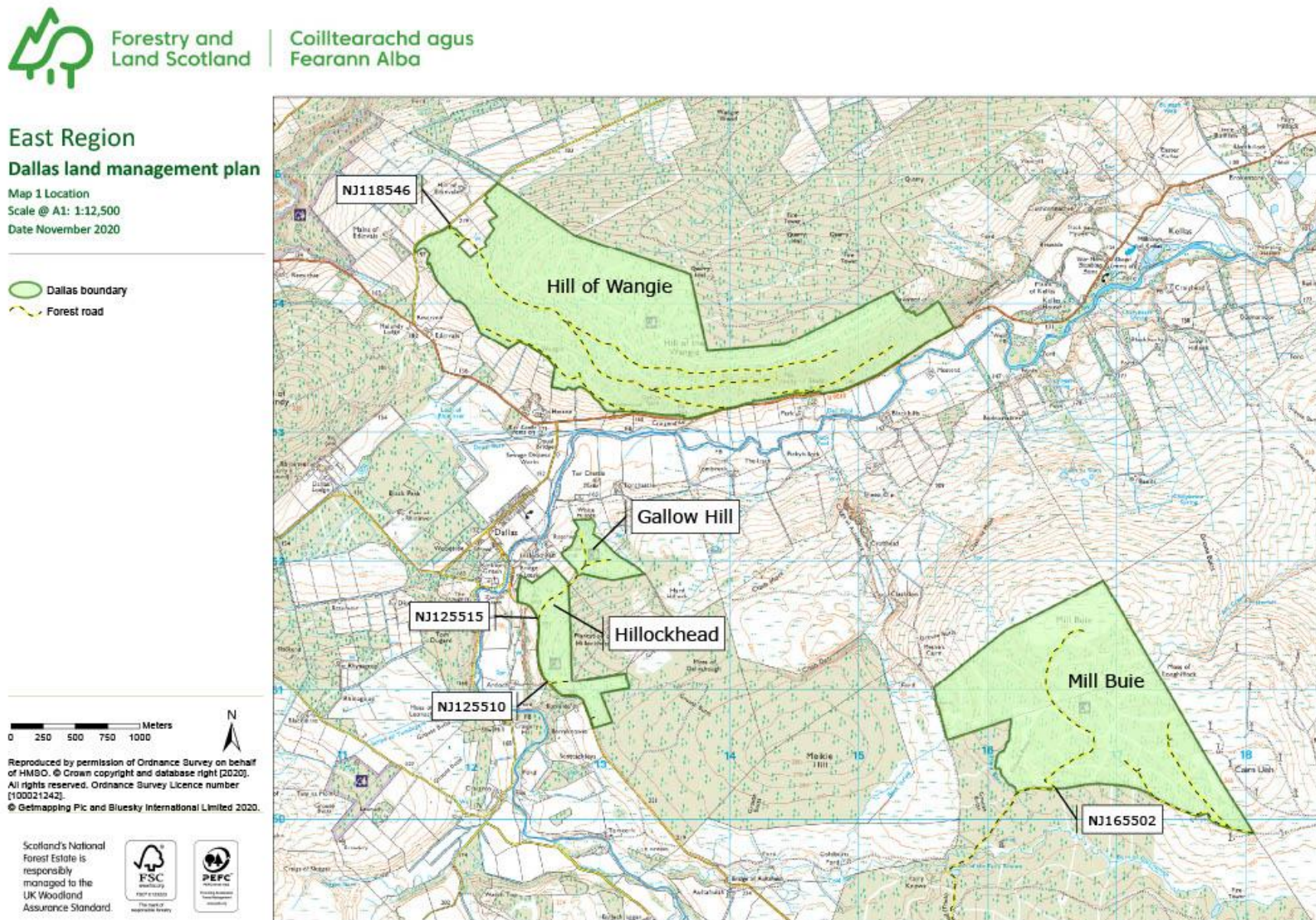


Figure 1: Dallas forest block locations.

1.2 Certification

The management of the woodland is certified and at all times adhere to the UK Forestry Standard (UKFS) and the UK Woodland Assurance Standard (UKWAS).

1.3 Key challenges

- General:
 - Maintaining a productive forest whilst balancing the interests of recreation and habitat enhancement/restoration.
 - Protecting the watercourses that originate from within/run through the Dallas LMP area, and are minor tributaries to the River Lossie.
- Hill of the Wangie:
 - 18% is on steep, linear slopes making forest operations difficult and more costly, this includes restock, felling and deer management.
 - Proactive communication between Forestry and Land Scotland (FLS) and the downhill mountain biking community is needed to reduce the potential for conflict.
 - The eastern slopes, include Kellas Oak Woodland, a Special Site of Scientific Interest (SSSI) and Plantation on Ancient Woodland Site (PAWS), in a currently 'unfavourable' condition.
- Hillockhead:
 - A PAWS site managed under Low Impact Silviculture System (LISS).

- Mill Buie forest block:
 - Areas of priority habitat, Upland Heath and Blanket Bog, that require restoration.

1.4 Proposal in brief

- Fell 69.6 ha of woodland (12%).
- Thin 128 ha of woodland (22%).
- Restock 33.4 ha of woodland (6%).
- Restore 54.4 ha of deep peat (9%).
- Manage 168.7 ha of upland heath (29%).
- Maintenance of 2.8 km of roads.

1.5 Timing and Permissions

This plan presents in detail the management, felling, thinning and restocking proposals for the next 10 years (2023-2032). This first 10 year period is particularly important because it relates to the part of the land management plan that requires specific approval from Scottish Forestry (SF). Longer term management of Dallas is included in the plan but mainly to provide an indication of the direction of travel and to provide context.

This plan includes the plan for the section of the Kellas Oakwood SSSI managed by FLS (Appendix D). There are no other permissions or consents currently associated with this area.

1.6 Consultation and Further Information

During the development of this plan we have consulted with the local community and statutory and other interested stakeholders.

For further information on the plan please contact:

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1.7 Standards and Guidance on which this LMP is based

This land management plan has been produced in accordance with a range of government and industry standards and guidance as well as recent research outputs. [A full list of these standards and guidance can be found on our website.](#)

2. Forestry Scotland Regulatory Requirements

Proposed felling, restock and infrastructure works are shown on Map 5 Management, Map 6 Thinning and Map 9 Restock in plan period. These are summarised in Table 1.

Table 1: proposed management operations 2023-2032

Proposed Operations	2023 – 2032
Felling	69.6 ha
Thinning	128.2 ha
Restocking	33.4 ha
Deforestation	54.7 ha
New woodland creation	None proposed
New Road Construction	None proposed
Road Upgrade	2.8 km of routine maintenance.

Felling within the Dallas LMP area includes 54.7 ha on Mill Buie for Blanket Bog peatland restoration and Upland Heath management. The 33.4 ha to be restocked includes Scots Pine, Oak, and riparian broadleaves across Hill of the Wangie, Hillockhead and Mill Buie.

Full details of permitted tolerance for felling out with permission are included in Appendix C.

2.1.1 Coupe numbers

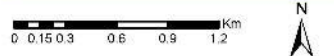
Management coupes and their numbers referred to throughout this plan.



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East Region
Dallas land management plan
 Map 10 Management coupe numbers
 Scale @ A4: 1:35,000
 Date June 2022

04001 Management coupe ref



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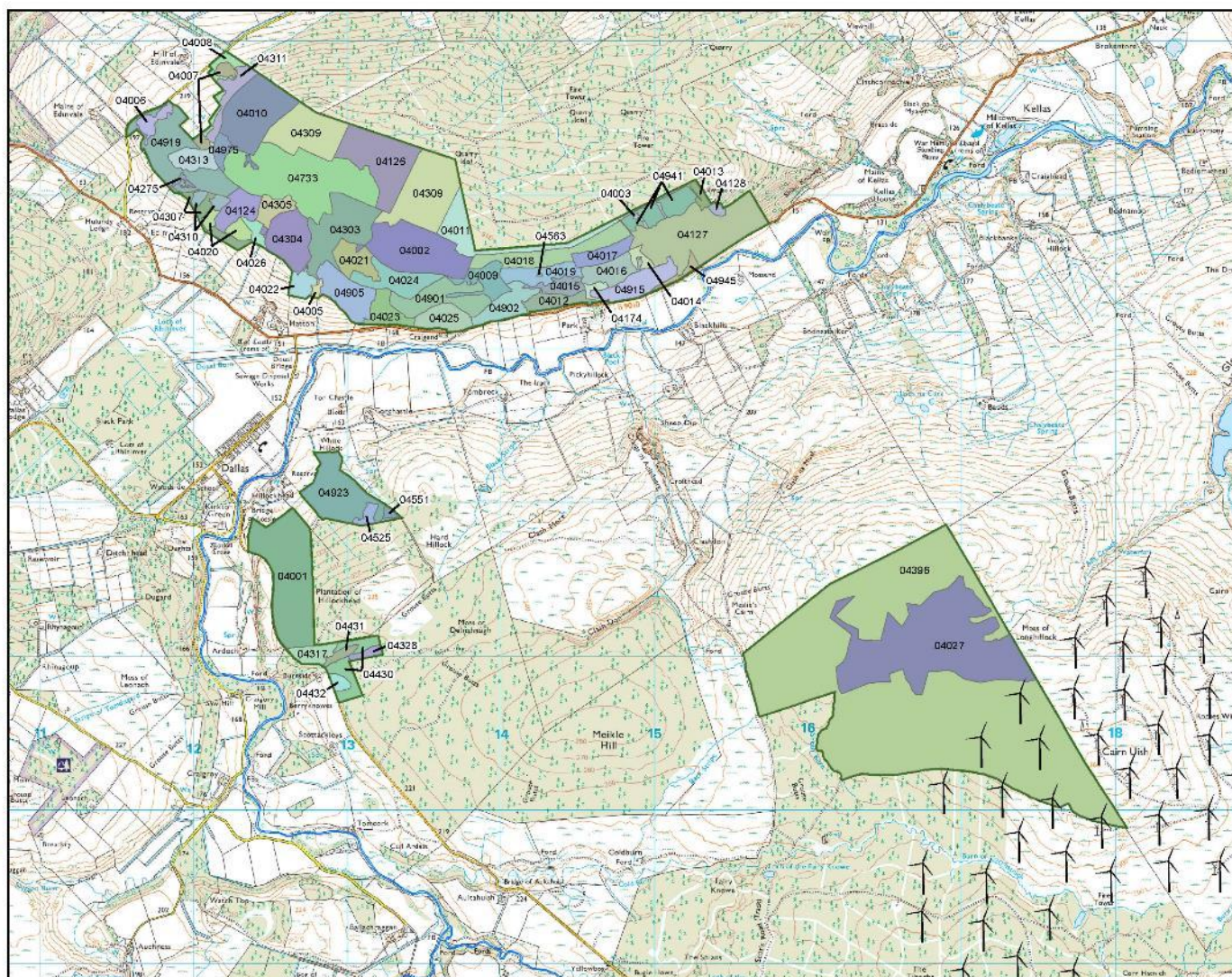


Figure 2: management coupe numbers across the Dallas LMP area.

2.1.2 Felling in plan period (2023-2032)

The proposed felling in the plan period is summarised in Table 2 and Table 3 and outlined in Figure 3.

Table 2: proposed felling operations

Proposed felling year	Area to be felled (ha)	Proportion of forest area (%)
Phase 1 (2023 - 2027)	64.6	11.2
Phase 2 (2028 - 2032)	5	0.9

Table 3 outlines the coupes, in the first 5 years of the plan, that are due to be felled across the Dallas LMP area.

Table 3: proposed clearfell by coupe.

Coupe number	European Larch (ha)	Lodgepole Pine (ha)	Norway Spruce (ha)	Oak (ha)	Scots Pine (ha)	Sitka Spruce (ha)	Total (ha)
04023	2.3	-	0.7	-	0.9	-	3.9
04027	-	20.0	-	-	-	34.7	54.7
04128	-	-	0.1	-	0.2	0.3	0.6
04902	0.7	-	-	0.3	4.4	-	5.4



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Map 5 Management
Scale @ A4: 1:35,000
Date June 2022

- Phase 1 felling (2023 - 2027)
- Phase 2 felling (2028 - 2032)
- Phase 3 felling (2033 - 2037)
- Phase 4 felling (2038 - 2042)
- Phase 5 felling (2043 - 2047)
- Phase 6 felling (2048 - 2052)
- Phase 7 felling (2053 - 2057)
- After 2057
- Low impact silviculture
- Long term retention
- Open
- Felled



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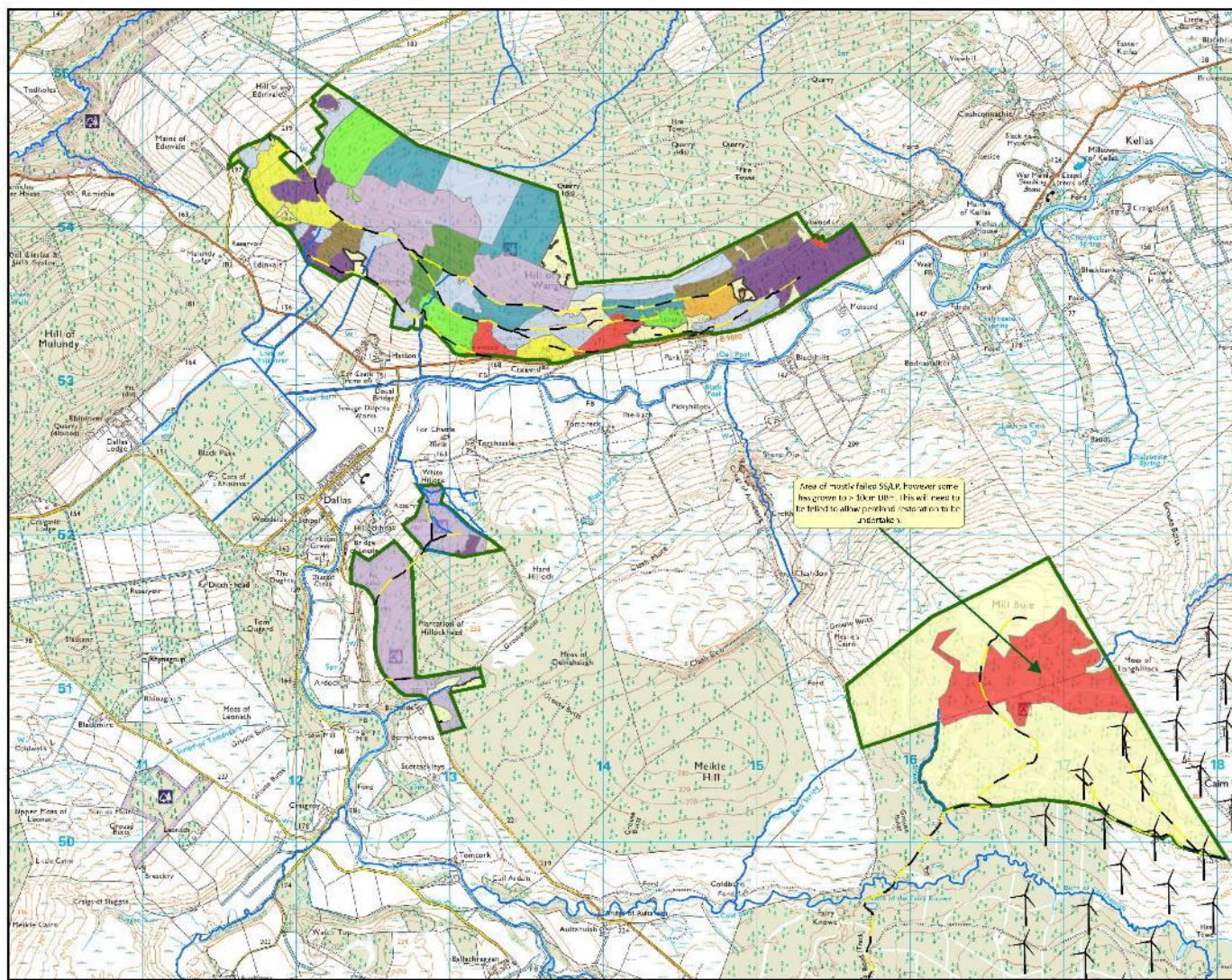


Figure 3: management map for the Dallas LMP areas.

2.1.3 Change in age class over the next 20 years (2023 – 2042)

Figure 4 and Table 4 outline how the age class of the trees across the Dallas LMP are over the next 20 years.

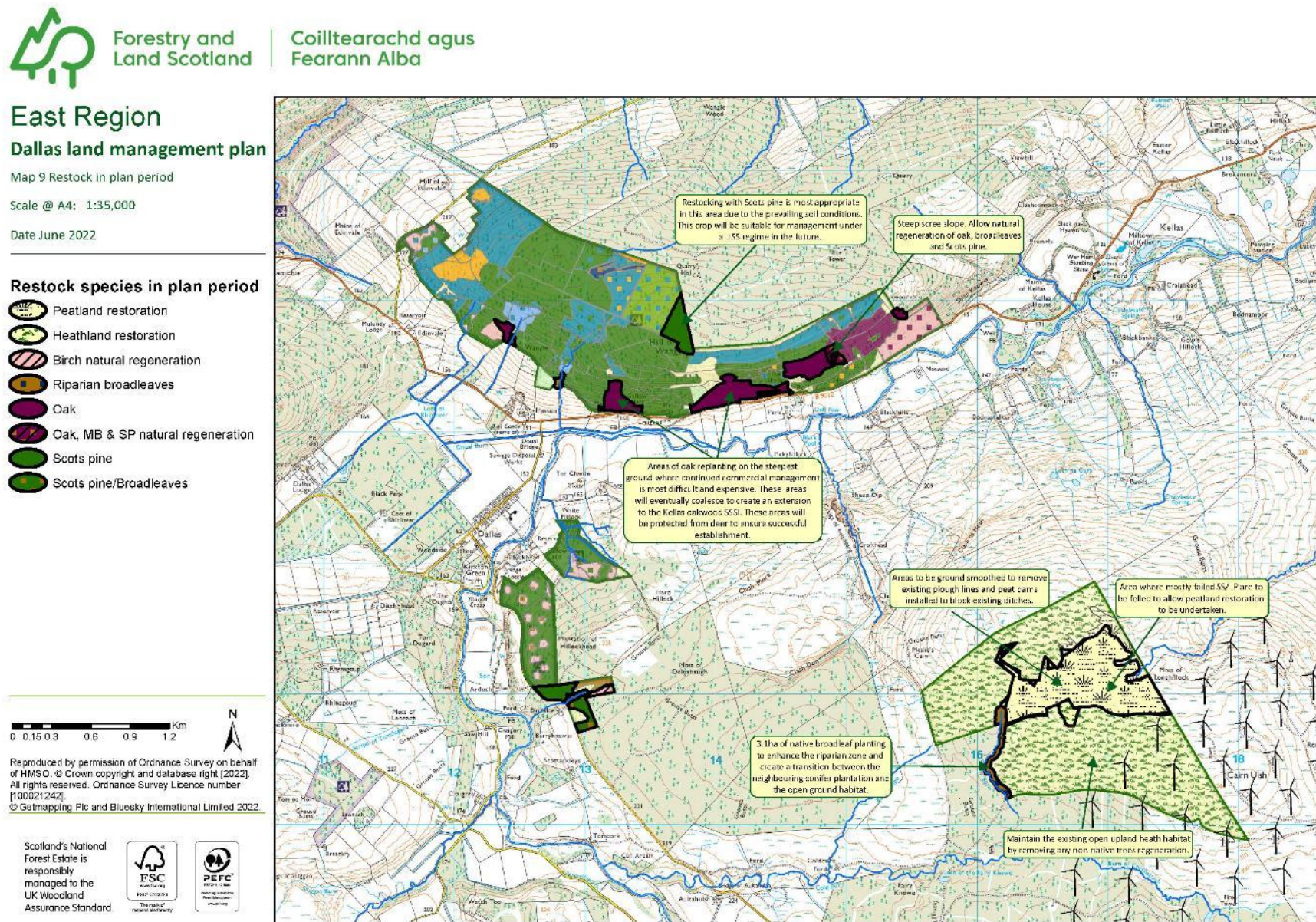


Figure 4: change in age class over the next 20 years (2023 - 2042).

Table 4: change in age class over the next 20 years (2023 - 2042).

Age Class (years)	Growth Stage	2023 Area ha	2023 Area %	2028 Area ha	2028 Area %	2033 Area ha	2033 Area %	2042 Area ha	2042 Area %
0-10	Establishment	77	23%	47	14%	55	16%	58	17%
11-20	Thicket	27	8%	65	19%	47	14%	55	16%
21-40	Pole	62	19%	71	21%	83	24%	70	20%
41-60	Maturing High Forest	36	11%	31	9%	36	11%	61	18%
61+	Old High Forest	132	40%	123	36%	118	35%	96	28%

2.1.4 Thinning in plan period (2023 - 2032)

Table 5 summarises the thinning to take place across the Dallas LMP area, and Figure 5 outlines the coupes in Hillockhead and Gallow Hill that will be thinned in 2024 and coupes in Hill of the Wangie to be thinned in 2027. Figure 6 outlines the individual management coupes to be thinned in the plan period.

Table 5: thinning and felling volume and area over Phases 1 and 2 (10 years).

Thinning Year	Thinning volume (m ³)	Thinning area (ha)	Proportion of the forest area (%)
Phase 1: 2024	909	28.4	4.9
Phase 2: 2027	4,107	99.8	17.3

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Dallas land management plan

Map 7 Thinning coupes

Scale 1:8,500 @ A1

Date November 2020

Next thinning year

- 2024
- 2027

0 250 500 750 Meters

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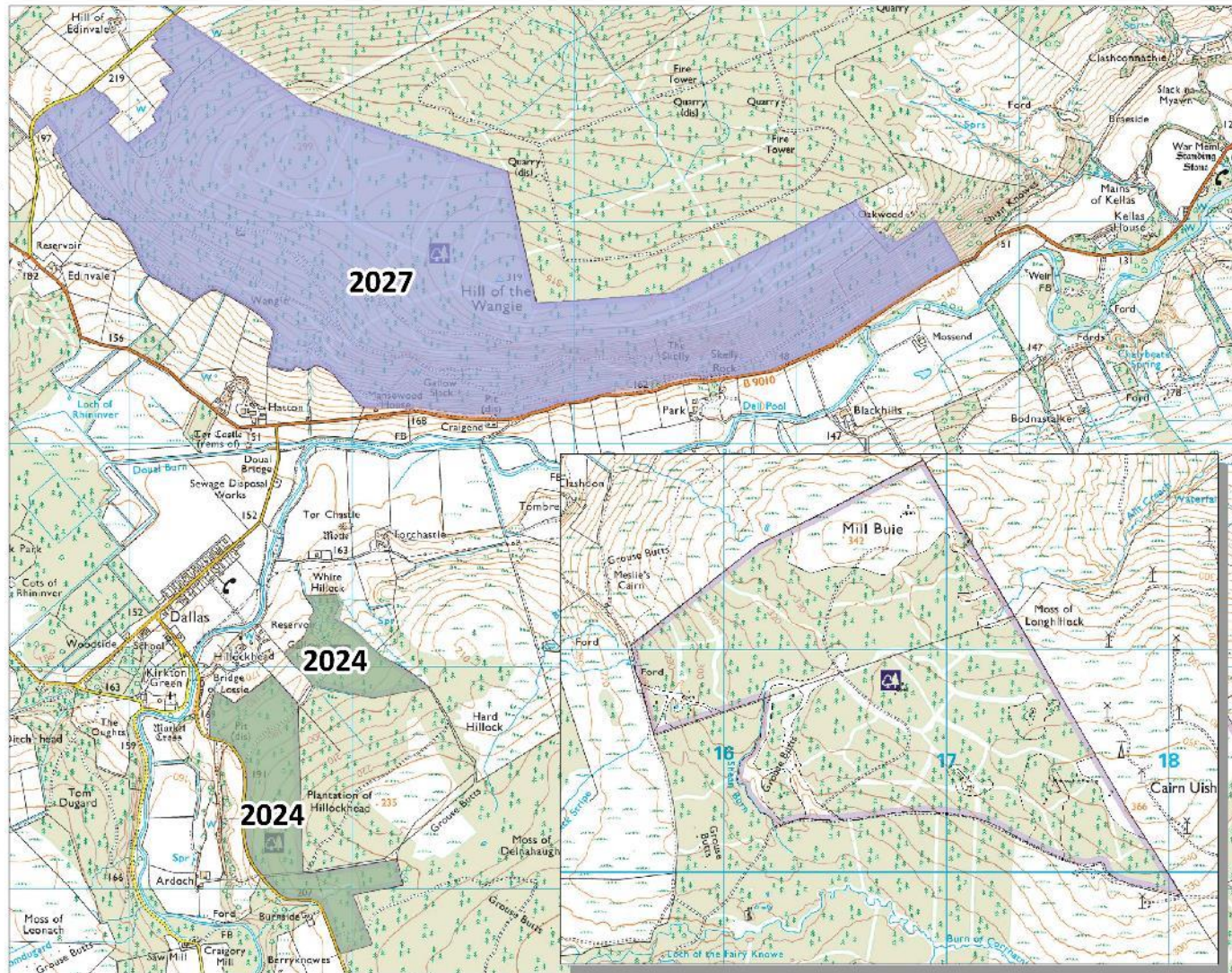
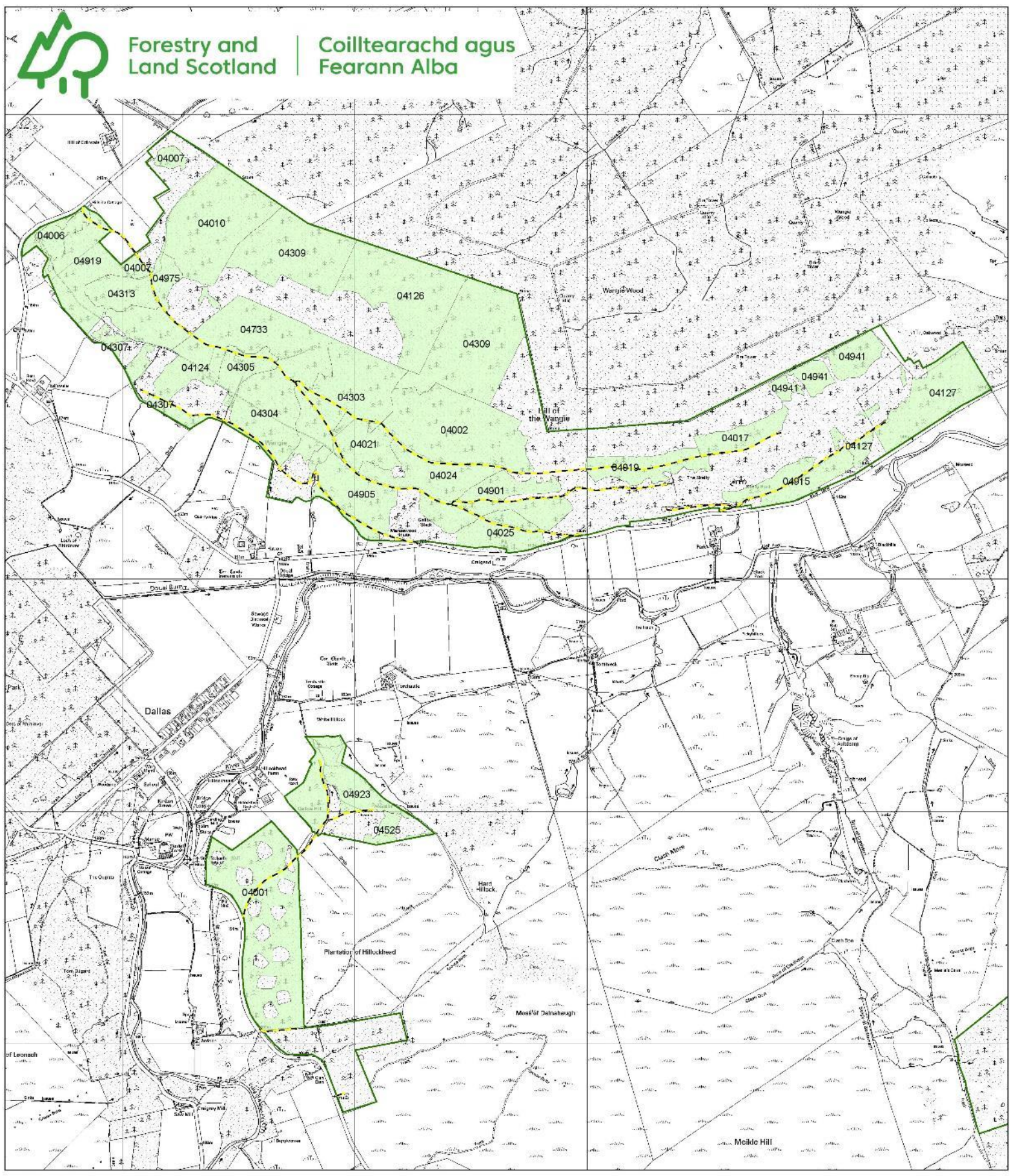

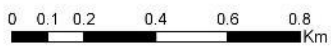


Figure 5: Gallows Hill and Hillockhead to be thinning in 2024 and Hill of the Wangie in 2027.



East Region
Dallas land management plan
 Map 11 Thinning approval
 Scale @ A1: 1:7,500
 Date: April 2022

 Thinning approval area



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Figure 6: management coupes to be thinning during the plan period (2023-2032).

2.1.5 Restocking in plan period (2023-2032)

Figure 7 outlines the coupes to be re-stocked and with what species, across the Dallas LMP area. summarised in Table 6. Do note that Figure 7 shows the current species overlaid by the restock in the plan period.

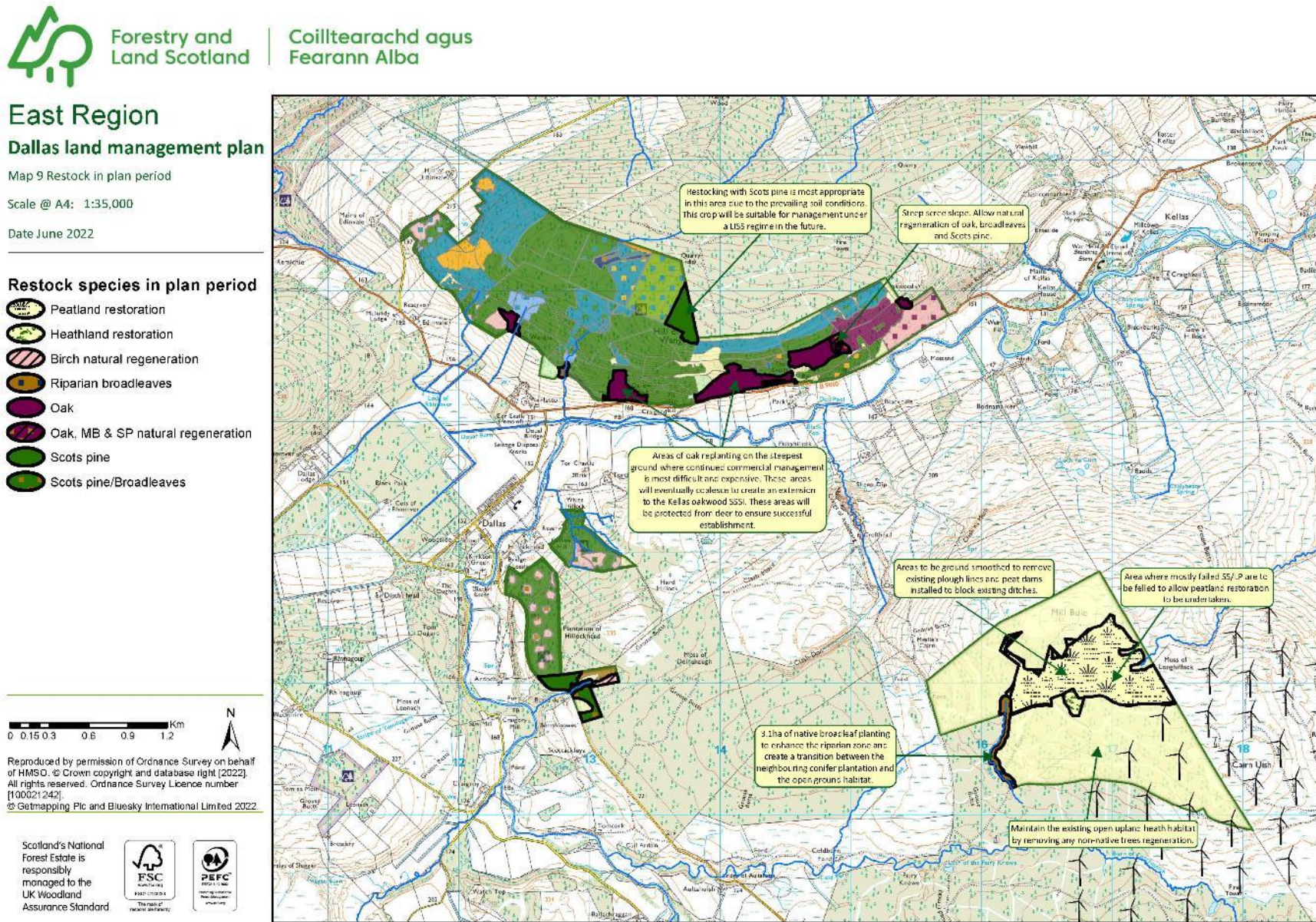


Figure 7: restock in the plan period

Table 6: proposed restock coupes across the plan period (2023-2032).

Restock Year	Coupe	Downy Birch (ha)	Mixed Broadleaves (ha)	Oak (ha)	Scots Pine (ha)	Upland heath management (ha)	Peatland restoration (ha)	Open (ha)	Total (ha)
2023	04005	-	0.3	-	-	-	-	0.2	0.6
2023	04011	-	-	-	8.1	-	-	-	8.1
2023	04012	-	-	3.4	-	-	-	-	3.4
2023	04026	-	0.2	1.1	-	-	-	0.1	1.4
2023	04027	-	0.6	-	-	3.9	49.9	0.4	54.7
2023	04317	-	-	-	2.8	-	-	-	2.8
2023	04396	-	1.6	-	-	164.9	4.5	1.1	172.0
2023	04431	-	0.5	-	-	-	-	0.9	1.4
2023	04432	-	-	-	-	-	-	1.0	1.0
2026	04128	-	-	0.6	-	-	-	-	0.6
2027	04023	-	-	4.0	-	-	-	-	4.0
2028	04014	-	-	-	-	-	-	1.3	1.3
2028	04328	1.0	-	-	-	-	-	-	1.0
2028	04430	-	2.1	-	2.1	-	-	-	4.2
2032	04016	-	-	5.0	-	-	-	-	5.0

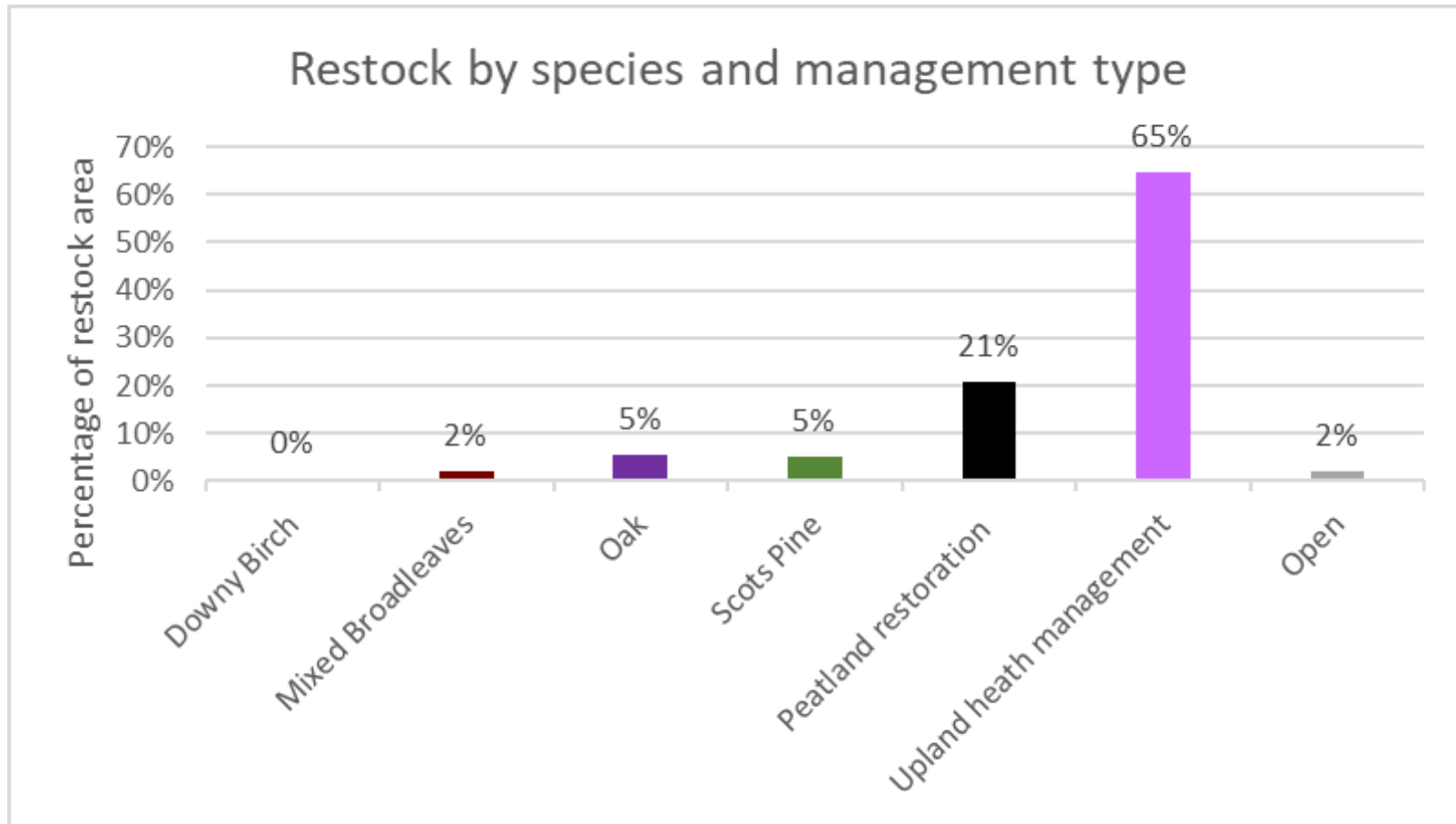


Figure 8: summary graph showing restock by species and management type as a percentage of the Dallas LMP area.

2.1.6 Species change in the plan period and beyond (2023 – 2042)

Table 7 and Figure 9 outlines how tree species and area will change between 2023 and 2042 across the Dallas LMP area.

Table 7: change in species composition over the next 20 years (2023 - 2042).

Species	2023		2028		2033		2042	
	ha	%	ha	%	ha	%	ha	%
Open/other	246.5	42	242.1	42	241.2	42	240.3	41
Scots pine	174.8	30	172.0	30	167.9	29	177.4	31
Sitka spruce	73.3	13	73.0	13	72.3	12	46.6	8
Mixed Conifers	33.1	6	29.5	5	29.5	5	27.9	5
Oak	24.3	4	37.8	7	43.8	8	62.8	11
Mixed Broadleaves	28.2	5	26.1	4	25.7	4	25.3	4

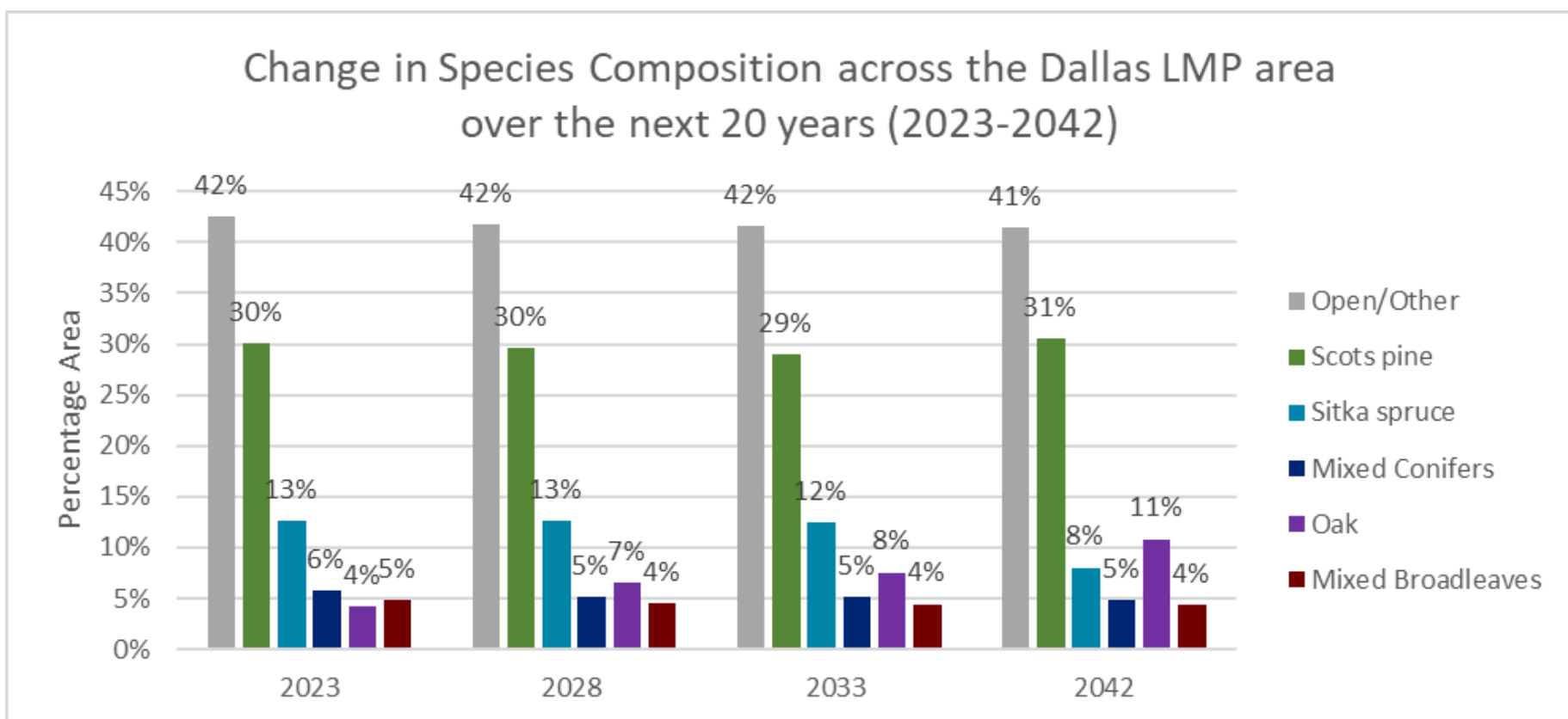


Figure 9: change in species composition over the next 20 years (2023 - 2042).

2.2 Departure from UKFS Guidelines

The LMP seeks to follow the United Kingdom Forestry Standard (UKFS) in all requirements. No felling will take place until any neighbouring restock areas have achieved two metres in height. If this is not achieved the separation will be agreed with Scottish Forestry.

2.3 Tolerance Tables

Please refer to Appendix C for details of permitted tolerances for plan amendments.

3. Determination

3.1 Deforestation

This plan requests permission to carry out deforestation of 54.7 ha for the purposes of deep peat restoration at Mill Buie. The Mill Buie block is an area of conifer planting that has failed across the majority of the block. This area is on deep peat soils and will be restored to a functioning peatland system that includes Blanket Bog (Priority Habitat). This will involve the removal of any remaining live conifers and undertaking ground works to restore the original ground surface as best as possible. An EIA screening determination is being sought as part of this plan submission to allow the deforestation to be undertaken. Further details of the site and the restoration process are in Appendix C Mill Buie peatland restoration plan.

3.2 Forest Roding

There are no proposals for new or upgrades to existing forest roads or All-Terrain Vehicle (ATV) tracks in the plan period. The only work on the existing road network will be ongoing maintenance, to ensure all parts of the Dallas LMP area are accessible for planned operations.

Agreed timber haulage routes are used without restriction as regulated by the Road Traffic Act 1988 (Figure 10).

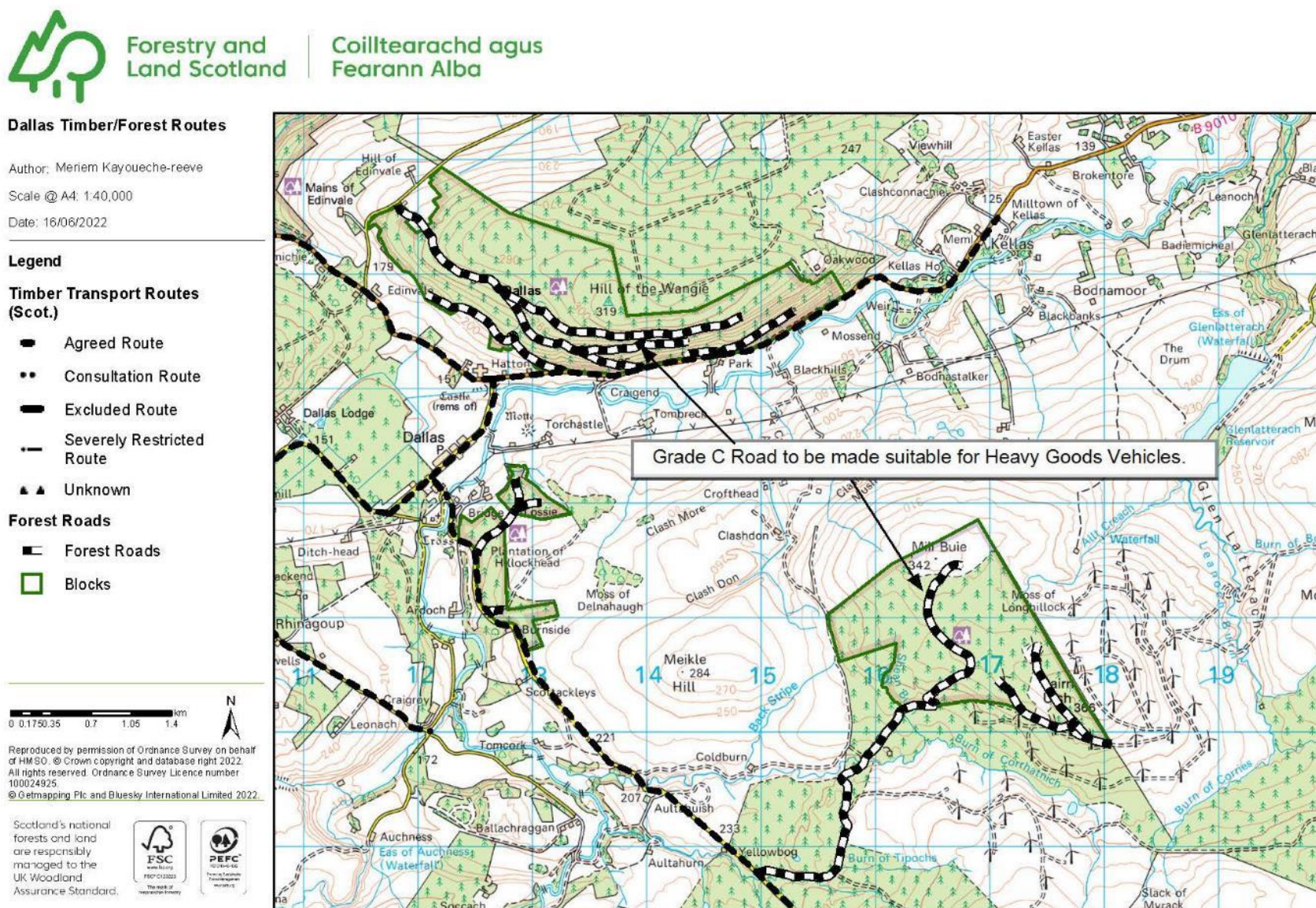


Figure 10: agreed timber and forest routes out of the Dallas forest blocks.

3.3 Quarries

There are no plans for quarry expansion in the Dallas LMP area or during the plan period.

3.4 New woodland creation

There are no plans to plant any new woodland in the Dallas LMP area or during the plan period.

3.5 Additional Regulatory Requirements

3.5.1 Water Framework

Buffering of commercial crops from water courses and private water supplies will follow current Forestry and Water guidelines. Watercourses in the Hill of the Wangie, Hillockhead and Mill Buie, will be planted with small groups of suitable native broadleaved species to increase tree cover and improve the riparian habitat. The watercourses in Gallow Hill and Mill Buie will be planted during the plan period (2023 – 2032).

3.5.2 Prior Notification and Planning Consent

The deep peat restoration at Mill Buie will require Prior Notification on approval of this plan by SF.

No planning consent is required during the plan period.

4. Dallas Forest

4.1 Key Features

The four forest blocks that make up the Dallas LMP area each have their unique key features (Figure 11). Further detail of background and survey information used to inform the planning process is included in Appendix B.



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East Region

Dallas land management plan

Map 2 Key features

Scale @ A4: 1:35,000

Date June 2022

- Dallas boundary
- Forest road
- Potentially vulnerable area (to flooding)
- Watercourse
- Water supply point
- Water pipeline
- Powerlines
- SSSI
- PAWS (Plantation on ancient woodland site)
- Peat soils
- Wind turbine
- Area of mostly failed conifer
- Steep ground (>35%)



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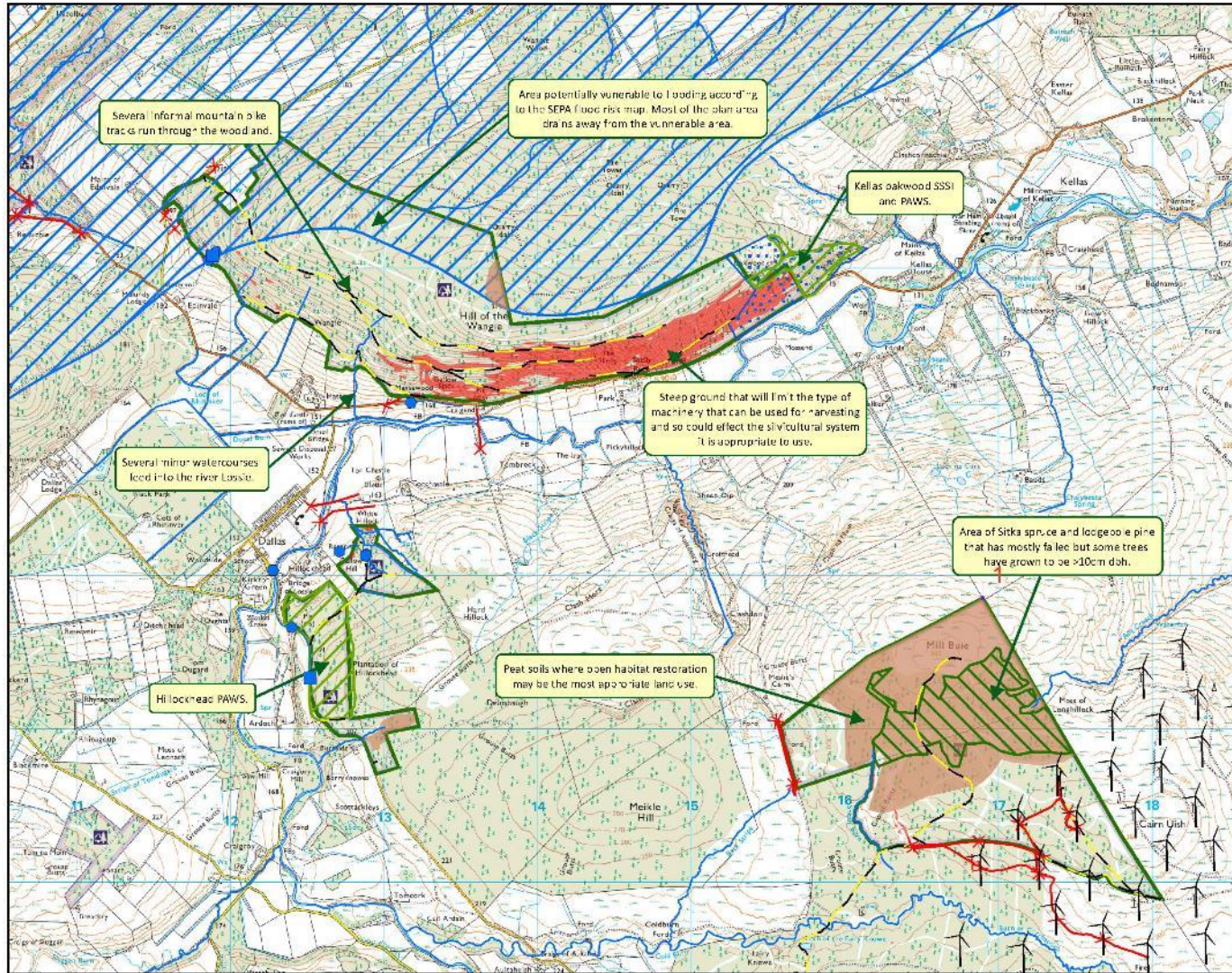


Figure 11: key features across the LMP area.

4.2 Woodland description

The current species mixture across the Dallas LMP area is outlined in Figure 12, Figure 13 and Figure 14, in summary Scots Pine (32%) and Sitka Spruce (21%) are the dominant species. Establishment (25%) and Old High Forest (24%) is the dominant age structures.

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Map 3 Current species

Scale @ A4: 1:35,000

Date June 2022

- Open
- Felled
- Birch
- Broadleaves
- Douglas fir
- Larch
- Norway spruce
- Oak
- Scots pine
- Sitka spruce
- Species mixture: main colour = dominant species, dots = secondary species. Birch with oak shown here.



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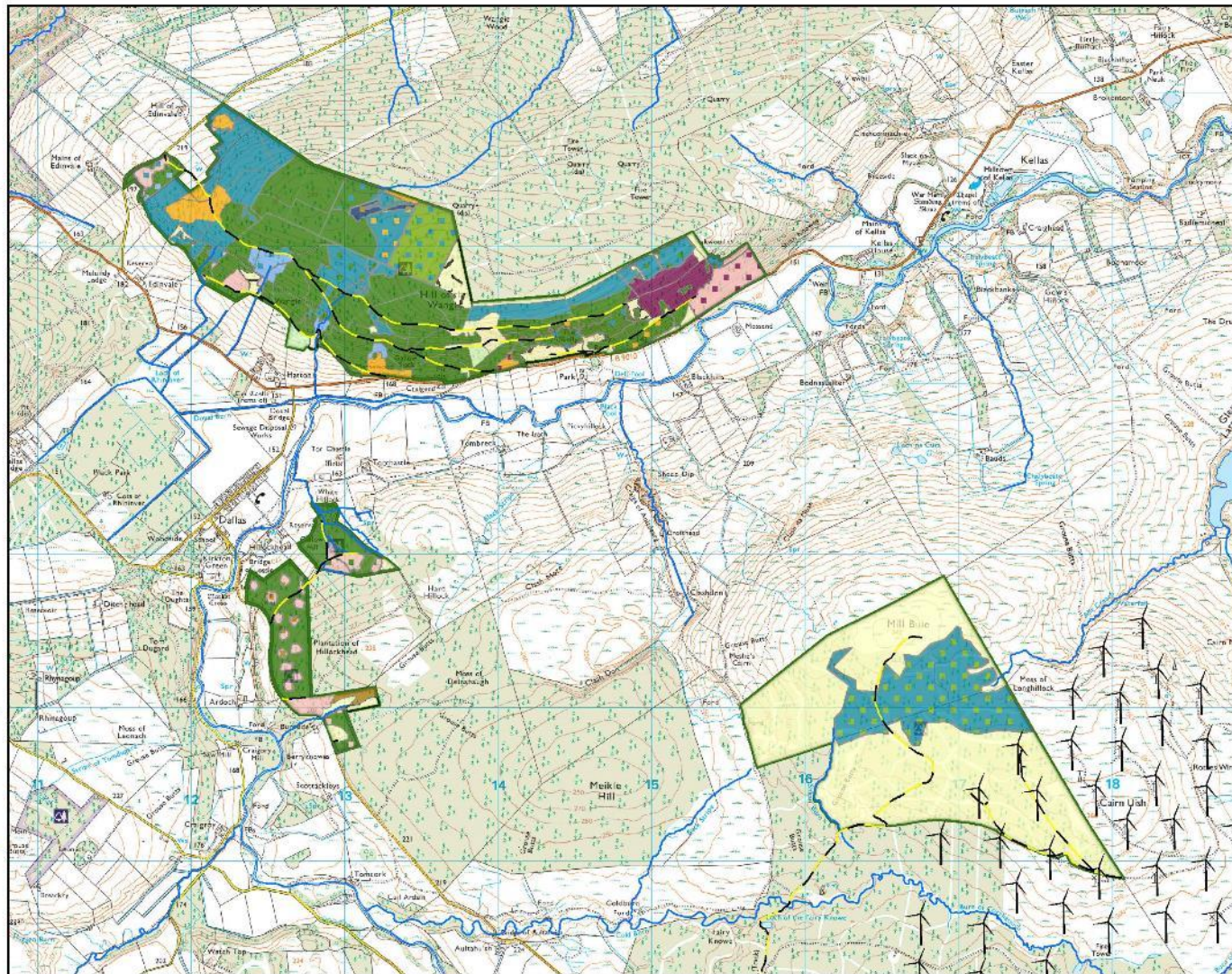


Figure 12: current species across the Dallas LMP area.

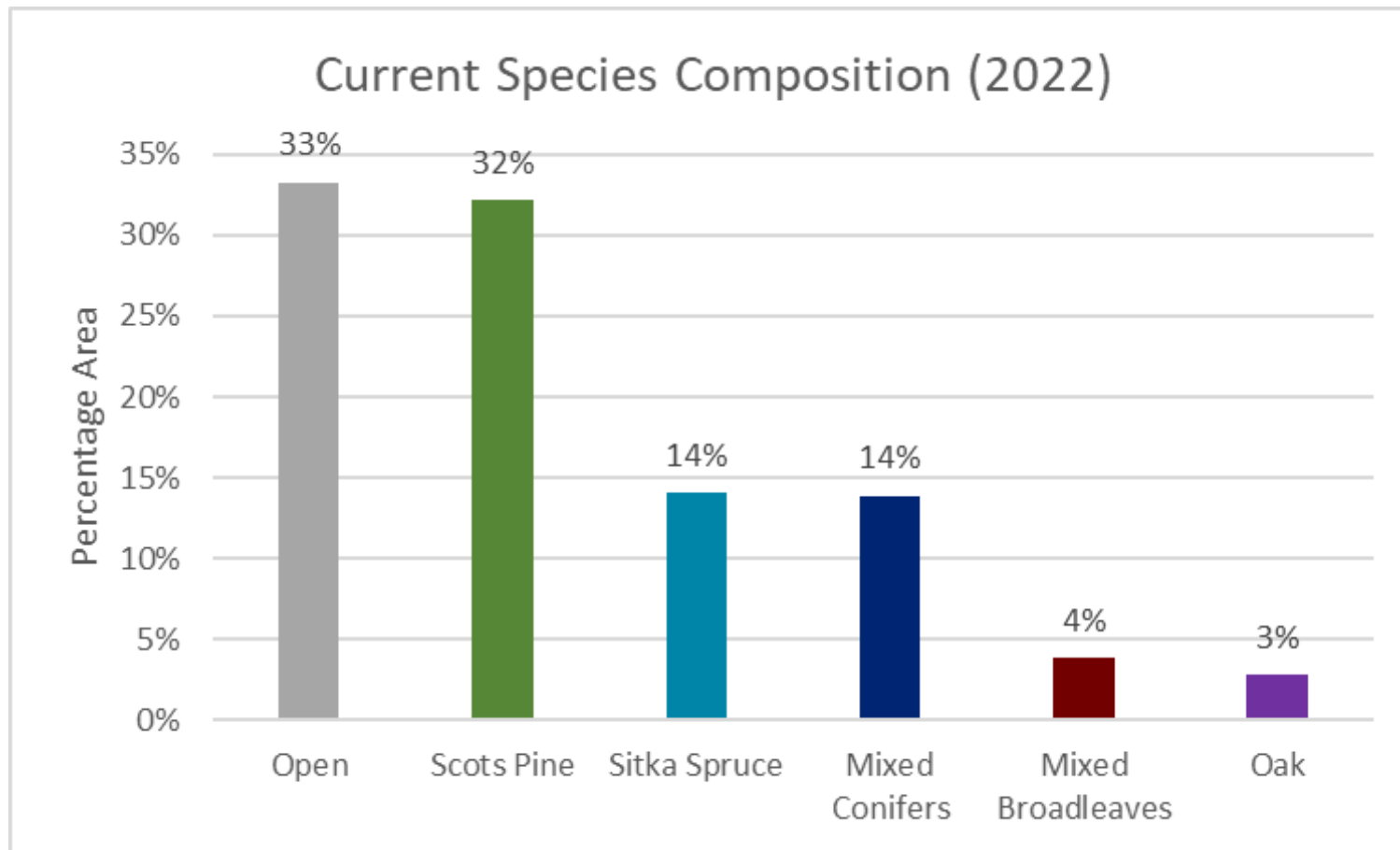


Figure 13: current species composition

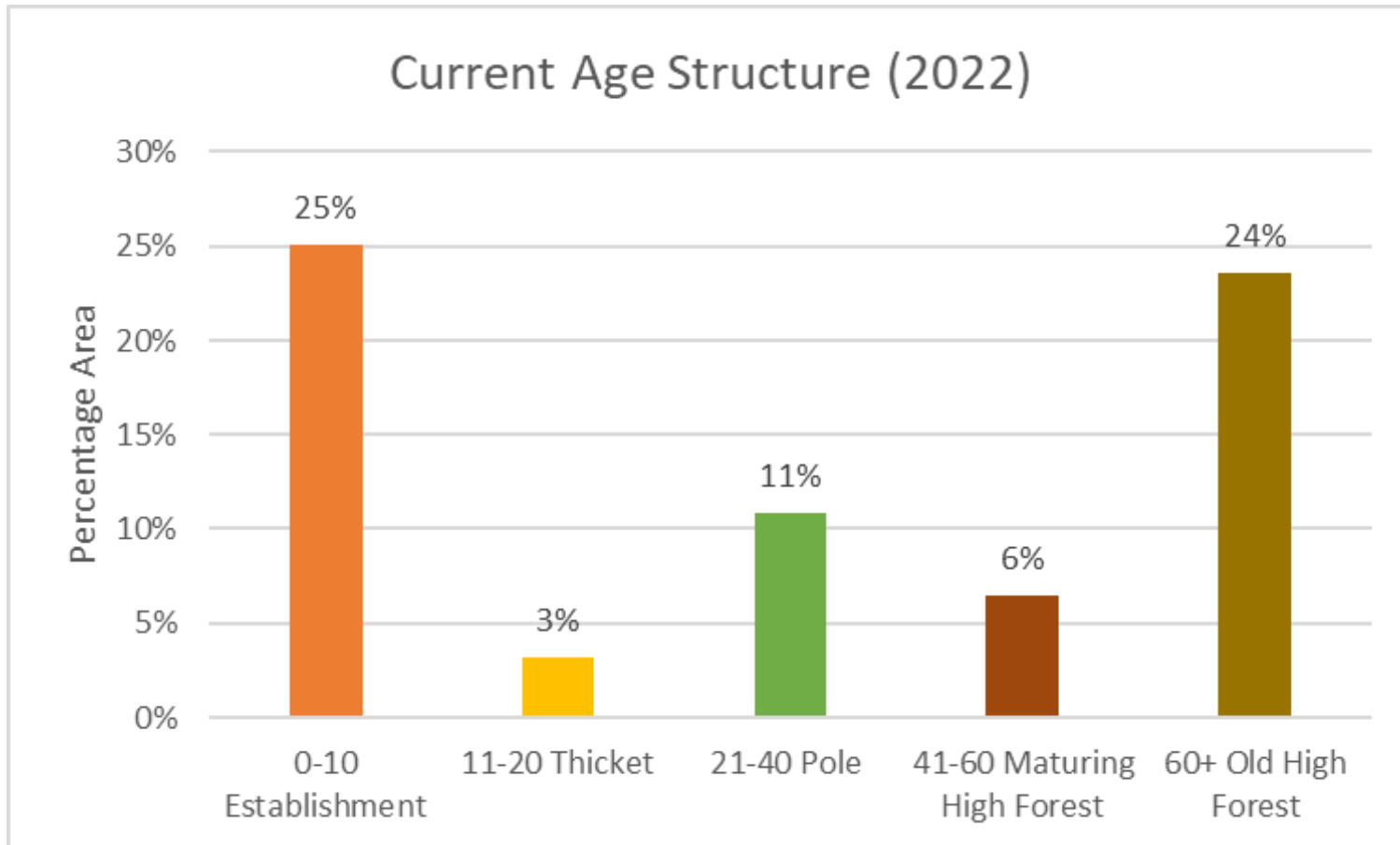


Figure 14: current age structure

5. Plan Aims and Objectives

5.1 Key challenges

- General:
 - Maintaining a productive forest whilst balancing the interests of recreation and habitat enhancement/restoration.
 - Protecting the watercourses that originate from with/run through the Dallas LMP area, and are minor tributaries to the River Lossie.
- Hill of the Wangie:
 - 18% is on steep, linear slopes making forest operations difficult and more costly, this includes restock, felling and deer management.
 - Proactive communication between FLS and the downhill mountain biking community is to reduce the potential for conflict.
 - The eastern slopes, include Kellas Oak Woodland, a SSSI and PAWS, in a currently 'unfavourable' condition.
- Hillockhead:
 - A PAWS site managed under LISS.
- Mill Buie forest block:
 - Areas of priority habitat, Upland Heath and Blanket Bog, that require restoration.

5.2 Management Aims

The aims detailed below outline the long-term vision for Moray and Aberdeenshire Uplands. They are driven by national policy drivers and are applicable to the whole plan area.

5.2.1 Ecosystem services and additional public benefits

Support for small sawmills.

- Secure carbon sequestration through (Continuous Cover Forestry) CCF.
- Sustainable timber production.
- High recreation use of Scotland's National Forest and Land (SNFL) contributes to increased health and well-being.
- Establish and support starter farms.
- Maintenance of high water quality of salmon rivers.
- Provide shelter for stock on neighbouring land.

5.2.2 Other national commitments

- Investment in silvicultural practices.
- Habitat management for Scottish wildcat.
- Management of tree disease.

5.2.3 Contribution to financial sustainability

- High quality timber crops.
- Diversity of softwood species.
- Wind farm investment.
- High potential for saw logs.
- Specialist timber markets.

5.3 Plan objectives

Objective	Critical success factor
The management of the woodland to produce a sustainable crop of quality timber suitable for the local processing mills.	Undertake the planned thinning and felling programme during the plan period in order to increase the quality of the timber and to meet the production targets.
Manage deep peat areas to maximise their carbon sequestration and storage potential.	Deep peat areas of Blanket Bog (Priority Habitat) identified and a programme of restoration works is proposed during the plan period.
Improving the condition of Kellas Oakwood SSSI area so it moves towards being classified in favourable condition.	Expansion of native broadleaves, the proactive removal of non-native species and protection from over browsing.
Work with the mountain bike trail users to facilitate the use of trails that do not significantly impede the management of the forest.	A network of mountain bike routes are being used that allows operation to proceed without undue conflict with the trail users.
Maintain the riparian zones to minimise any potential impact on the downstream Potentially Vulnerable Area (PVA) and maintain the watercourses in "good" ecological status.	Riparian zones that are felled within the plan period have been, or are planned to be, restocked with native broadleaf woodland and open ground.
Mange the Hillockhead plantation to gradually restore it to its ancient woodland character.	Continue the programme of thinning and natural regeneration to allow further areas to be felled as part of the LISS prescription in future iterations of the plan.

5.4 Long term vision and management objectives

The long term vision for the Dallas LMP area is to create a forest that fully meets all UK Forestry Standard (UKFS) requirements.

The steeper ground in the Hill of the Wangie will be gradually converted to a oak woodland to mimic and extend the Kellas Oakwood SSSI. The flatter ground towards the top of the slope and Hillockhead will be managed as Scots Pine dominated forest, under LISS. With an objective of maximising the production of quality timber suitable for the local processing mills. Restocking by natural regeneration will be favoured where ground conditions and crops allow. Mill Buie will remain as open ground with peatland restoration being undertaken where the soil conditions make this a suitable process to increase the sequestration and storage of carbon in addition to managing the upland health habitat Figure 15.



East Region
Dallas land management plan
 Map 8 Long term future species and habitats
 Scale @ A4: 1:35,000
 Date June 2022

- Open
- Birch
- Broadleaves
- Oak
- Riparian broadleaves
- Scots pine
- Scots pine/Birch
- Scots pine/Broadleaves
- Peat restoration area
- Heath restoration area

0 0.15 0.3 0.6 0.9 1.2 Km

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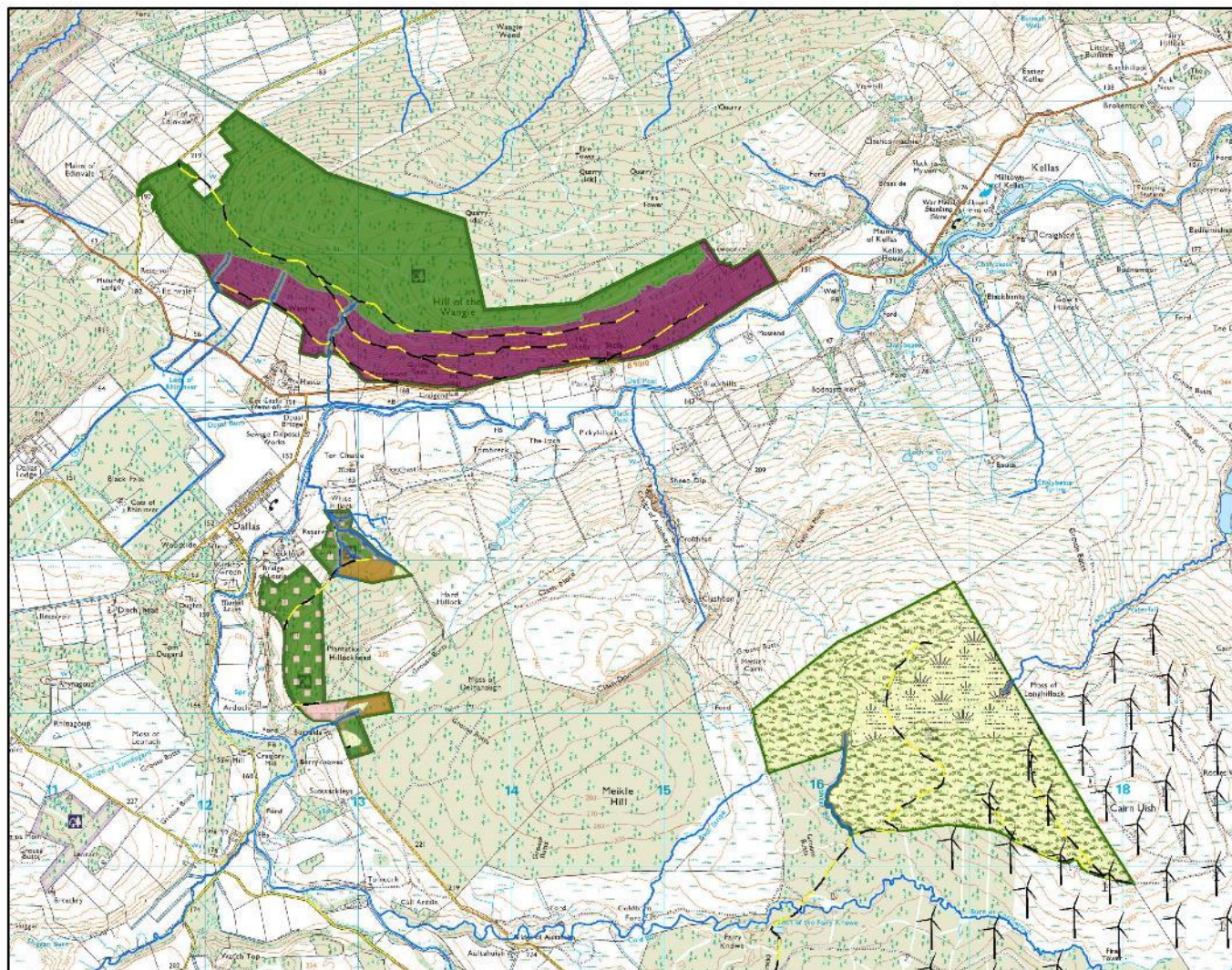


Figure 15: long term future species and habitats across the Dallas LMP area.

6. Analysis and Concept

6.1 Opportunities and Constraints Analysis

Table 8 details the objectives identified and the opportunities and constraints that these present and the concepts for how they will be addressed.

Table 8: Key features, opportunities, constraints and the resulting concept that addresses these.

Objective	Opportunities	Constraints	Concept
Commercial timber production	Provide a planned and sustainable timber supply through thinning and felling operations.	The steep ground in some of the plan area will make operations more difficult and expensive.	Operational constraints identified e.g. on steep ground we will employ appropriate techniques such as cable extraction or sky line.
Deep peat soils	Undertake a soil and peat condition survey to identify areas with deep peat soils and priority habitat in the Mill Buie block.	The area was previously ground prepped and planted with trees, which have not reached the Yield Class expected.	Where appropriate, undertake peatland habitat restoration to improve the ability of deep peat soils to sequester and store the maximum amount of carbon.
Kellas Oakwood SSSI	Increase the area of Oak woodland within the Hill of the Wangie that is adjoining with the SSSI. Making use of the steeper slopes that are less suited to timber production.	Grazing pressure from deer will need to be controlled/eliminated. The natural regeneration of non-native conifers and broadleaves will need to be controlled.	Following the felling of small coupes of conifers on the steeper slopes, erect deer fencing and replant with Oak and other appropriate native broadleaves. Periodically remove the natural regeneration of undesirable species.
Mountain biking	The steep slopes in the Hill of the Wangie make it very suitable for mountain bike trails.	The widespread nature of the trails currently in use makes it more challenging to undertake forestry operations without the risk of mountain bikers interacting with machinery and timber lorries and trails being damaged.	Work with the local mountain biking community to agree access during forestry operations and retain without causing excessive damage where appropriate.
Water quality and peak flow management	The existing watercourses provide features that can be utilised to improve the biodiversity potential of the block by establishing riparian woodland.	The watercourses are tributaries of the River Lossie which flows into an area vulnerable to flooding downstream of the plan area.	Undertake felling and establishment operations to ensure they have minimal impact on the amount and rate of water entering the watercourses and thus affecting the downstream flood risk. Undertake all operations according to UKFS water guidelines. Improve the water quality of the watercourses by establishing riparian woodland.
Plantation on ancient woodland site (PAWS)	Create a native pine woodland with a diverse structure in the Hillockhead block.	The current age structure is fairly even with little diversity. Restoration to native woodland will take decades.	Mange the pine crop in Hillockhead under a LISS regime, utilising natural regeneration where possible, to create a more uneven age structure.

6.2 Concept

The concepts detailed in Table 8 forms the broad framework for the detailed design with the LMP, and is presented graphically in Figure 16. A number of the concepts overlap on the same area and they will be implemented together to achieve a broader range of objectives.

East Region

Dallas land management plan

Map 4 Analysis and concept

Scale @ A4: 1:35,000

Date June 2022

- Dallas boundary
- Forest road
- Steep ground (>35%)
- Watercourse
- Powerline
- SSSI
- PAWS (Plantation on ancient woodland site)
- Peat soils
- Windturbine
- Area of mostly failed conifer



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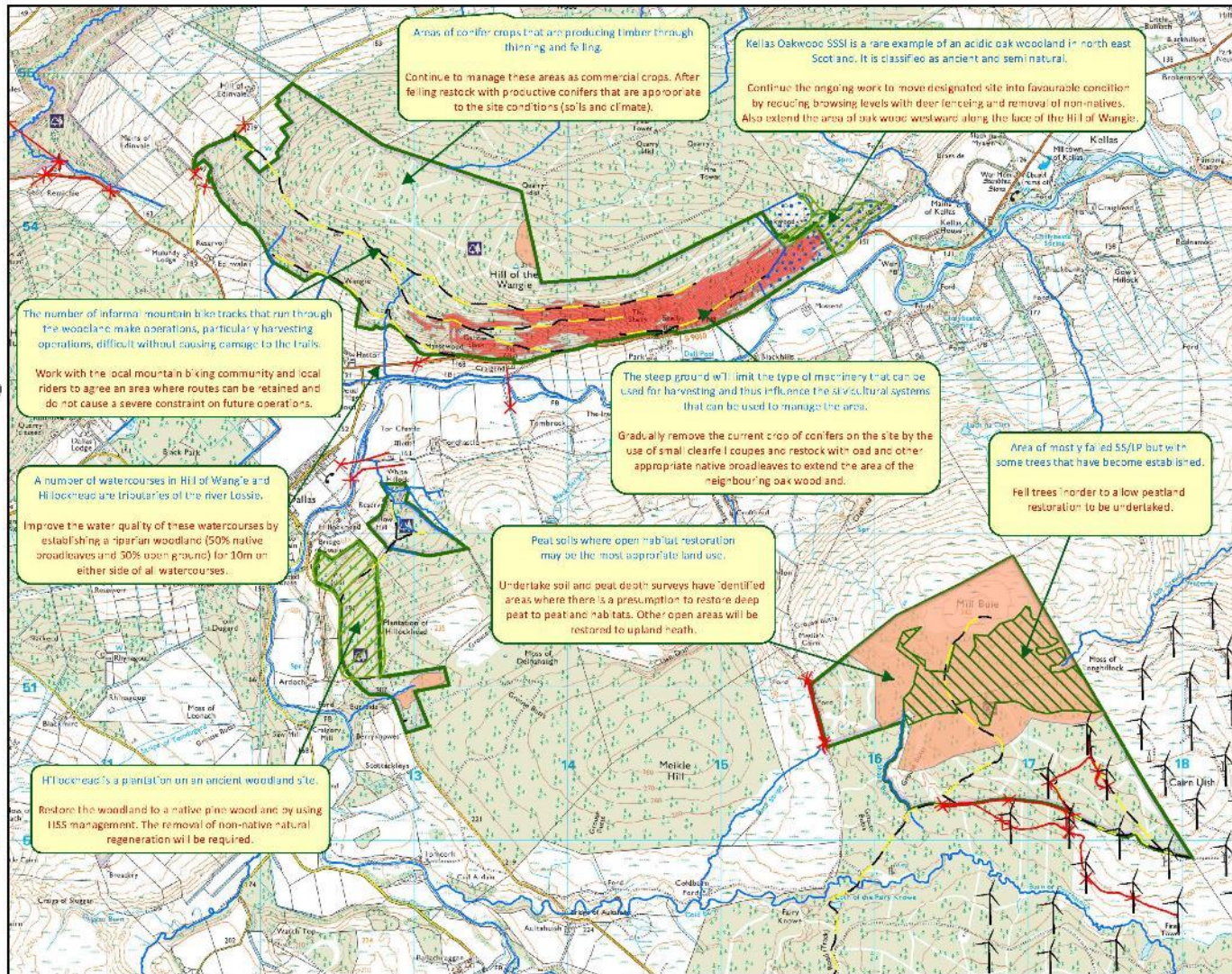


Figure 16: analysis and concepts outlined across the Dallas LMP area.

7. Management Proposals

7.1 Management

The Dallas LMP has been designed in accordance with sound silvicultural, legal and environmental principles set out within the UKFS and UK Woodland Assurance Standard and in line with FLS National Spatial Overview.

7.2 Silvicultural Systems

The plan area has been divided into a system of coupes to reflect the varying management strategies being applied. CCF practices will be employed on sites where conditions will allow, assuming crops are suitably aged and have received appropriate past management interventions. The precise system of management for each coupe will be tailored to suit the current and subsequent species in the rotation.

Areas not suitable for CCF, by virtue of access constraints, compromised stability due to exposure or where crops have not received timely thinning interventions, will be managed as clearfell and restock systems. Details of proposed silvicultural systems detailed below.

7.3 Woodland Management Prescriptions

7.3.1 Felling

Between 2022 and 2031, three Phase 1 and one Phase 2 coupes are scheduled for felling. Full details of individual coupes, including fell year, area and species can be found in section 2.1.2. For an overview of coupes to be felled across the LMP area see Figure 17.

The Dallas LMP area is currently managed as clearfell using harvester and forwarder working where the ground conditions allow and skyline and/or skidder in the steeper areas. Clearfelling (and subsequent replanting) provides the most flexibility for changing the current species towards the long term vision for the block. Felling coupes will be shaped and scaled to fit with the landscape taking account of visibility from key viewpoints. As the Dallas LMP area starts to get closer to the long term vision, the area of clearfelling will decrease and it is hoped that eventually all the commercial crops will be managed under LISS prescriptions.



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East Region

Dallas land management plan

Map 5 Management
Scale @ A4: 1:35,000
Date June 2022

- Phase 1 felling (2023 - 2027)
- Phase 2 felling (2028 - 2032)
- Phase 3 felling (2033 - 2037)
- Phase 4 felling (2038 - 2042)
- Phase 5 felling (2043 - 2047)
- Phase 6 felling (2048 - 2052)
- Phase 7 felling (2053 - 2057)
- After 2057
- Low impact silviculture
- Long term retention
- Open
- Felled

0 0.15 0.3 0.6 0.9 1.2 Km

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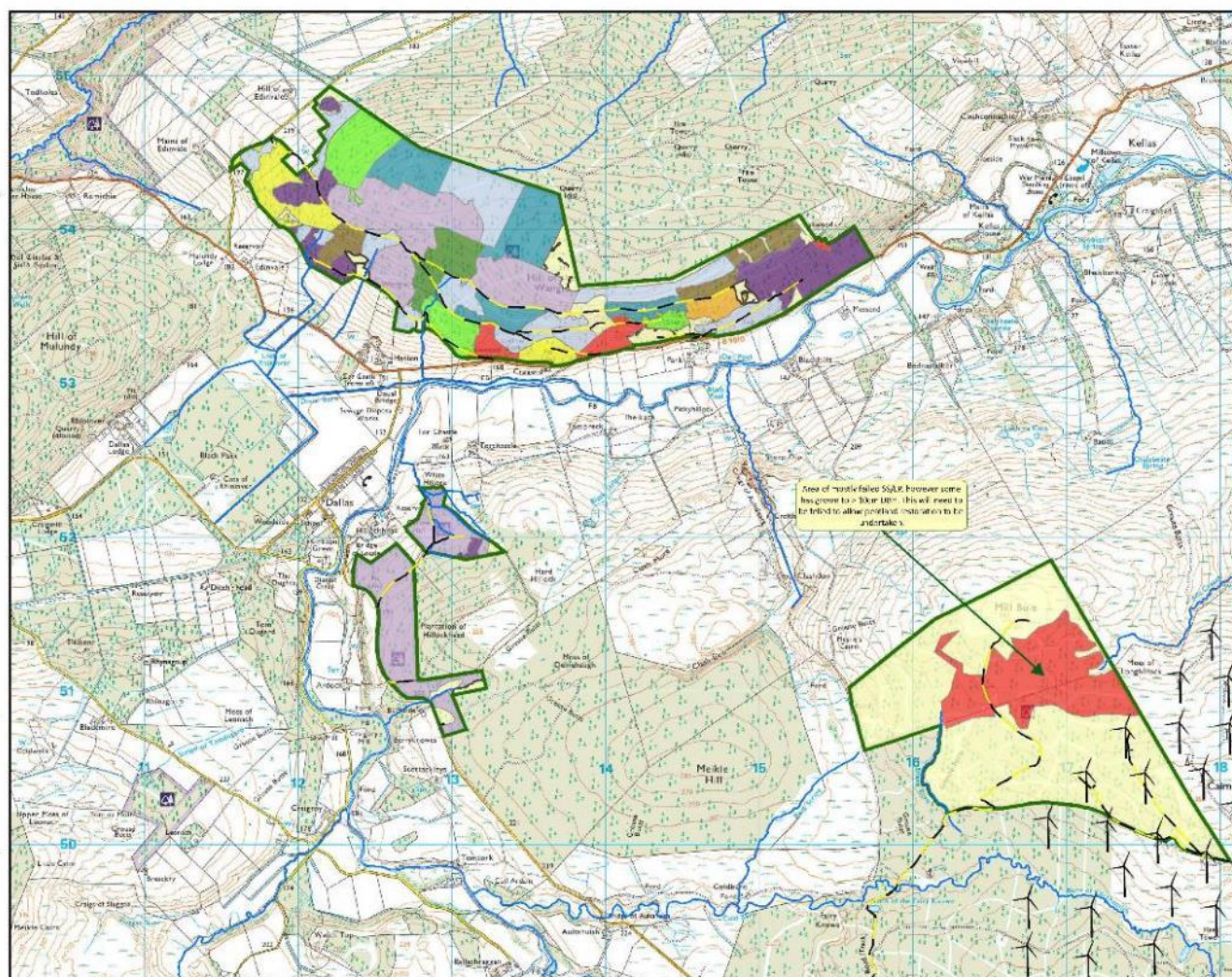


Figure 17: phased felling during the plan period (2023-2032) until 2056.

7.3.2 Thinning

We will maximise the area managed through thinning in the plan area. FLS policy assumes that all productive conifer crops will be thinned except:

- Thinning is likely to significantly increase the risk of windblow.
- A single thinning operation is likely to require an unacceptably large initial investment in relation to the potential benefits due to access or market considerations.

- Thinning is unlikely to improve poorly stocked or poor quality crops.

The plan is on a seven year cycle due to the species present and their growth rates. All thinning decisions will be guided by Operational guidance Booklet No 9 'Managing thinning.' Of the 577.6 ha in Dallas LMP plan area, 128.2 ha (22.2%) of the crop will be thinned between 2022 and 2031. Details of coupes to be thinned in the plan period can be found in section 2.1.4. For an overview of areas to be felled in the plan period see Figure 5.

Thinning will normally be carried out at, or below, the level of marginal thinning intensity (i.e. removing no more than 70% of the maximum Mean Annual Increment (MAI), or Yield Class (YC), per year). Higher intensities (no more than 140% of maximum MAI, or YC, per year) may be applied where thinning has been delayed, larger tree sizes are being sought or as part of a LISS prescription. In all cases work plans will define the detailed thinning prescription before work is carried out and operations will be monitored by checking pre and post thinning basal areas for the key crop components.

7.3.3 Low Impact Silvicultural Systems

Currently 73 ha (13%) of the plan areas is managed with LISS prescriptions. Opportunities to increase the area managed under LISS will be taken as the crops and site conditions allow.

During this plan period there are no proposals for selective felling in the areas currently managed under LISS. The Hillockhead block has previously had groups felled within the matrix. Although regeneration is occurring, more time is needed to allow these to develop before the current groups are extended or further groups are felled. In the Hill of the Wangie some of the Scots Pine crops are still too young to need interventions other than thinning. The more mature areas (69 – 75 years) are reaching the age at which selective felling could be undertaken. However, a number of clearfell coupes that are more of a priority are due to be felled. Scots Pine is a long lived tree and can be managed on a long rotation, there is no requirement to intervene in these areas in this plan period other than for thinning.

The locations of the LISS coupes are highlighted on the map (Figure 18) which is followed by Table 9 detailing LISS prescriptions for the period of this plan. LISS, a silvicultural system of growing and harvesting that provides continuous forest cover and a multiple age structure. This maintains a forest environment and lessens the impacts of harvesting on landscape, wildlife habitat, soils and water. It requires more intensive and skilled management, but is an alternative to clearfelling on sites of high sensitivity.

The areas of Oak currently planted, adjacent to Kellas Oakwood SSSI and being restocked with natural regeneration are being designated as Minimum Intervention (MI) in this plan. Although there is no plan to manage these areas for timber production, the MI designation will allow us to undertake thinning operations as a way of creating a woodland structure that can eventually become a natural reserve where no interventions beyond tree safety work will be required.



Dallas LISS Prescriptions

Author: Meriem Kayoueche-reeve

Scale @ A4: 1:40,000

Date: 26/04/2022

Legend

Scenario Management Coupes (Low Impact Silviculture)

- Single tree selection
- Group selection
- Irregular shelterwood
- Group shelterwood
- Strip shelterwood
- Uniform shelterwood
- Long Term Retention
- Blocks



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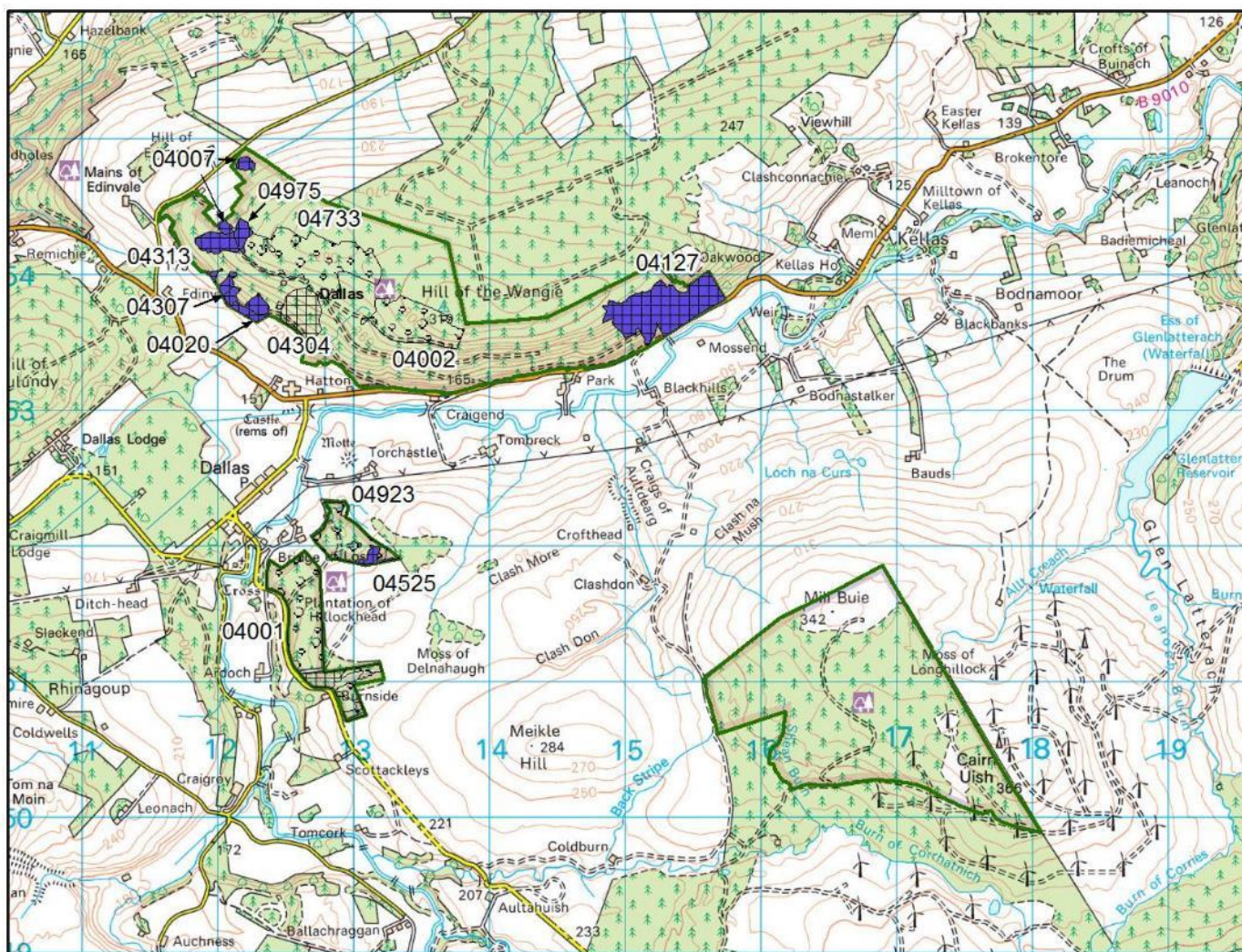


Figure 18: LISS coupes across the Dallas LMP area.

Table 9: detailed LISS prescriptions for the Dallas LMP area.

Coupe reference	Management Type and area	Management objective/Reason for selection	Long-term structure and desirable species	Age, Trans. period and return time (years)	Regeneration and ground flora	Observations (e.g. likely barriers to achieving objective)	Next treatment required	Other useful information
04001	Group selection 19.2 ha	Production of timber. Good seed source present over the site. Evidences of successful natural regeneration within groups previously felled.	Uneven aged crop of Scots pine with a minor percentage of broadleaves.	Age – Mostly SP 70 years. Trans period – 80 years Return time – 10 years	Heather, Blaeberry with some Birch and Rowan regeneration (regen). Also Scots Pine regen in areas which receive more light.	Ground vegetation and deer browsing pressure.	Crown thinning including removal of <i>Peridermium pini</i> infected trees. Heavier thinning around southern edges of existing groups to increase light levels.	Allow existing groups to become more established before further groups are felled.
04923	Group selection 8.6 ha	Production of timber. Good seed source present over the site.	Uneven aged crop of Scots pine with a minor percentage of broadleaves.	Age – Mostly SP 70 years. Trans period – 80 years Return time – 10 years	Heather, Blaeberry with some Birch and Rowan regeneration (regen). Also Scots Pine regen in areas which receive more light.	Ground vegetation and deer browsing pressure.	Crown thinning including removal of <i>Peridermium pini</i> infected trees.	Allow existing felled areas to regenerate and become fully established before further felling is undertaken.
04002	Uniform shelterwood 16.9 ha	Production of timber. Good seed source present over the site. Crop previously thinned.	Even aged crop of Scots pine with a minor percentage of broadleaves.	Age –SP 67 to 77 years. Trans period – 80 years Return time – 10 years	Heather and Blaeberry.	Ground vegetation and deer browsing. Scarification may be required to expose soil.	Crown thinning including removal of <i>Peridermium pini</i> infected trees.	
04304	Uniform shelterwood 8.8 ha	Production of timber. Good seed source present over the site. Crop previously thinned.	Even aged crop of Scots pine and Norway spruce with a minor percentage of broadleaves.	Age –72 years. Trans period – 80 years Return time – 10 years	Mostly Heather.	Ground vegetation and deer browsing. Scarification may be required to expose soil.	Crown thinning including removal of <i>Peridermium pini</i> infected trees.	
04733	Uniform shelterwood 28.7 ha	Production of timber. Good seed source present over the site. Mature crop previously thinned.	Even aged crop of Scots pine with a minor percentage of broadleaves.	Age –11.7 ha at 71 years, 17.0 ha at 6 years. Trans period – 80 & 140 years Return time – 10 years	Mostly Heather.	Ground vegetation and deer browsing. Scarification may be required to expose soil.	Crown thinning including removal of <i>Peridermium pini</i> infected trees.	
04007, 04313, 04307, 04020, 04525	Long term retention 14.3 ha	Retention of trees beyond their optimal financial felling age for structural and visual diversity.	Over mature stands of mixed species trees.	Age – Various Trans period – None Return time – 10 years	Mostly heather and grasses. Some Larch regen associated with Larch areas.	Potential for windblow within mature crops.	Thin along with adjacent coupes where appropriate.	Larch is being retained due to the current restrictions on planting thus maintaining species diversity.
04127	Minimum intervention 21.1 ha	Retention of Oak over the long term as an expansion of the adjacent Kellas Oakwood SSSI.	Over mature Oak dominated wood with other appropriate native broadleaves present.	Age – Various Trans period – None Return time – Unscheduled	Grasses present throughout, Bracken spreading in some sections.	Regen from adjacent spruce, ensure felling takes place to remove seed source.	No treatment planned.	A set-up operation may be undertaken to ensure the long term survival and biodiversity potential of the coupe.

7.3.4 Restocking and Natural Regeneration

Wherever possible natural regeneration will be taken advantage of to achieve the desired species mixture for individual coupes as shown in Figure 7. Where a change of species is desired or natural regeneration is not providing sufficient cover supplementary planting will be used to achieve the desired mixture.

Conifer restocking will be managed to achieve 2,700 stems per ha.

In addition to moving towards the UKFS requirement for each LMP to have 5% of the block as native broadleaves. Broadleaf replanting, or natural regeneration, will be managed to achieve 1,600 stems per ha in the fully stocked areas, with up to 25% of the area being retained as open ground where appropriate. Fully stocked broadleaf areas will be planted in the most appropriate locations within the coupe, and take into account scree slopes which will be left open or to regenerate naturally. This decision will be taken by the operations and environment foresters once the preceding crop has been felled, and site conditions can be properly assessed. Therefore there has been no attempt to map these areas as part of this plan.

Riparian habitats will be restocked with a mixture of suitable native broadleaved species planted in small groups, and allowed to regenerate naturally from seed. They will be protected by exclosures and planting tubes.

All areas identified for restocking by natural regeneration will be recorded and programmed for inspection on a five yearly basis. At each inspection an assessment will be made to establish if the natural regeneration is, or is likely, to achieve the objectives for the site. If it is decided that the objectives are not being met then replanting with an appropriate species will be undertaken. If natural regeneration is occurring but not yet at the required density then the option to review the site in a further five years may be taken. If after two such inspections, that is ten years following felling, it is felt appropriate to wait a further period for natural regeneration then a discussion and agreement will be reached with Scottish Forestry. Enrichment planting will be used to ensure the target stocking density is reached if there is insufficient natural regeneration.

Details of coupes to be restocked in the plan period can be found in section 0.

7.3.5 Open Land Management

The Dallas LMP area contains both open hill and integral open space, concentrated at Mill Buie and on wet ground in the vicinity of watercourses, for example at Hillockhead. These open areas will actively managed to remain open and in the case of Mill Buie restored to Upland Heath and Blanket Bog.

7.3.6 Recreation

The Hill of the Wangie block is currently extensively used by mountain bikers with vehicle parking being one of the issues. Entrances are being blocked and vehicles are parking on what is quite a busy single track road, sometimes making it difficult for other vehicles to pass safely. The blocking of entrances into the wood carries with it the usual issues of getting easy access for emergency or FLS vehicles. Discussions with the users of the mountain bike trails will be undertaken during the period of this plan to agree a rationalisation of the trails so they are more discretely zoned and an improved approach to vehicle parking. This will allow future forestry operations to be undertaken without causing significant damage to trails and safer use of the public road by the local community.

7.3.7 Deer management

Wild deer on the SNFL are managed in accordance with the Scottish Government's strategy "Scotland's Wild Deer a National Approach" and under the auspices of the Code of Practice on Deer Management.

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

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

It is therefore FLS deer policy to:

- Prevent adverse deer impacts on commercial tree crops and the wider habitat. In doing so to carry out deer culling in an exemplary and humane way.
- Work closely with relevant organisations and neighbours to make sure that there are integrated deer management plans which seek to recognise the interests of all parties.
- Take opportunities to optimise income from venison from sporting where this does not conflict with our primary objective of maintaining deer impacts at an acceptable level, in line with Quality Meat Scotland accreditation in the form of The Scottish Quality Wild Venison (SQWV) Assurance Scheme
- Take all practicable steps to slow down the expansion of deer species into areas where they are not currently present.

All deer management will be carried out in accordance with FLS Deer Management Strategy. The aim is to manage deer density safely and humanely at a level which is consistent with acceptable impacts on forests and other habitats. This is likely to be at a density level of 5 deer per 100 hectares. Deer cull plans are prepared for each Deer Management Unit and are the responsibility of the Wildlife Ranger Manager.

Within the Dallas LMP area it is expected that conifer species will be able to be established with culling being the only means of deer control. However for coupes to be planted/regenerated with Oak or riparian planting will require protection. This will be maintained for the period required to achieve successful establishment (between and 5 and 10 years) and subsequently removed.

- Oak restock coupes over 1 ha will be deer fenced, less than 1 ha will be protected by tree tubes.
- Native riparian planting will be planted in clumps (less than 10 m x 10 m) and protected using stock fencing to allow animals to access the watercourse.

Due to the downhill mountain bike trails crossing 04902 (see Figure 19) consultation with the mountain biking community will be required to ensure access whilst protecting the Oak restock from browsing deer pressure (tubing and culling may be the most effective form of protection).



Forestry and Land Scotland

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Dallas Wildlife Management Map 11

Author: Meriem Kayoueche-reeve

Scale @ A4: 1:40,000

Date: 20/05/2022

Legend

Fences (Scot.)

Fences (Scot.)

Other Trails

Mountain Bike Trails

Rides

Restock species in plan...

Birch natural regeneration

Oak

Oak, Mixed Broadleaves and Scots Pine Natural Regeneration

Riparian broadleaves

Scots Pine

Scots Pine/Broadleaves

Forest Roads

Forest Roads

Blocks



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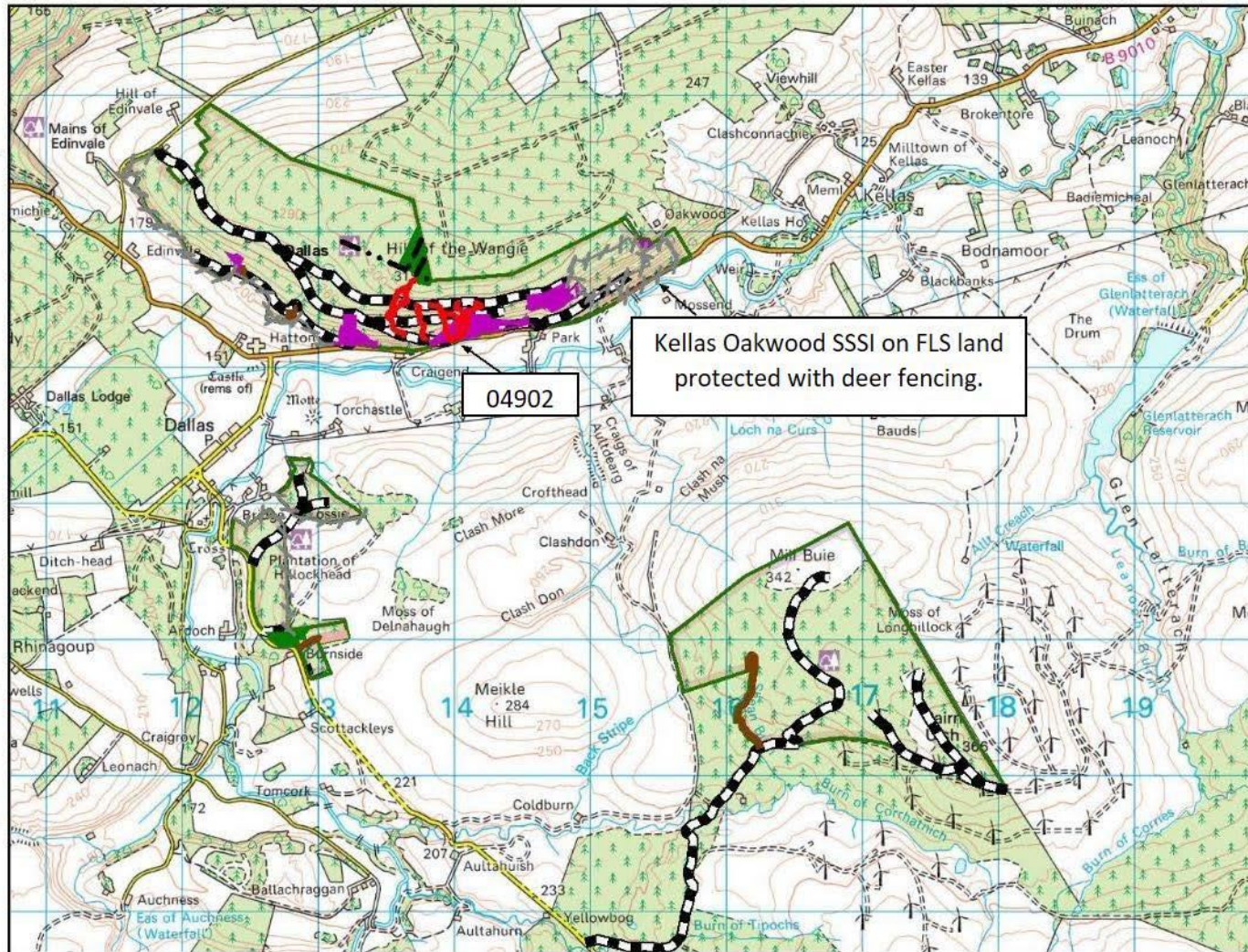


Figure 19: current deer management fences/rides and mountain bike trails.

7.3.8 Management of Tree health

The large pine weevil (*Hylobius abietis*) is likely to be the only major tree health issue encountered in this plan.

The *Hylobius* Management Support System (MSS) will be used to determine the best way to manage clearfell sites for successful, cost effective and environmentally friendly restocking. This system will be used along with past results and experience to determine the optimal time to restock while minimising the use of chemicals. Restocking will take place as soon after felling as possible, with two years being the usual period but this could be delayed up to four years.

7.4 Management of the environment

7.4.1 Historic environment

No scheduled sites or features of regional importance are present within the plan area. A check of both our own records and the Historic Environment Records (HER) will be undertaken to establish the location of any unscheduled features which will be included in the work plan that is drawn up prior to all forestry operations being undertaken. All operations will follow UKFS and FLS guidance for the management of heritage sites.

7.4.2 Habitats and biodiversity

Table 10 identifies works to enhance the habitats and biodiversity in the plan area. Those items highlighted in **red** must be undertaken as they are designated sites. Those in **orange** should be done but this is dependent on the appropriate coupes being felled or the resources (human and financial) being made available to allow them to be undertaken. While those in **green** could be done to benefit the habitats or biodiversity but only if the work can be carried out as part of another planned operation.

Table 10: proposals to enhance the habitats and biodiversity within the plan area.

Issue / Site Name	Aim/Rationale	Proposal	Action/Comment
Kellas Oakwood SSSI	Statutory designation. Continue to move site into favourable condition by reducing browsing levels by the installation of deer fence and the on-going removal of non-natives e.g. bracken.	See SSSI plan in Appendix D.	Woodland management required: <ul style="list-style-type: none"> • Enhancement planting • Removal of non-native tree regeneration and stump treatment. • Fence erection, inspection and maintenance. • Acorn collection.
Peatland restoration	Scottish Government Climate Change Strategy, SF/FLS Policy, Scottish Biodiversity Strategy.	See peatland restoration plan in 0.	Reviewed at LMP 5 year review.
Kellas and Hillockhead PAWS	UKWAS/FLS policy to restore and enhance through the expansion of native woodland.	Monitor PAWS site and remove non-native regeneration as required.	Restoration plan to be prepared in plan period and reviewed at LMP 5 year review.
River Lossie water quality	A number of minor tributaries are within the Hill of the Wangie, Gallow Hill and Hillockhead blocks. Enhance riparian habitat.	Ensure riparian zones meet UKFS water guidelines as a minimum. Establish riparian woodland with 50% tree cover and 50% open habitat to buffer 20m either side of all watercourses.	Undertake enhancement as and when coupes adjacent to watercourses are felled.
Hill of the Wangie LEPO	Adjacent to designated Oakwood and PAWS. Potential to increase semi-naturalness and expand native woodland.	Maintain species diversity and look for opportunities to increase LISS and semi-naturalness.	Undertake works as and when the appropriate coupes are programmed to be worked.
Woodland Grouse – Capercaillie and Black Grouse	Scotland’s Forestry Strategy 6 Key Species, UK Biodiversity Action Plan	The gradual conversion of the Hill of the Wangie block to a Scots pine dominated woodland will enhance the habitat for Capercaillie. There is potential for native woodland creation on Mill Buie, subject to open habitat survey, which would enhance the habitat for Black Grouse.	Restock with Scots pine as per the future species map as planned coupes are felled. Peatland restoration plan to be prepared in plan period. This could include elements of native woodland creation depending on survey results.
Kellas – non-native threat to designated site	Removal of seed source	Potential to fell mature Norway Spruce and Sitka Spruce beside PAWS at the top of Kellas Oakwood.	Felling of all non native conifers close to SSSI is planned for phase 1 felling.

8. Visualisations

8.1 Map of viewpoints

Only the planned operations in the Hill of the Wangie will have any impact on the local landscape. A visibility assessment has been undertaken and those areas with a coloured wash overlay on the map below have some degree of visibility of this block. The viewpoint locations have been selected with this in mind and are shown in Figure 20.

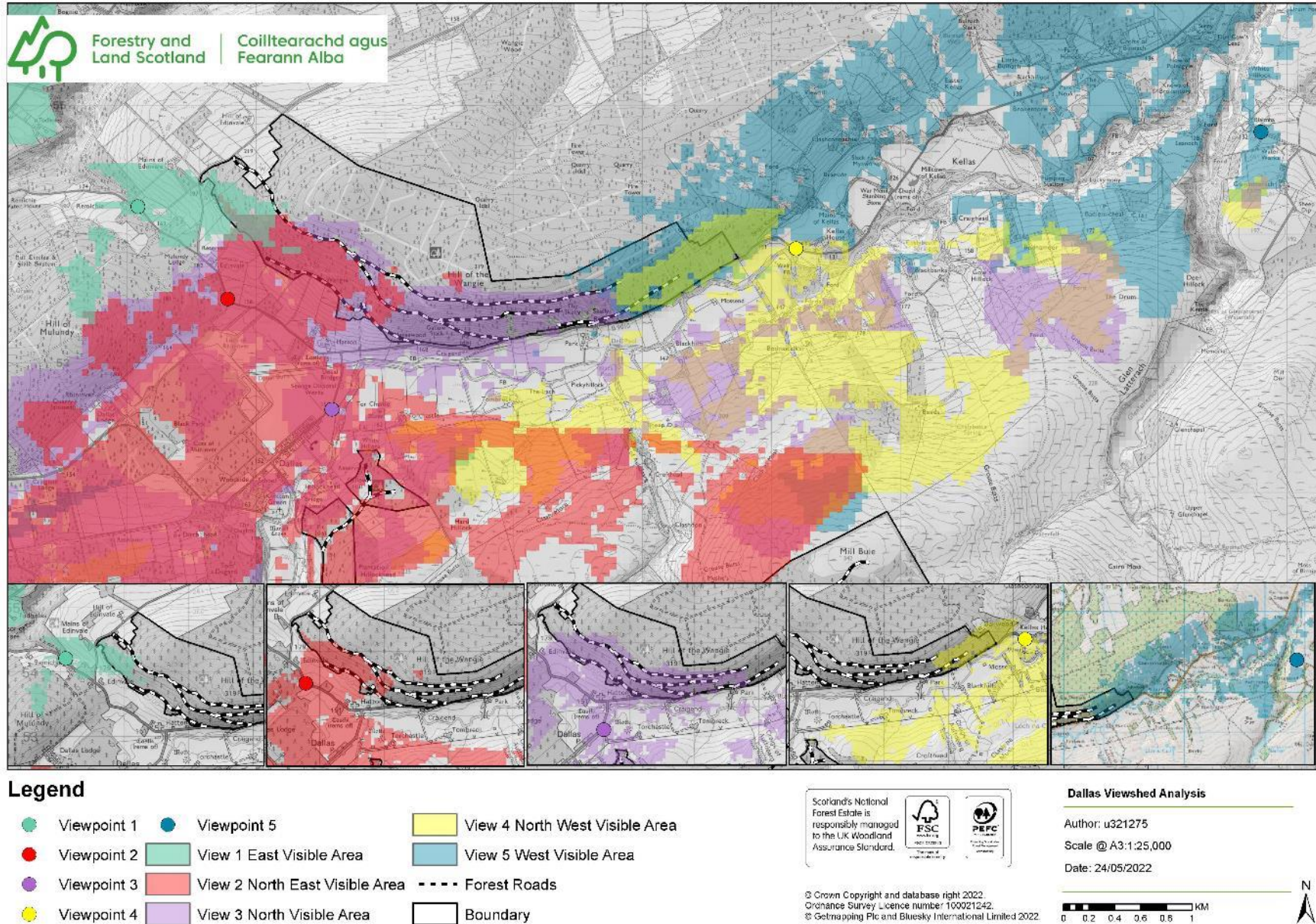


Figure 20: visibility assessment, where areas with a colour wash overlay have some degree of visibility to the surrounding landscape. Five viewpoints were selected.

8.2 Visualisations

The following visualisations cover the five view points, and each view point shows three different scenarios: (i) current species with the felling phases, (ii) future species (2023 and 2033) (iii) future species in autumn (2043).



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East Region Dallas

View View 1 East
Grid Ref: NJ 1108 5421
Date: June 2022

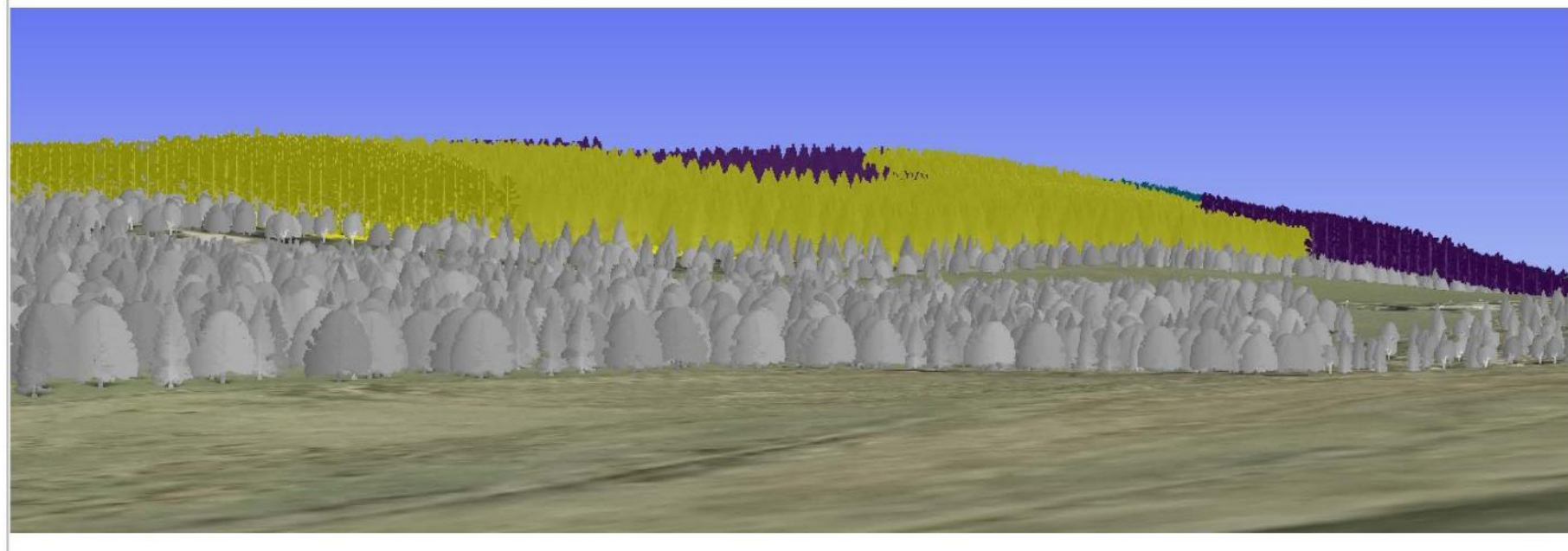
Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling Phases 2023

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

-  Felled or fell year requires review
-  Phase 1: < 5 years
-  Phase 2: between 5 and 9 years
-  Phase 3: between 10 and 14 years
-  Phase 4: between 15 and 19 years
-  Phase 5: between 20 and 24 years
-  Phase 6: between 25 and 29 years
-  Phase 7: between 30 and 34 years
-  Phase 8: 35 years and greater
-  Clearfell with seed trees
-  Low Impact Silviculture
-  Minimum Intervention
-  Natural Reserve
-  Long Term Retention
-  Other/Open land
-  Neighbouring woodland



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Forest Estate is
responsibly
managed to the
UK Woodland
Assurance Standard.





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East Region Dallas

View View 1 East
Grid Ref: NJ 1108 5421
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Visualisation of Future Habitat and Species

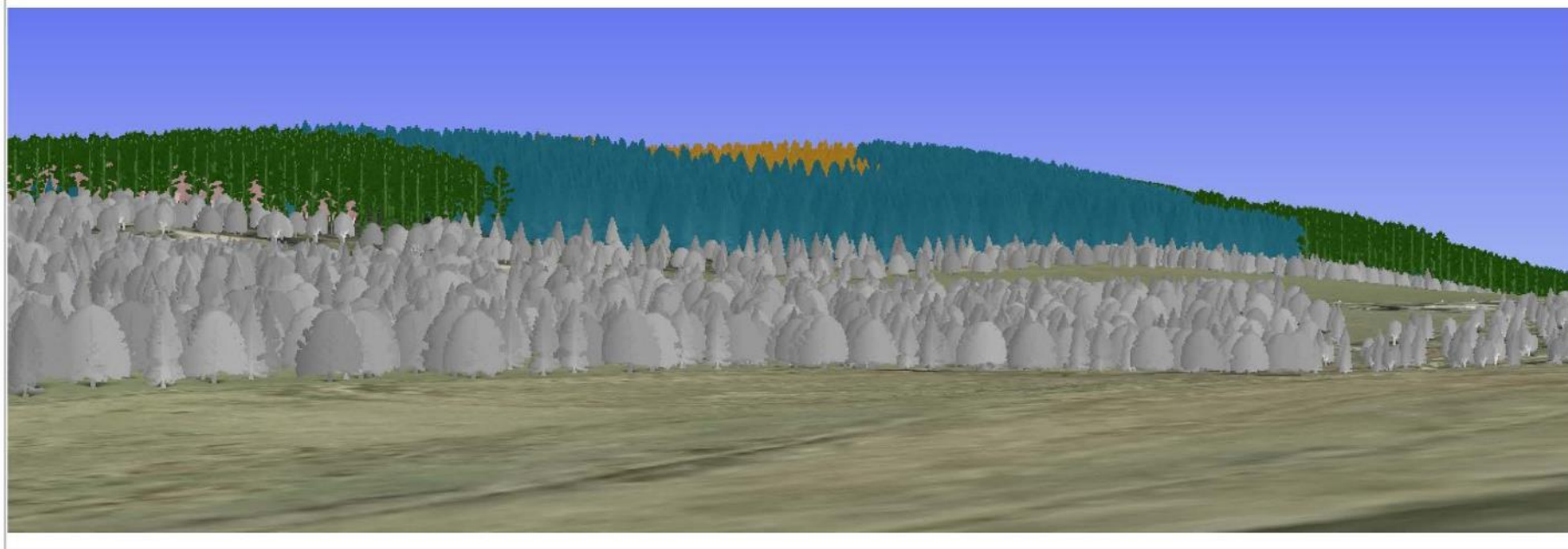
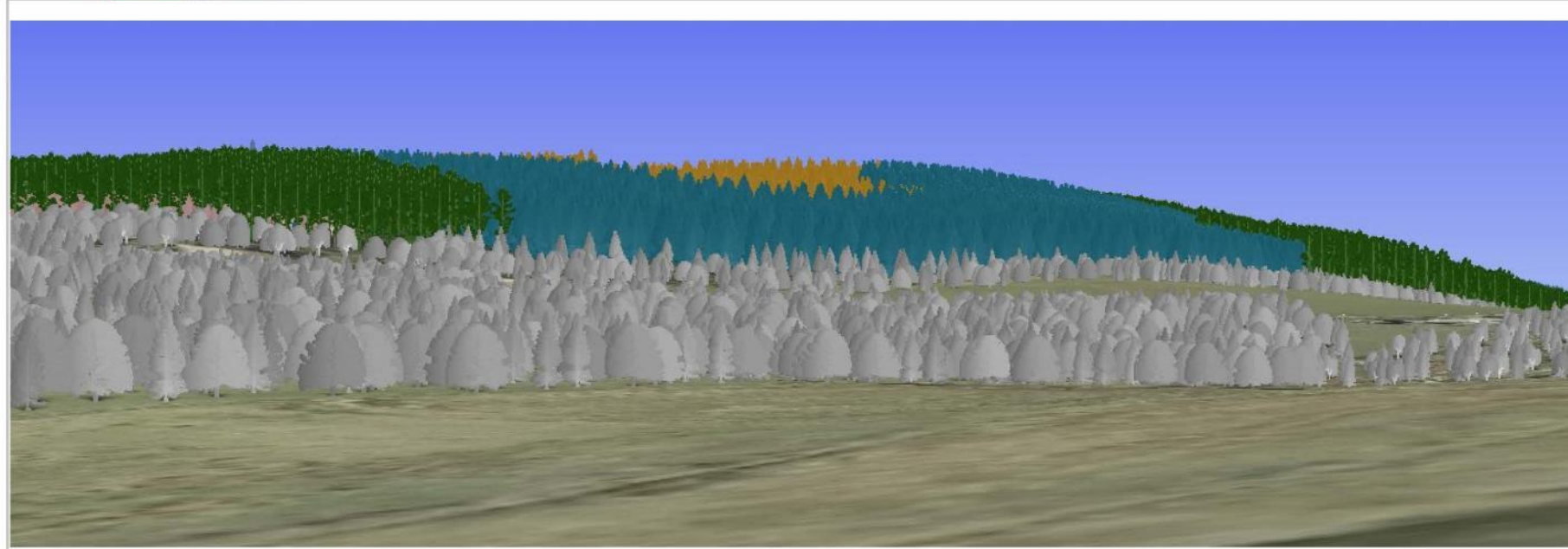
Visualisation year

Species 2023

Species 2033

Felling Phases have a rolling 5 year period and
for visualisations start on the date shown above.

-  Sitka spruce
-  Norway spruce
-  Scots pine
-  Lodgepole pine
-  Larch
-  Douglas fir
-  Mixed conifers
-  Ash
-  Oak
-  Beech
-  Birch
-  Mixed broadleaves
-  Neighbouring woodland



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Date: June 2022

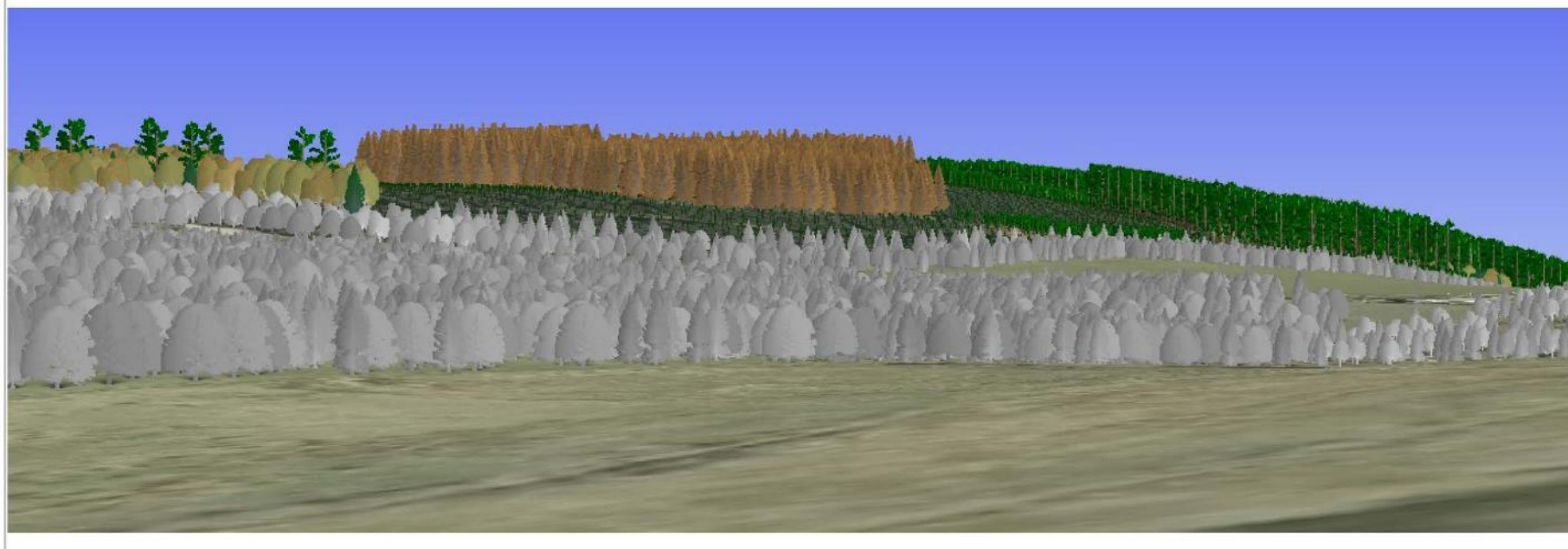
Visualisation of Future Habitat and Species

Visualisation year

Species 2043

Autumn 2043

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for visualisations start on the date shown above.



-  Sitka spruce
-  Norway spruce
-  Scots pine
-  Lodgepole pine
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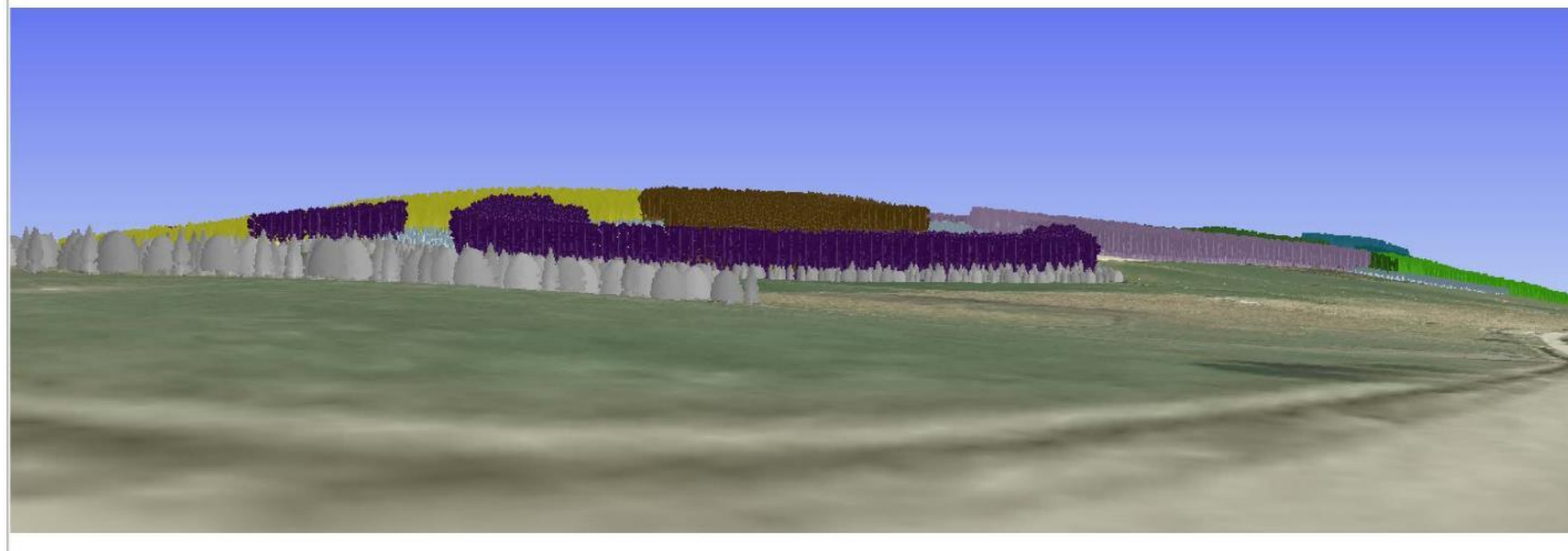
Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling Phases 2023

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-  Phase 6: between 25 and 29 years
-  Phase 7: between 30 and 34 years
-  Phase 8: 35 years and greater
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-  Minimum Intervention
-  Natural Reserve
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Visualisation year

Species 2023

Species 2033

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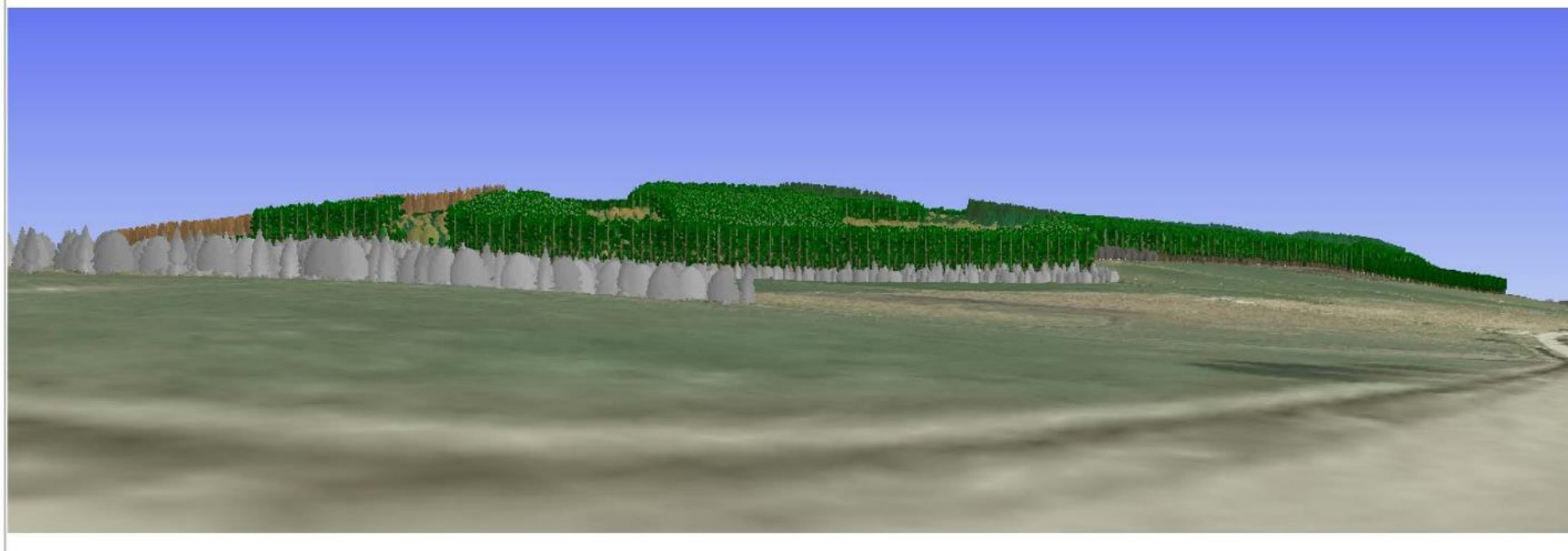
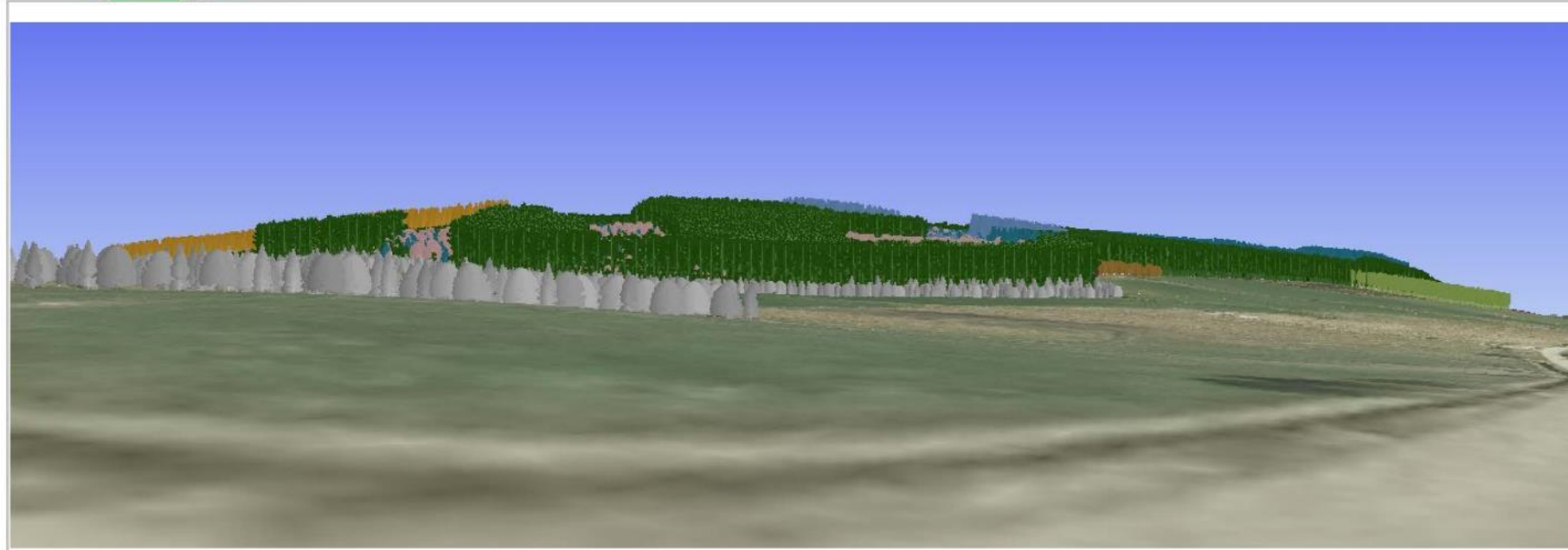
Visualisation year

Species 2043

Autumn 2043

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-  Norway spruce
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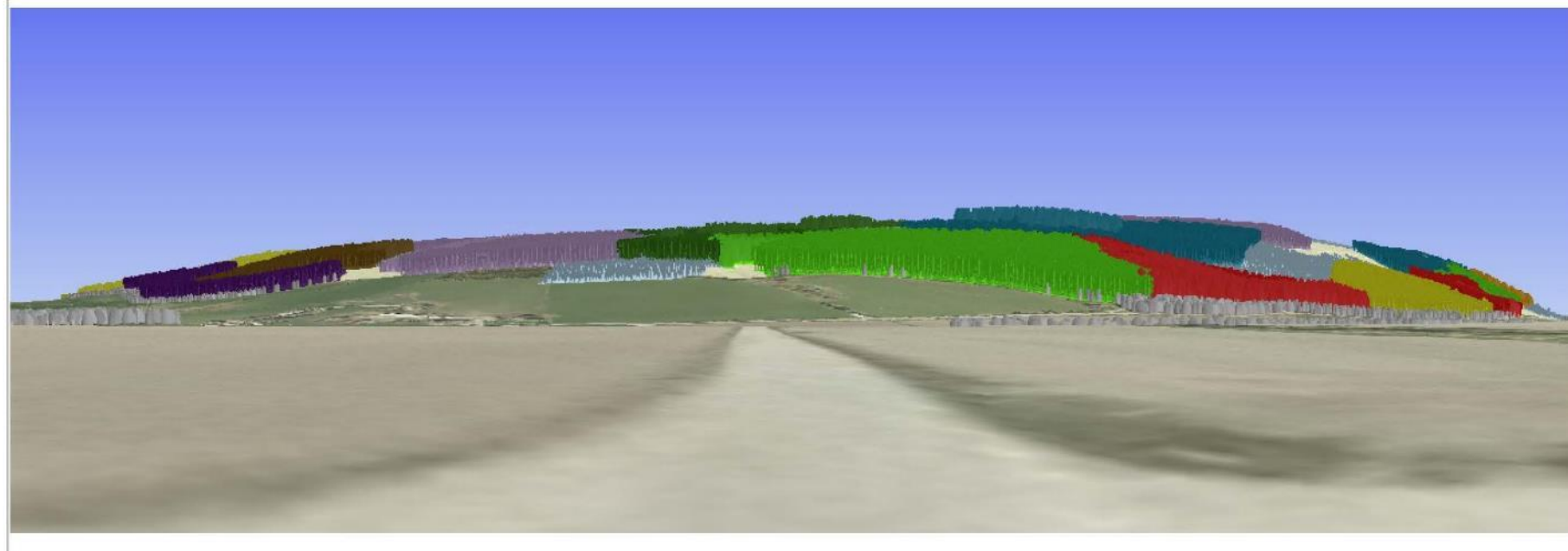
Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling Phases 2023

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Grid Ref: NJ 1257 5264
Date: June 2022

Visualisation of Future Habitat and Species

Visualisation year

Species 2023

Species 2023

Felling Phases have a rolling 5 year period and
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-  Norway spruce
-  Scots pine
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Visualisation of Future Habitat and Species

Visualisation year

Species 2043

Autumn 2043

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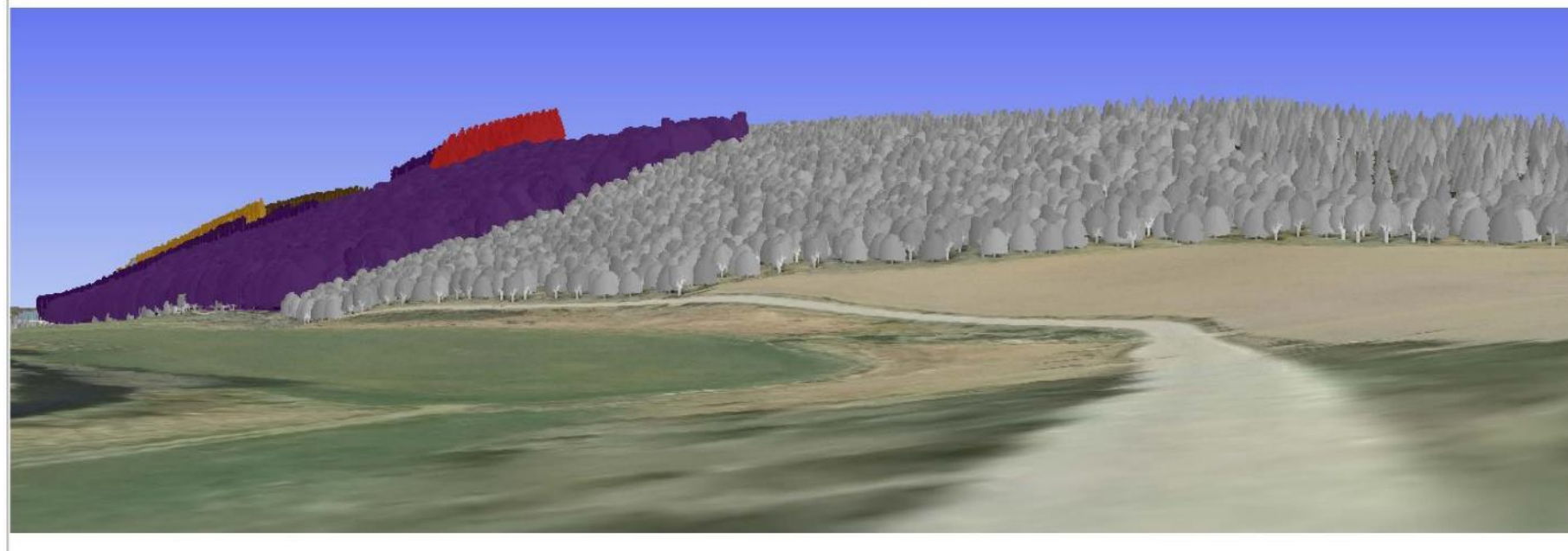
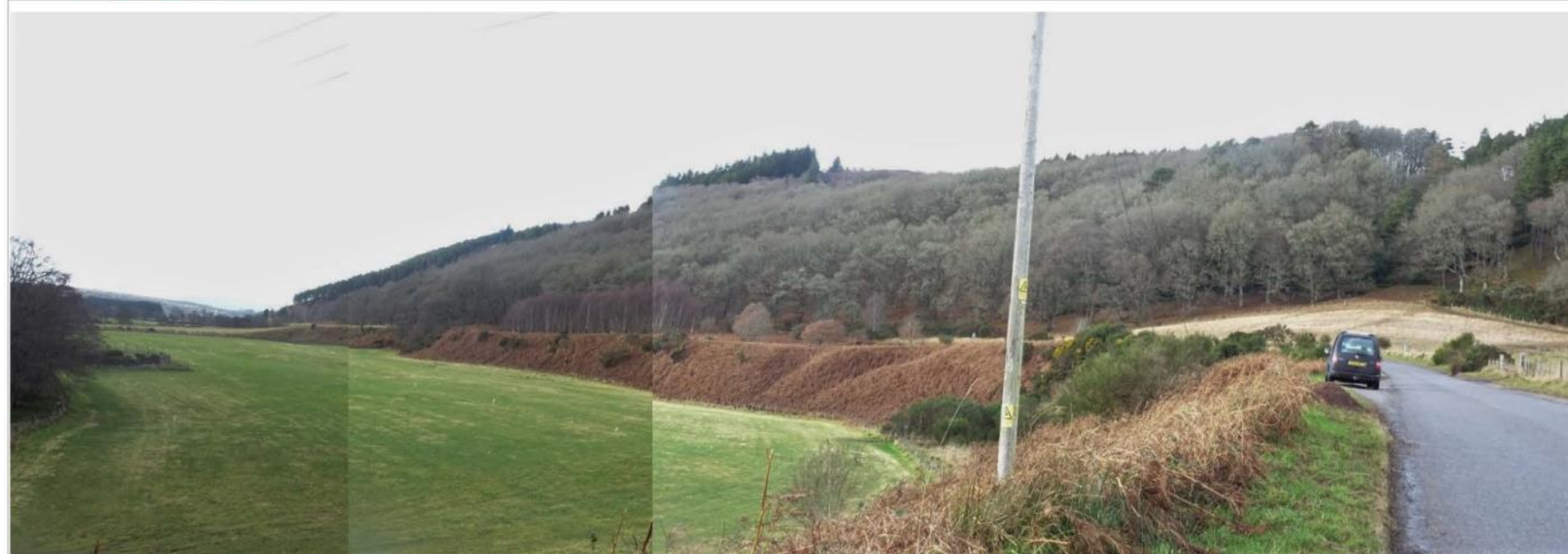
Visualisation of Felling proposals

Visualisation year
Photograph 2022

Felling Phases 2023

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- Phase 7: between 30 and 34 years
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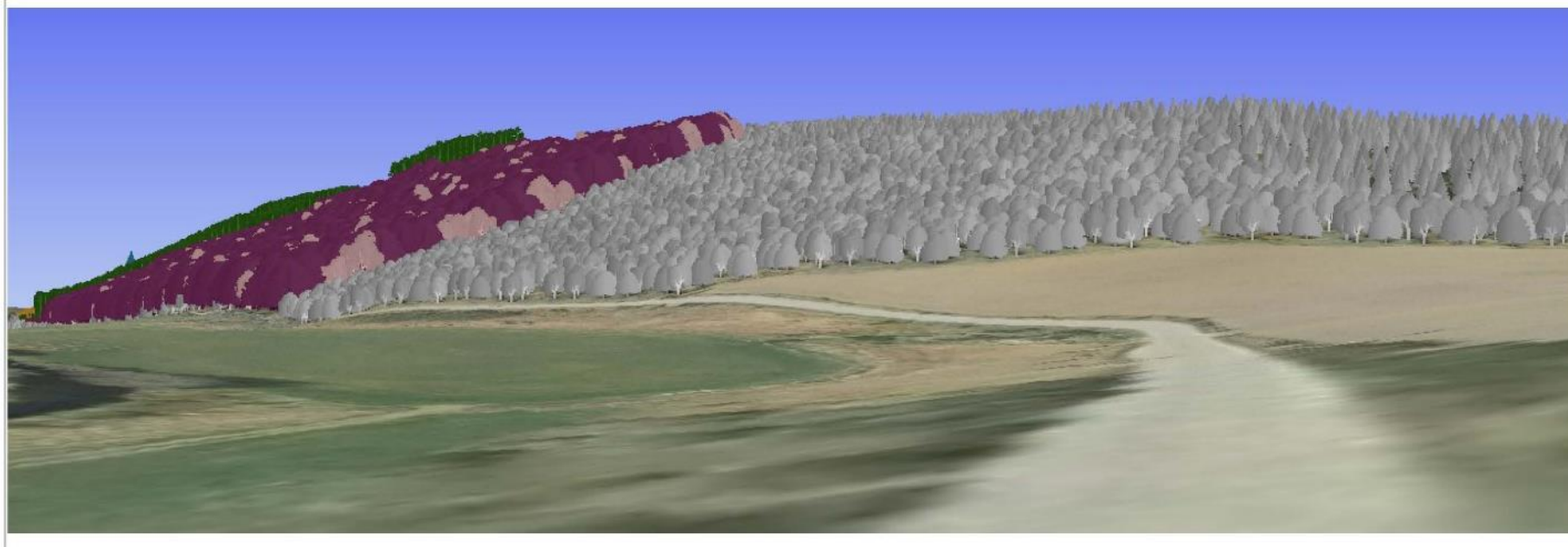
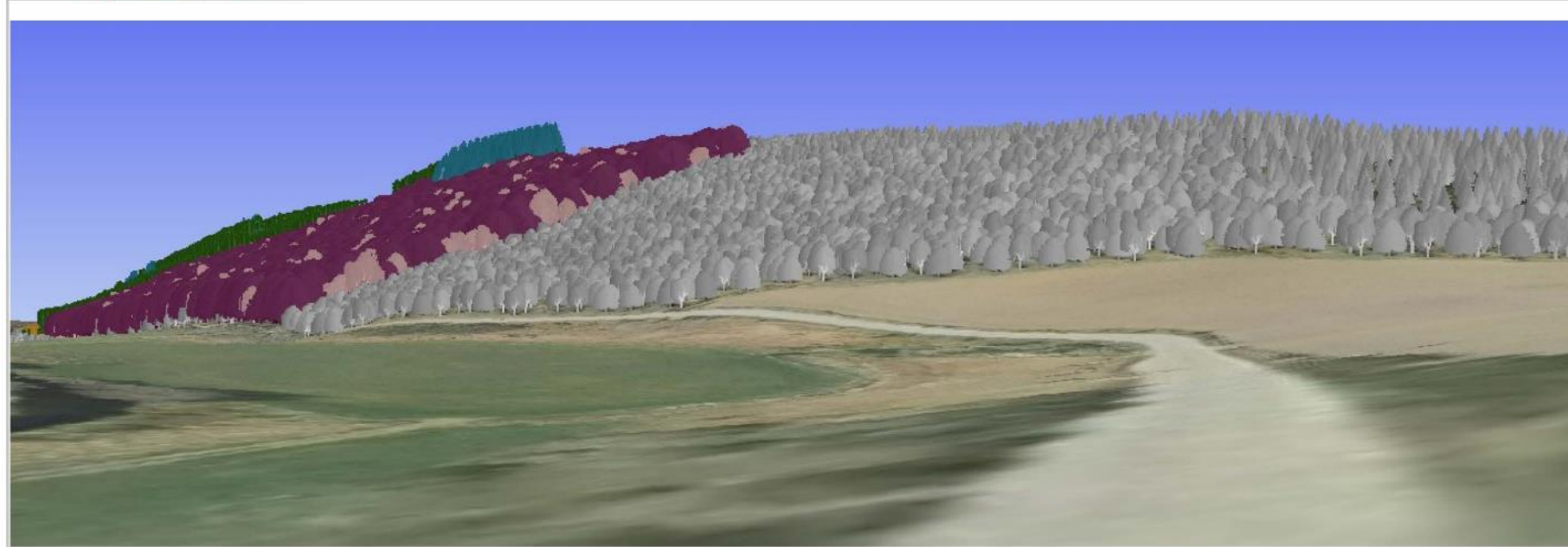
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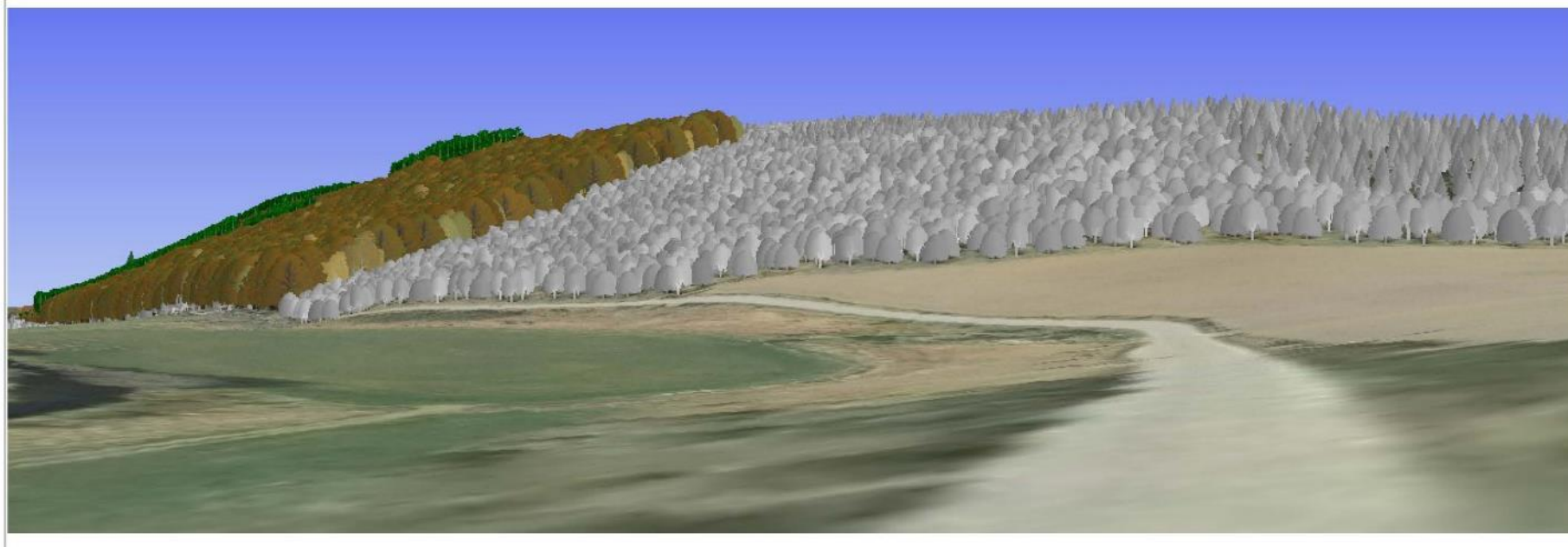
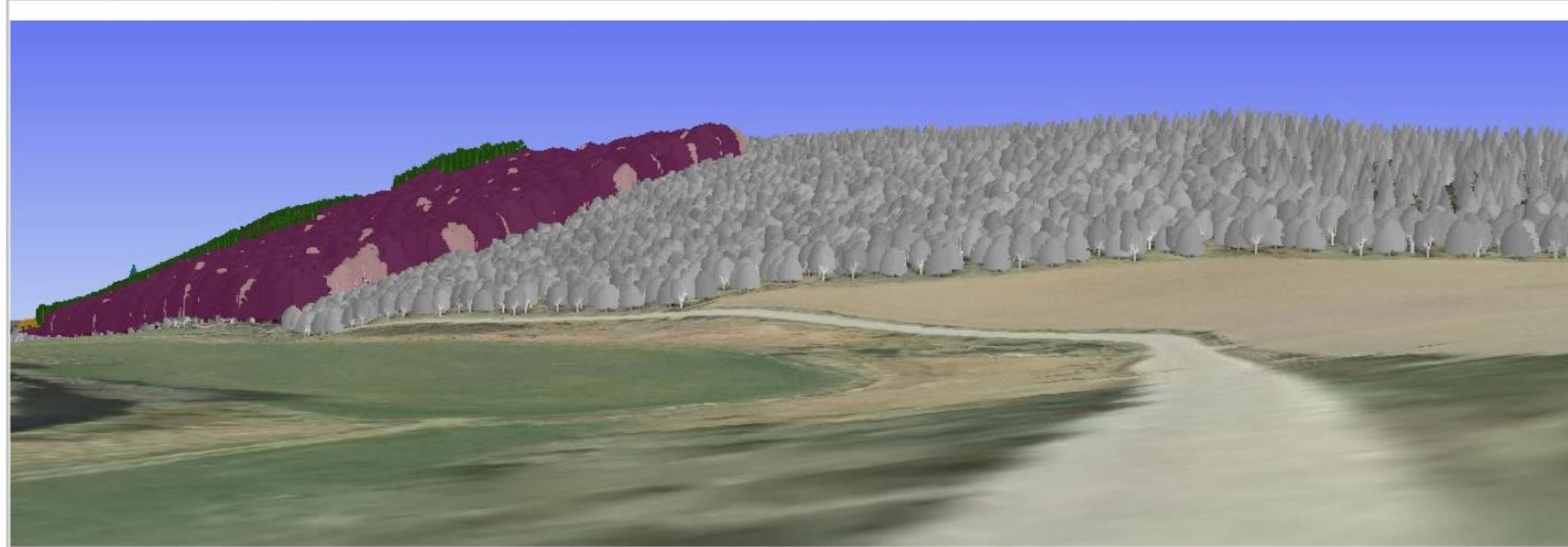
Visualisation of Future Habitat and Species

Visualisation year

Species 2043

Autumn 2043

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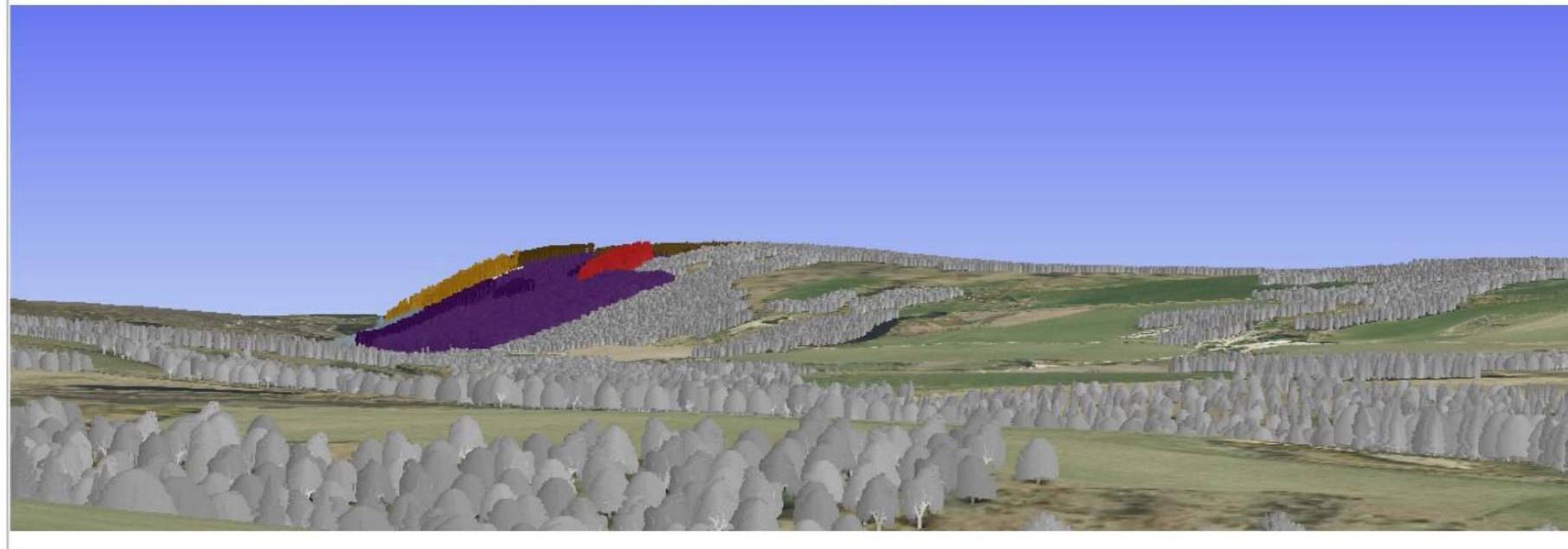
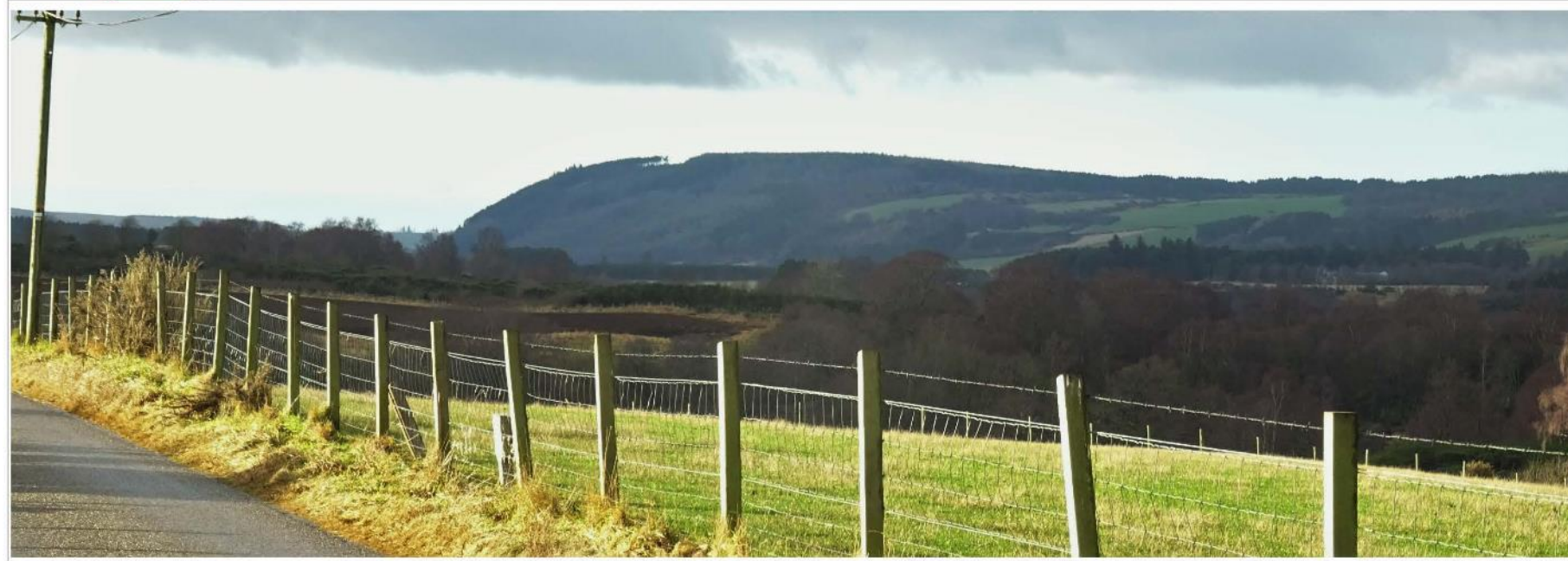
Visualisation of Felling proposals

Visualisation year
Photograph 2022

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East Region Dallas

View View 5 West
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Date: June 2022

Visualisation of Future Habitat and Species

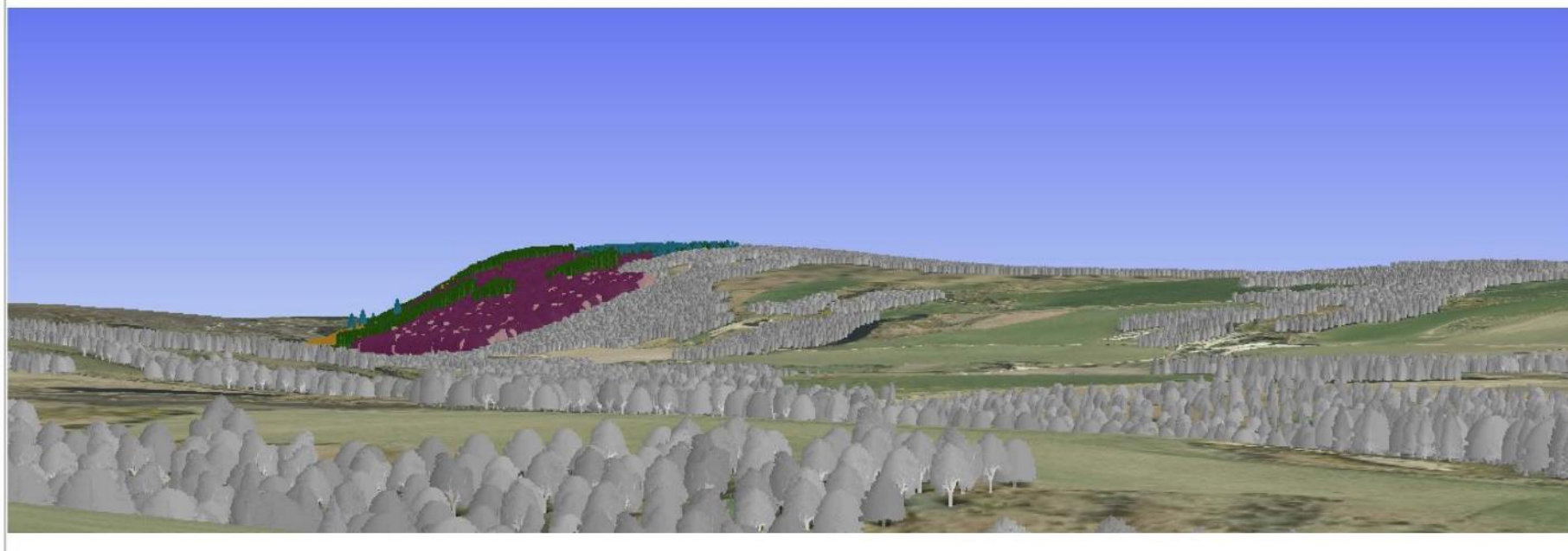
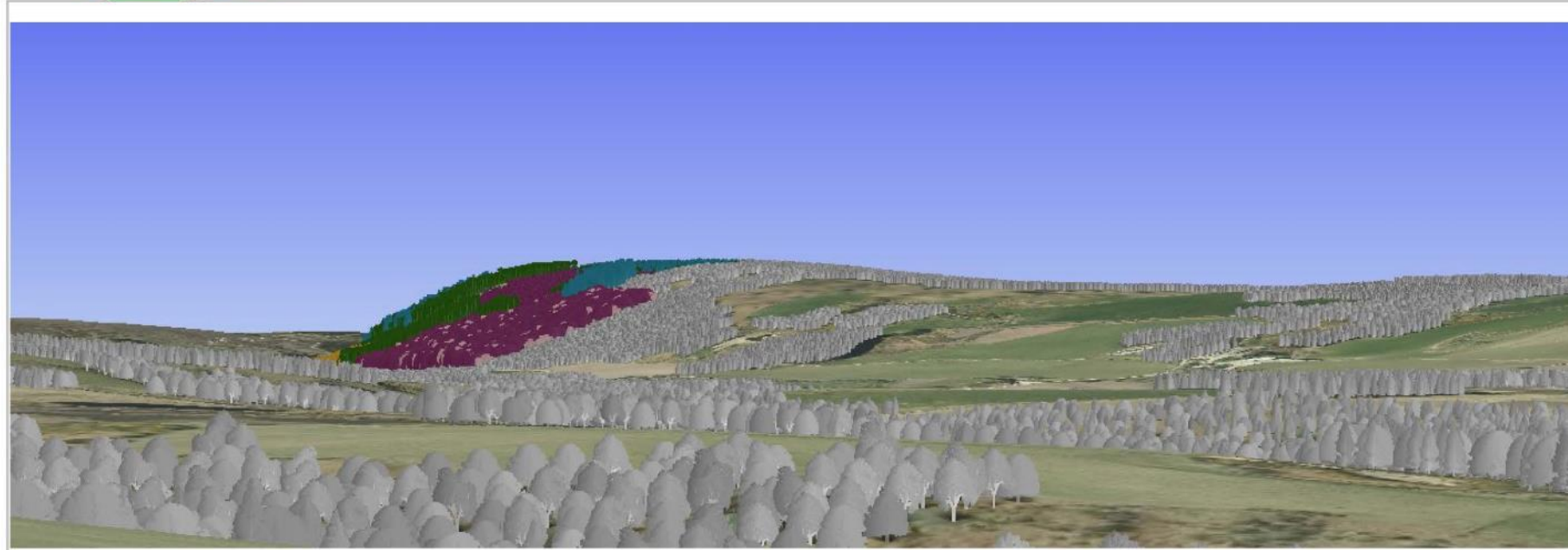
Visualisation year

Species 2023

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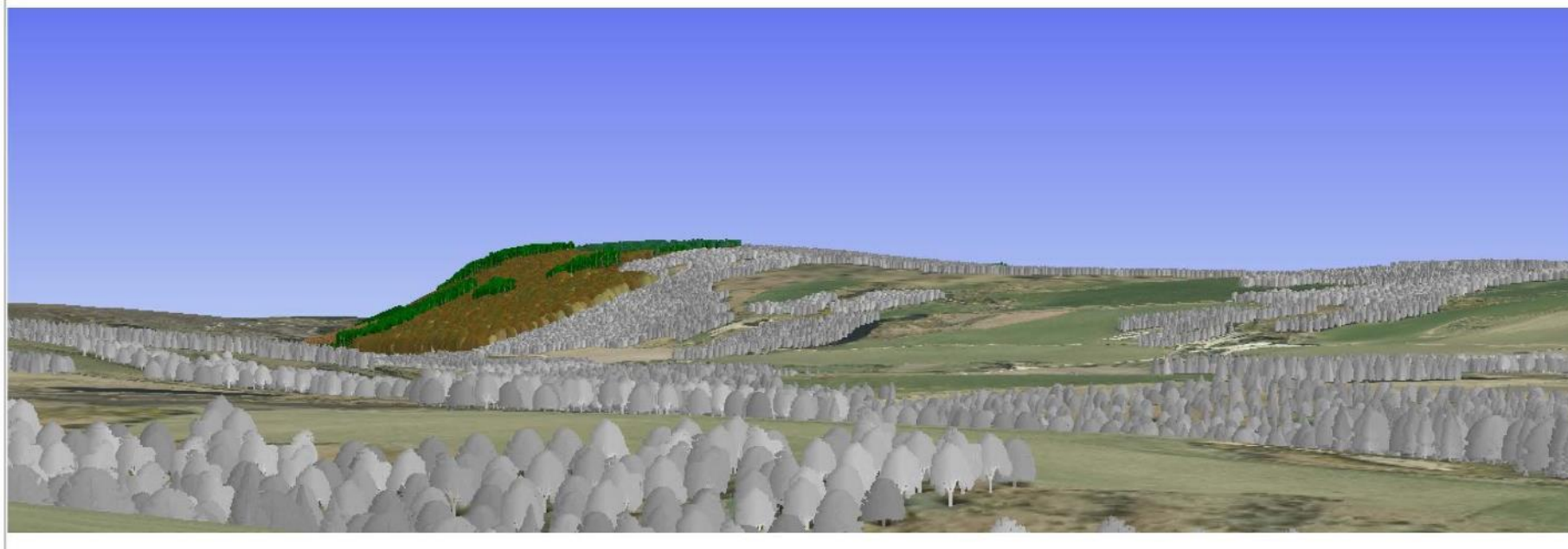
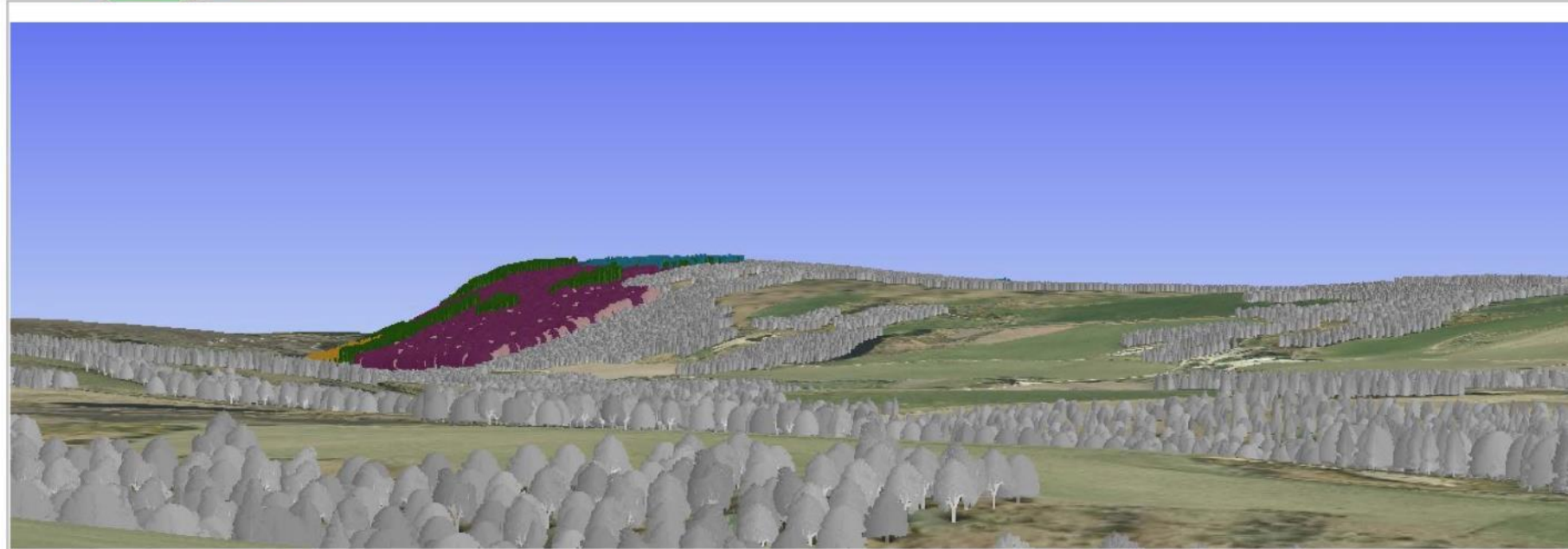
Visualisation of Future Habitat and Species

Visualisation year

Species 2043

Autumn 2043

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-  Sitka spruce
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9. Appendices

Appendix A. Statutory Consultation Record

A.1 External stakeholder engagement

During the development of the Dallas LMP, FLS consulted publicly with local community representatives and stakeholders known to have an interest in the plan area. Table 11, highlights the issues that were raised during the initial scoping process.

Table 11: initial community consultation.

Consultee	Issue raised	FLS response
Moray Council	No response to date.	
Scottish Environment Protection Agency (SEPA)	There are no water bodies within or adjacent to the plan area which are at “less than good” ecological status/potential as a result of forestry activities. The plan should highlight this fact, emphasising the importance of maintaining the good quality of the surrounding water environment. We note that you have identified that several of the watercourses flow into the River Lossie where there are areas that are vulnerable for flooding. If you consider this a significant issue then we recommend that you seek input from flood risk professionals in designing the scheme to deal with these issues. We also note that some of the plan area has deep peat. We would be supportive of any proposals for peatland restoration.	All issues raised have been noted and addressed in the plan where appropriate.
NatureScot (formerly Scottish Natural Heritage)	The area includes Kellas Oakwood SSSI. We have not visited the FLS section of the SSSI since the deer fence was erected. It would be useful to include an update on the site condition. We don't have any comments relating to the remainder of the area.	See Appendix D Kellas Oakwood SSSI.
Royal Society for the Protection of Birds (RSPB)	No response to date.	
Dallas Estate	There is a strip on land on the north side of Hillockhead where the ownership boundary between the estate and yourselves is unclear. Perhaps this would be a good opportunity to address this? The water supply for Ardoch Farmhouse rises in Hillockhead (near the line you have shown I think) but runs down the field not along the road. Dallas estate has a right of vehicle access along both tracks that go through Hillockhead but we accept that this does not cover haulage of timber using standard wagons and have recently entered a temporary permission agreement to haul timber and stack in Hillockhead. We do plan to do this again (perhaps in about 7 years) and we will continue to use our vehicle access to harvest birch from the area between your two woods and for shooting access. Finally, I was surprised to see most of Hillockhead shown as PAWS. I appreciate that it is on the Ancient Woodland Inventory but it is a Scots pine 'plantation'. I would be concerned if this area was for some reason not to be commercially managed due to this designation.	Issues noted and addressed in the plan or passed to land agents.
Kellas Estate	No response to date.	
Knochando Estate	No response to date.	
Roths Estate	'We continue to work together on deer control with regards the Mill Buie section of the management plan', 'access is becoming a little difficult as the roadside regen closes in, so some maintenance of this in the plan to allow long term access for all would be useful to aid deer control'.	Issue noted and passed to our wildlife ranger manager to take forward.
Heldon Community Council	No response to date.	
Confederation of Forest Industries (CONFOR)	No response to date.	
Scottish and Southern Energy (SSE)	No response to date.	
Moray Mountain Bike Club	Moray Mountain Bike Club would be keen to be involved in this exercise. I would stress that we do not hold accountability for any of the trails that FLS are aware of in the Hill of Wangle Woodland. We are however a voice for Mountain Biking and I would welcome any positive engagement with the Mountain Biking Community that would enable the responsible use of the woodland.	Issued noted and our visitor services team will reach an agreement where trails can be accepted.

Upon completion of the draft LMP, FLS consulted again, publicly with local community representatives and stakeholders known to have an interest in the plan area.

Table 12, highlights the issues that were raised during the final scoping process.

Table 12: Final community consultation

Consultee	Issue raised	FLS response
Moray Council Roads Maintenance	The main concern of Moray Council as a roads authority is that our roads do not suffer damage from extraordinary traffic associated with the felling of timber. The Landowner or Forest Manager should therefore establish contact with the Moray Council Roads Maintenance service at the earliest opportunity when the specific timber harvesting/haulage operations are being planned, but in no circumstance later than two months prior to the commencement of haulage, with indicative tonnage of timber to be extracted, access/egress points and proposed haulage route."	The Harvesting Forester and Forestry Civil Engineer will liaise with Moray Council Roads Maintenance to advise of timber operations in a timely manner.
Moray Council Strategic Planning & Development	The northern area of the Plan falls within the Pluscarden Valley Special Landscape Area (SLA). Proposals must not prejudice the special qualities of the designated area, as set out in the Moray Local Landscape Designation Review, and must minimise adverse impacts on the landscape and visual qualities that the area is important for. Careful consideration must be given to the timescales between felling and restocking to minimise impacts.	The design of coupe shapes, felling and restocking are sensitive to the designation and minimise adverse impacts on the landscape and visual qualities that the area is important for.
Scottish Water	"Scottish Water Assets: A review of our records indicates that the Gallow Hill area is the only area which will affect any Scottish Water assets. There are a couple of lengths of 4" raw water main within the boundary This should be confirmed however through obtaining plans from our Asset Plan Providers."	The presence of 4" raw water main within the boundary of Gallow Hill, if present will be mapped. All operation within the vicinity of any water supplies will be undertake using the UKFS and UKWAS water guidelines as the minimum standards.
SEPA	"We appreciate that the comments made in our letter of 11 Dec 2019 have been taken on board and if formally consulted by Scottish Forestry we would have no objection to this application. The only site specific comment would be to highlight that it is not clear that the issue we highlighted previously in relation to well has been taken into consideration in the design of the works."	All operation within the vicinity of any water supplies will be undertake using the UKFS and UKWAS water guidelines as the minimum standards.
NatureScot (formerly SNH)	"...reviewed the plan and, being content that the proposals in Appendix 2 Kellas Oakwood SSSI plan are appropriate for the SSSI, had no specific comments to make."	
RSPB	"The main species interest in the woodland is Capercaillie. Although there is no evidence of an active lek in the Dallas woods during recent times, there was evidence from 2014 of birds using the nearby Pluscarden lek. If you are aware of any current information regarding Capercaillie presence in this forest please let us know. The draft LMP could well benefit Capercaillie plus a range of other biodiversity and ecosystem services. RSPB Scotland are specifically supportive of; - high percentage of Scots Pine - felling of smaller coups rather than clear-fell - proposed peatland and native pine woodland restoration at Hillockhead and Mill Buie"	Request passed to environment team for response but there has been no sightings of Capercaillie within the wood for a number of years.
Dallas Estate	No response to date.	
Kellas Estate	No response to date.	
Knochando Estate	No response to date.	
Roths Estate	No response to date.	
Heldon Community Council	No response to date.	
CONFOR	No response to date.	
SSE	No response to date.	
Moray Mountain Bike Club	No response to date.	
Members of public (from posters put up at forest entrances.)	"The mountain bike trails on the hill are essentially the only local "facility" we have in and around the village." "Great to hear you want to converse with the MTB community and I do appreciate you have a job to do." "There is one place though that has the best trails in Moray the jewel in the crown and that is Dallas." "I would like to support the development of mountain biking in the area and would like to offer any support required to help develop and improve the area for MTB that would still enable the production of sustainable timber production." "One thing I would like to see in some forestry areas would be joining up of tracks,..., so that they could then be used by walkers etc."	All comments (5) passed to visitor services team for information on level of usage and appreciation for mountain biking facilities. There will not be any additional tracks or roads built within the period of this plan so no opportunity to join tracks to make circular routes.

Appendix B. Background information

B.1 Topography

The elevation of the plan area runs from approximately 150 metres at the base of the Wangie slope up to approximately 360 metres at the top of Mill Buie (Cairn Uish). Wangie is located on the steep south facing slope of the Hill of the Wangie. Hillockhead and Gallow Hill are on the much gentler north west, west and south west facing slopes on an un-named hill overlooking the River Lossie Valley. Mill Buie is on the gentle south west facing slopes of both Cairn Uish and Mill Buie hills.

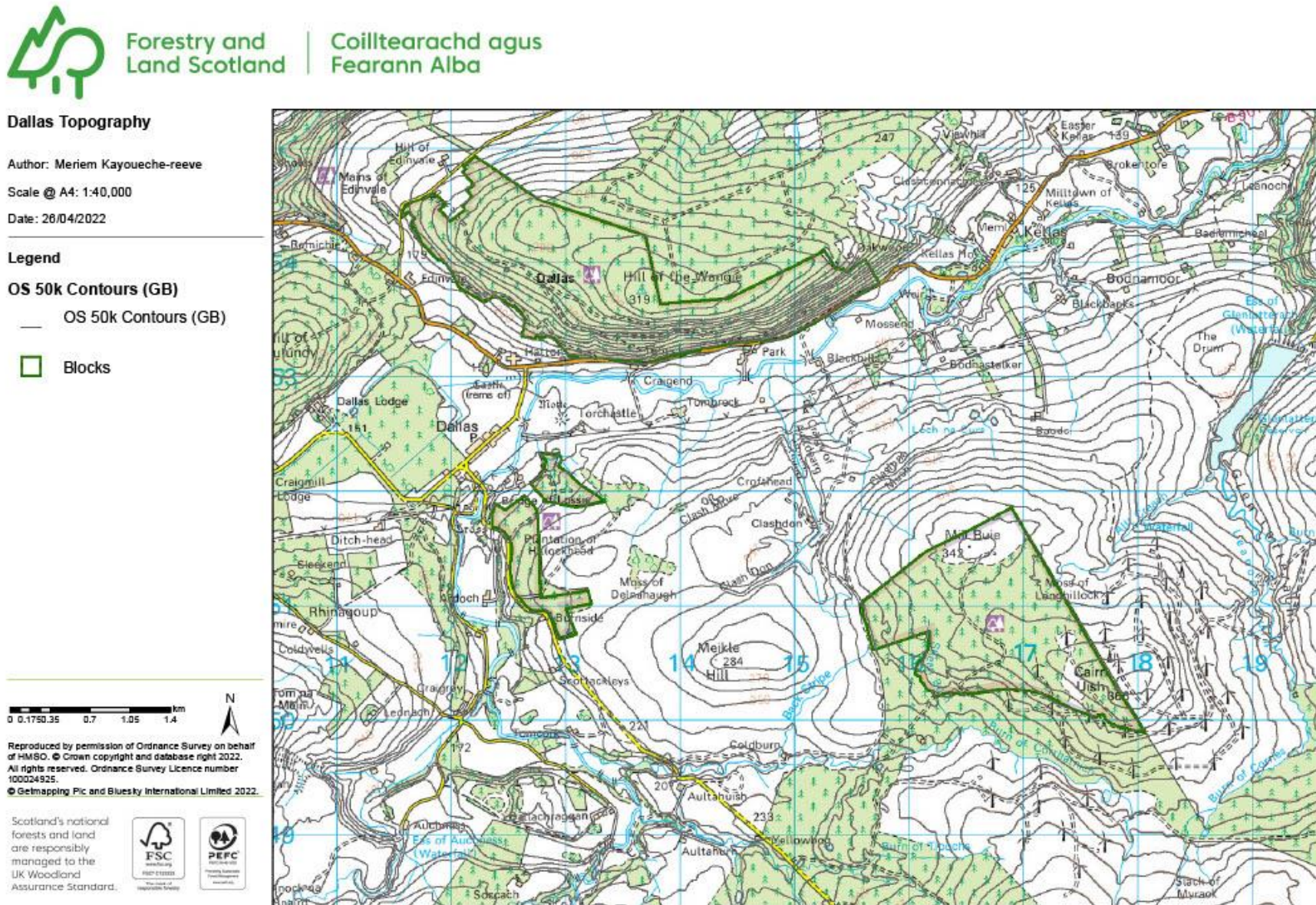


Figure 21: topographic map of the Dallas blocks.

B.2 Geology and soils

B.2.1 Geology

According to the British Geological Survey the majority of the plan area is underlain with Psammite, a fine-grained, fissile, clayey sandstone. This is overlain by a drift geology of mostly Diamicton till, which is a terrigenous (resulting from dry land erosion) sediment that is poorly sorted and contains particles ranging in size from clay to boulders, suspended in a matrix of mud or sand.

These geological conditions lead to soils with low levels of nitrogen available for tree growth.

B.2.2 Soils

Approximately a third of the plan area where soil surveys have been completed have typical podzol soil with about equal portions of podzolic brown earth, ironpan soil, intergrade ironpan soil and podzolic gley. These soils have a wide range of moisture regimes from very wet through to slightly dry and nutrient regimes that run from very poor to rich. These factors influence the species of trees that will grow successfully in these woodlands. For further information see [Bulletin 124, An Ecological Site Classification for Forestry in Great Britain](#).

B.3 Climate

The climate data for the design plan area is obtained from the Ecological Site Classification system (ESC). The results of interrogating this system gave the following data (Table 13).

Table 13: climate data for the Dallas LMP area.

Accumulated Temperature above 5°C (AT5)	Detailed Aspect Method of Scoring (DAMS) wind exposure	Moisture Deficit (MD)
857 – 1106 (cool)	9 – 17 (sheltered – highly exposed)	48 – 103 (Wet – Moist)

AT5 is the accumulated total of the day-degrees above the growth threshold temperature of 5°C, which provides a convenient measure of summer warmth. The results for AT5 place the Dallas LMP area in the cool zone.

DAMS is the Detailed Aspect Method of Scoring. This represents the amount of physically damaging wind that forest stands experience in the year. The range of DAMS is from 3 to 36 and windiness is the most likely limiting factor to tree growth at higher elevations in Britain. The results place the Dallas LMP area between being sheltered to highly exposed site.

MD is the Moisture Deficit for the area. Moisture deficit reflects the balance between potential evaporation and rainfall and therefore emphasises the dryness of the growing season (rather than the wetness of the winter or whole year). These results place the Dallas LMP area on the boundary between the “wet” and “moist” zones.

Each tree species has tolerances for these and other factors and they can be used to identify species suitable for the site conditions. The results above will be used to help assist in the choice of tree species for restocking in this plan.

Further information on these criteria and the application of ESC can be found in [Forestry Commission Bulletin 124 - An Ecological Site Classification for Forestry in Great Britain](#).

B.4 Wind throw risk

The wind throw risk is measured by the DAMS score for the forest area. The results of this are shown on the map below. This indicates that, as you would expect, the areas at the tops of the blocks are most exposed and therefore more liable to wind throw. This information will be taken into account when felling coupes are planned and LISS prescriptions are to be implemented to reduce the potential impacts.

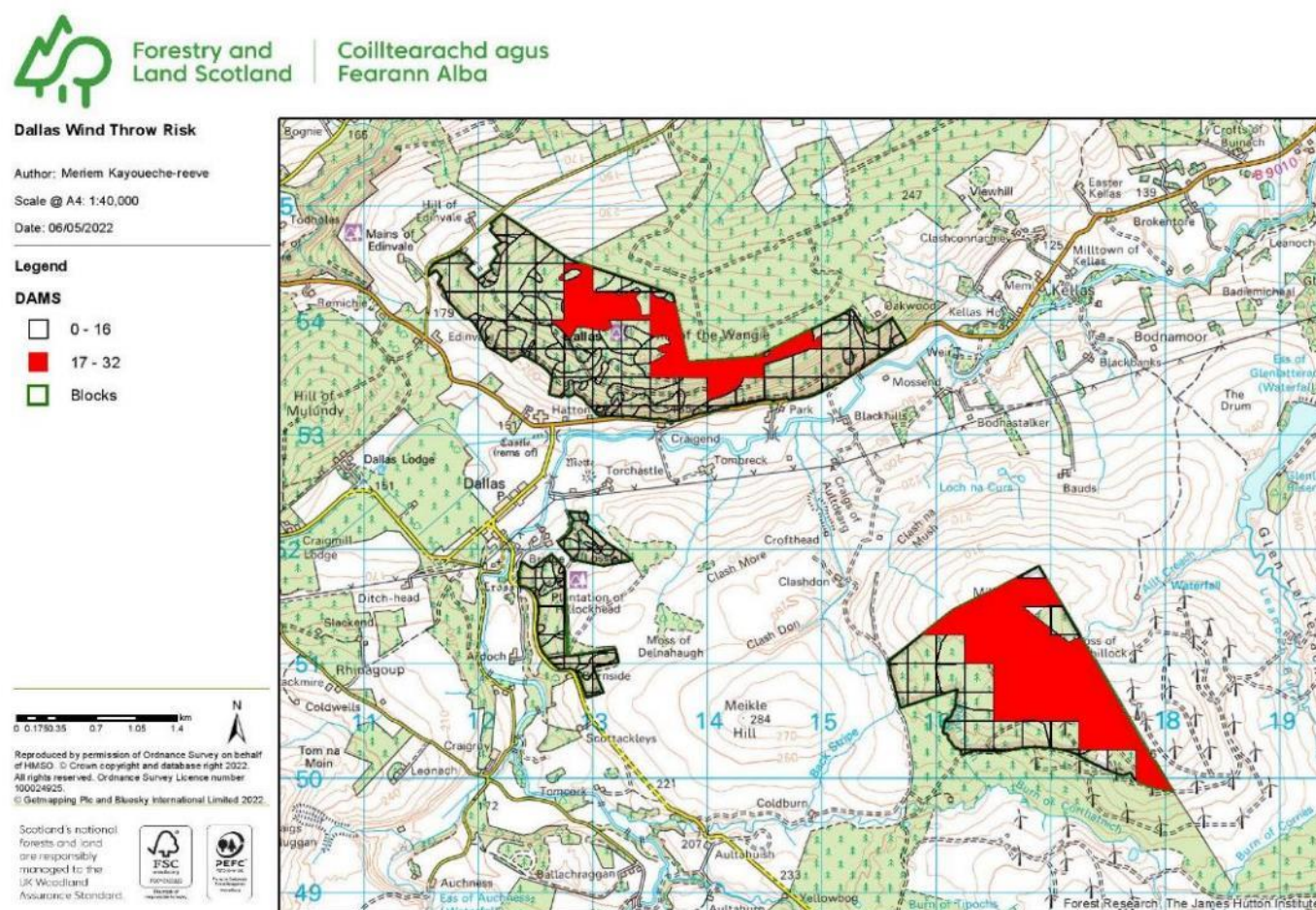


Figure 22: the tops of Hill of the Wangie and Mill Buie are both highly exposed.

B.5 Hydrology

The Dallas LMP area is within the catchment for the River Lossie, although they make up a very minor (2%) proportion of the total catchment area. FLS managed land makes up approximately 9% of the catchment when other LMP areas are included. The scale of the LMP area within the catchment means any proposed harvesting operations will have a negligible impact on increased runoff and flood risk in the downstream PVA.

There are two private water supplies that are supplied from within the woodland area. One in Hill of the Wangie and another in Hillockhead. Both will be protected during any operations by following the UKFS guidelines for forests and water as a minimum.

According to the SEPA website there is a PVA to flooding downstream on the River Lossie from the plan area. This area is PVA 05/05 Elgin. The main flood risk is associated with the River Lossie on the city of Elgin including 140 residential properties, 110 non-residential properties and associated infrastructure. The PVA report does not highlight natural flood management studies or works as an action that will have a major impact on alleviating the flooding threat. However all forest operations will be undertaken in accordance with the forest and water guidelines to ensure no

additional flooding risk is created. If opportunities present themselves to undertake work to help alleviate flood risks during the course of operations these will be discussed with the relevant flood management authority and undertaken if appropriate.

B.6 Adjacent land use and landscape

The Dallas forest blocks are surrounded by three primary land uses: forest, agriculture with small scale woodland and moorland. Forest dominates north of Hill of the Wangie, and moorland to the east of Hillockhead and west of Mill Buie. To the south-east of Mill Buie there is a proposed extension to the Rothes windfarm.

Hill of the Wangie, Gallow Hill and part of Hillockhead fall within the Pluscarden Valley Special Landscape Area, as set out in [the Moray Local Landscape Designation Review](#). The design of coupe shapes, felling and restocking are sensitive to the designation and minimise adverse impacts on the landscape and visual qualities that the area is important for.

B.7 Biodiversity and habitat

Kellas Oakwood SSSI is partially within the Hill of the Wangie block and includes areas of ancient woodland. The site is recovering due to management following the erection of a deer fence, to reduce browsing pressure and the control of non-native trees and scrub. Seed collected from the oak wood provides plant material which has been used to expand native woodland to the west.

Hillockhead is a PAWS site and the Scots Pine crop is managed under a LISS prescription. Large parts of the Hill of the Wangie and Hillockhead are LEPO.

Open habitat of interest is restricted to the failed conifer planting on Mill Buie which is now predominately Upland Heath with areas of priority habitat, Blanket Bog. Soils surveys indicate that Mill Buie has an area of deep peat suitable for restoration, see Appendix E.

A number of small watercourses flow from the Hill of the Wangie and Hillockhead directly into the River Lossie.

There are a number of Scottish Biodiversity Action Plan species and FLS Key Species recorded in the Dallas LMP area:

- Capercaillie have been recorded on the Hill of the Wangie and there is a historic lek 200 m from the eastern boundary of the block.
- Black and Red Grouse are important consideration at Mill Buie. A Black Grouse lek is recorded 1 km south-south-east of the block. Heather management is on-going on Mill Buie within the lease agreement with the windfarm developer.
- Red Squirrel are recorded throughout the woodlands that comprise the Dallas LMP area, along with records of numerous Badger setts.
- A number of woodland raptors are recorded within the Dallas LMP area.

B.8 Historic environment

There are a wide range of unscheduled sites across the forest, some of which have been known of for some time and others discovered more recently through pre-operation site checks and surveys carried out by a local archaeologist.

B.9 Plant health

B.9.1 Large Pine Weevil (*Hylobius abietis*)

The Large Pine Weevil (*Hylobius abietis*) can cause extensive feeding damage to young trees used to restock clearfell sites, but damage is often highly variable. This species lays its eggs in deadwood/stumps on clearfell sites and the emerging adults feed on the bark of young trees, often with devastating effect on newly planted conifer crops.

The *Hylobius* Management Support System (MSS) is based on a simple monitoring protocol using billet traps to measure *Hylobius* numbers on individual clearfell sites. The numbers recorded are used, with other information entered into the *Hylobius* MSS software, to determine the best way to manage clearfell sites for successful, cost effective and environmentally friendly restocking. This Support System will be used along with past results and experience to determine the optimal time to restock while minimising the use of chemicals.

Restocking has traditionally taken place within two years of sites being clearfelled. However, many seedlings were badly damaged or killed by the *H. abietis*. In order to “reduce the use of insecticides where feasible” restocking is planned to take place at the end of year two. Restocking may take place up to four years following felling if monitoring, using MSS shows that it is expected that there will be a high level of *H. abietis*.

B.9.2 Ash Dieback

Ash dieback is an aggressive fungal disease and is caused by *Hymenoscyphus fraxineus* (previously *Chalara fraxinea*). The disease causes leaf loss and crown dieback in affected trees, and usually leads to tree death. There will be no planting of ash trees as there is currently a moratorium on its planting within FLS woodlands to try and help slow the spread of the disease. However as this disease is endemic to the wider environment no action will be taken regarding mature established trees that contract the disease beyond felling for safety reasons in areas with high recreation use.

B.9.3 Fungal plant pathogen *Phytophthora ramorum*

Phytophthora ramorum is a fungus-like plant pathogen which attacks a wide range of tree and shrub species. European and Hybrid Larch are particularly susceptible to *P. ramorum* but current evidence indicates that the impact of the disease is greatest on Japanese Larch, which can die within one to two seasons, with consequential economic, environmental and amenity impacts. Therefore there is currently a moratorium on the

planting of Larch within FLS woodlands to try and help slow the spread of the disease. We will try to retain existing Larch stand where practical to maintain the species diversity within the Dallas blocks.

B.9.4 Fire

The fire risk in the Dallas LMP area is presently manageable. However given the fairly high recreational use combined with predicted climate change this plan will take into account options to mitigate fire risk and facilitate fire control.

Appendix C. Tolerance Table

Table 14: Scottish Forestry approved tolerance table.

	Adjustment to felling period	Adjustment to felling coupe boundaries	Timing of restocking	Change to species	Changes to roadlines	Designed open space	Windblow clearance
SF approval not normally required	Fell date can be moved within 5 year period and between phase 1 and phase 2 felling periods where separation or other constraints are met.	Up to 10 % of coupe area.	Normally up to 2 planting seasons after felling. Where <i>Hylobius</i> levels are high, up to four planting seasons after felling subject to the wider forest and habitat structure not being significantly compromised.	Change within species group e.g. conifers, broadleaves.	NA	Increase by up to 5% of coupe area	NA
SF approval by exchange of letters and map	NA	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 60 m 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
SF approval by formal plan amendment may be required	Advanced felling (phase 3 or beyond) into current or 2nd 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

FLS will normally seek to map and identify all planned tree felling in advance through the LMP process. However, there are some circumstances requiring small scale tree felling where this may not be possible and where it may be impractical to apply for a separate felling permission due to the risks or impacts of delaying the felling. Felling permission is therefore sought for the LMP approval period to cover the following circumstances:

- Individual trees, rows of trees or small groups of trees that are impacting on important infrastructure (as defined below*), either because they are now encroaching on or have been destabilised or made unsafe by wind, physical damage, or impeded drainage.

*Infrastructure includes forest roads, footpaths, access (vehicle, cycle, horse walking) routes, buildings, utilities and services, and drains.

The maximum volume of felling in exceptional circumstances covered by this approval is 75 cubic metres per LMP per calendar year. A record of the volume felled in this way will be maintained and will be considered during the five year LMP review.

Appendix D. Kellas Oakwood SSSI plan 2022-2031



D.1 Overall Management Aims and Objectives

The overall objective for Kellas Oakwood SSSI is to protect the site and to maintain or where necessary, enhance the special features of the site. In essence, the key aim for Kellas Oakwood will be to reduce browsing pressure and competition from non-native tree and shrub species by maintaining the existing deer fence and removing non-native tree and shrub species to promote natural regeneration of Oak, Birch and other native species.

D.1.1 Designated Sites covered by this appendix

Figure 11 outlines the location of Kellas Oakwood, detailed in Table 15 in relation to the LMP boundary and the SNFL management area.

Table 15: key details of the designated site, Kellas Oakwood SSSI.

Designated site name	Site code	Site type	Area of designated site (ha)	Area within this LMP (ha)	Area with in this LMP (%)	Annex containing NatureScot site documentation
Kellas Oakwood	829	SSSI	25.9	8.5	32.8	Annex 1

Kellas Oakwood lies to the east of the village of Kellas on a steep slope with a south-east aspect. For further detail on the designation refer to the NatureScot documentation detailed in the table, which refers to the entire designated site area. The remainder of this plan will refer in detail to the element of the designated sites on the SNFL. The SSSI occupies 8.5 ha of the SNFL at the eastern end of the Hill of the Wangie. The designated Oakwood extends east onto Kellas Estate.

D.1.2 Features on the SNFL and condition

Only features that exist on the SNFL within this LMP are listed in the table below (Table 16).

Table 16: features and condition of Kellas Oakwood SSSI.

Site type	Site code	Feature description	SCM condition (Date assessed)	Condition on SNFL	Management classification (if relevant)
SSSI	829	Upland Oak Woodland	Unfavourable (30/04/2018)	Recovering	

Kellas Oakwood is one of only a few acidic oak woods in the north east of Scotland. The woodland is classified as ancient and semi natural. The earliest record of management is from 1798 when it was managed as Oak coppice.

It is understood that subsequently there was little management intervention. Part of the area was acquired by the Forestry Commission from the Dallas Estate in 1946. Soon afterwards in 1952 the mature Oak on the upper slope was under planted with Douglas Fir. The lower slopes which had contained only a scatter of Oak stems had been planted earlier by the Estate using Douglas Fir in 1933.

Thirty years later, in recognition of the conservation value of the wood, under planted conifers were removed and cut to waste to release the now restricted Oak crop. Birch which had grown up with the conifers was left to supplement the Oak. Subsequently in 1984-85, the older Douglas Fir on the lower slopes was clear felled. The felled area was not replanted to provide scope for Oak natural regeneration. The scattered mature Oak were left though 8 were felled and stumps individually fenced to prevent browsing of any coppice shoots.

Cuttings were taken from the first year's coppice growth and after rooting were potted by Forestry Commission research staff at Newton. In November of the same year, 165 potted oak seedlings were planted in 9 separate groups, varying from between 14 and 25 plants per group. In 1990, 105 of these seedlings were still growing well. This planting pattern was adopted to provide a wide diversity of age structure throughout the rehabilitation period. Tree shelters were used to identify and protect the young trees from browsing. Naturally regenerated seedlings which were already growing on the site were hand weeded and tree shelters were placed over the plants.

In November 1990, the Forestry Commission took advantage of a good seed year and collected approximately 30 kg of acorns. Along with 10 kg provided by Mr T Christie owner of the neighbouring section of the wood, this seed was sown at Newton Nursery under the guidance of the Research Silviculturist. During the period 1991 to 1996 work according to the first Forest Enterprise/Scottish Natural Heritage Management Plan was progressed with the planting of 200 Oak along with the identification of natural regeneration of Oak on site. The planted and regenerated stock has been tubed for protection. Work was ongoing in tube maintenance activities, along with removal of Birch and Broom from around planted trees. Conifer regeneration was removed from the site during 1995 and 1996, whilst acorns were collected in 1995 to be used as planting stock for future years. Local collections of Holly and Hazel have been undertaken.

From 1997 to 2002 work has continued in the same vein as the previous five years. The removal of conifer seedling regeneration was repeated in 1998. Each year establishing young Oak were released from their grow tubes and had competing Broom cut away. Searches were made for germinating seedlings which were protected with tubes. A small amount of seed was collected and further seedlings are under propagation at Newton Nursery. Kellas has not had a good mast year in the period. In 1999 Oak raised from Kellas acorns were planted in groups mainly to the west of the SSSI in a newly clearfelled area, to extend the Oak stand.

During Spring 2008 the last of the non-native trees were felled to waste, Douglas Fir and Western Hemlock.

During 2011, Gorse, Rhododendron and Hemlock was felled to waste and the stumps treated with Glyphosate.

In 2012, the adjacent area was fenced and native broadleaves were planted, including Oak grown on from acorns collected from Kellas.

A deer fence was erected around the Oakwood on the SNFL in 2016.

D.1.3 Pressures and proposed actions

Table 17: details of pressures associated with Kellas Oakwood SSSI and proposed actions.

Site type	Feature description	Pressures	Proposed action	Timescale	Location map highlighting work and other key limiting factors
SSSI	Upland Oakwood	Presence/changing extent invasive species – non-native	Fell to waste all non-native scrub and tree regeneration.	2023/2024	Covers entire SSSI (Figure 23).
SSSI	Upland Oakwood	Over-grazing	Maintain deer fence currently around the site.	Ongoing	Covers entire SSSI (Figure 23).

D.1.4 Operations within the LMP that could impact on the designated features on the SNFL

Table 18: details of the operations within the LMP that could impact the Kellas Oakwood SSSI within the SNFL.

Operation type	Detailed description of operation and method	Mitigation measures to be applied	Timing	Map reference and other relevant comments
Tree/Scrub removal	Removal of tree and scrub regeneration from across the site. This will be done using chainsaw/scrubsaw. Cut material will be left on site as deadwood.	Trained operators and following industry best practice.	Throughout the lifespan of the plan.	Covers entire SSSI (Figure 23).
Thinning / Re-spacing	Re-spacing and thinning of Birch to maintain diversity and prevent shading of Oak and other native species (Rowan, Holly etc). This will be done using chainsaw/scrubsaw. Cut material will be left on site as deadwood.	Trained operators and following industry best practice.	2023 and throughout the lifespan of the plan.	Covers entire SSSI (Figure 23).
Seed collection	Collection of acorns. Nets will be placed on the ground in advance of seed fall during good mast years. Seed will then be grown on in FLS nurseries to be grown out on site in the Oakwood and the native woodland expansion to the west.	Nets will be removed following seed collection. Seed will only be collected during good mast years.	Throughout the lifespan of the plan.	Covers entire SSSI (Figure 23).

D.1.5 Operations within the LMP or aspects of the SNFL within the LMP that could impact on designated sites adjacent to national forest estate

Table 19: there will be no operational impact on land adjacent to the SNFL.

Operation type / Aspect of forest	Detailed description of issue or operation	Proposed action and/or mitigation	Timing	Map reference & other relevant comments
None	Not Applicable	Not Applicable	Not Applicable	Not Applicable

D.1.6 Appropriate Assessment/s undertaken on work contained within the LMP

Not required.

D.1.7 Approvals, agreements and signatures

I confirm that the above management plan which covers the SSSI “Kellas Oakwood” (Site code 482) within land management plan “Dallas” contains the necessary detail, content and mitigation measures to comply with the statutory requirements contained within the Nature Conservation (Scotland) Act 2004 and in particular in relation to Part 2, Chapter 1, Section 14 (d), which covers consents via an agreed management plan (i.e. “NatureScot’s consent under section 13 is not required in relation to carrying out an operation of the type described in subsection (1) of that section –(d) in accordance with the terms of a management agreement between NatureScot and the public body or office-holder carrying out the operation”).

NatureScot Signature: J Heatley

Date: 28 June 2022

NatureScot Name: Jennifer Heatley

NatureScot Job Title: Operations Officer

Address: Alexander Fleming House, 8 Southfield Drive, Elgin, IV30 6GR

Email: Tayside_grampian@nature.scot

Contact telephone number: 01343 541216

Forestry and Land Scotland has a corporate requirement under UKWAS (4th edition) and under the FCS Framework Document for FES (2010) to manage all designated sites in accordance with plans approved by the statutory authority, I therefore sign below to approve the contents of this plan in relation to the designated site Kellas Oakwood that fall within its boundary on the SNFL.

FLS Signature: 

Date: 30 June 2022

FLS Name: Philippa Murphy

FLS Job Title: Regional Environment Advisor

Address: Forestry and Land Scotland, Portsoy Road, Huntly, AB54 4SJ

Email: Philippa.murphy@forestryandland.gov.scot

Contact telephone number: 07702 871452

D.1.8 Nature Scot (previously Scottish Natural Heritage) Overview

Documents relating to the management of Kellas Oakwood SSSI can be found on the [NatureScot portal for protected areas](#), and covers:

- Site Management Statement
- SSSI Citation
- Operations Requiring Consent
- SSSI Map
- Scotland's Environment – Feature Condition

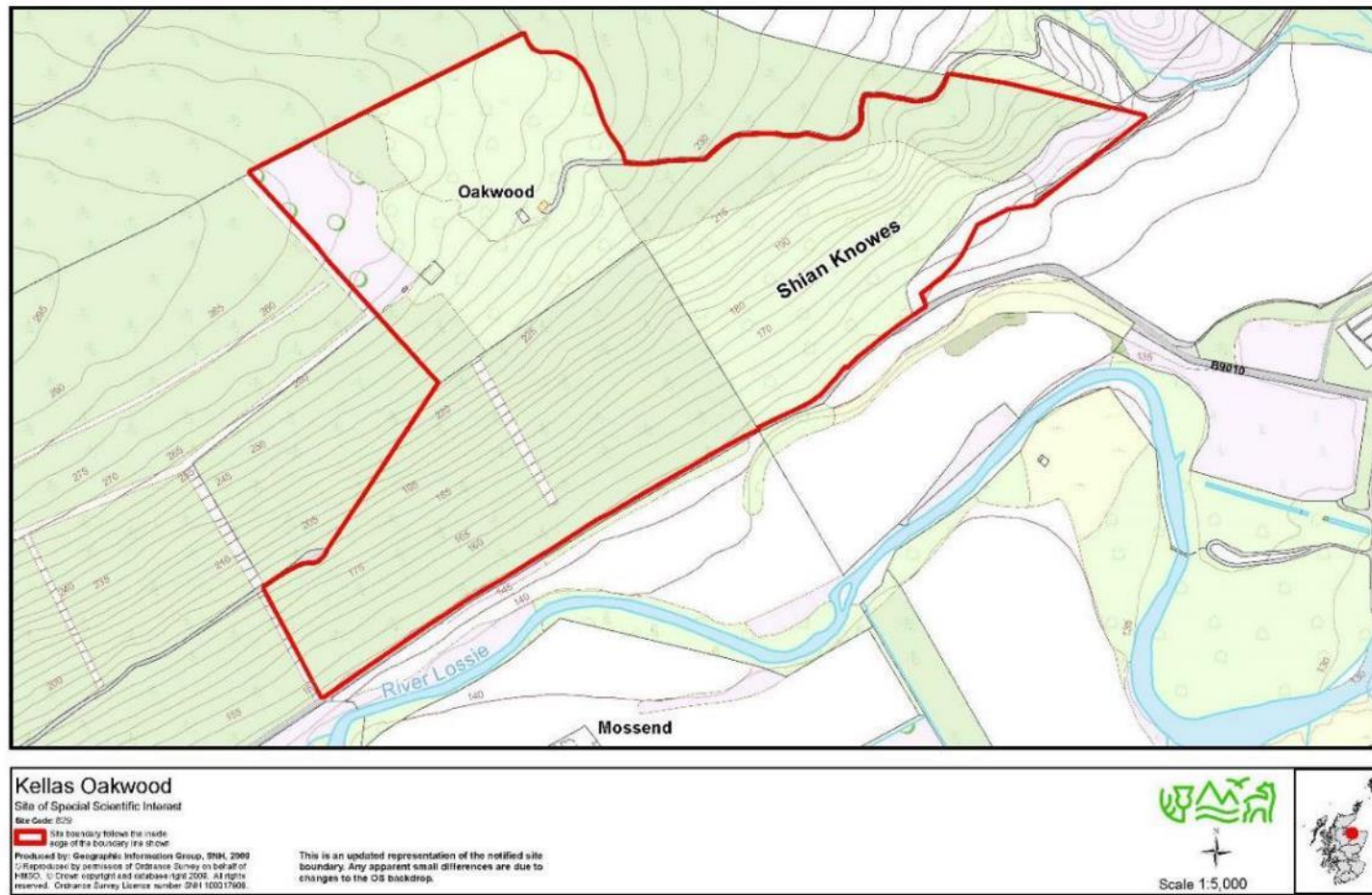


Figure 23: extent of Kellas Oakwood SSSI.

Appendix E. Mill Buie peatland restoration plan

The purpose of this Appendix is to provide supplementary information to support the EIA screening determination (see 3.1) for deforestation as part of the Dallas LMP submission for the purpose of initiating peatland restoration on Mill Buie.

This Appendix demonstrates alignment with the following key Scottish Government and Scottish Forestry and practice:

- [Forestry Commission Scotland \(2009\). Scottish Government's policy on control of woodland removal: implementation guidance: Annex 3 woodland removal without the requirement for compensatory planting](#)
- [Forestry Commission Scotland \(2015\). Deciding future management operations for afforested deep peatland](#)
- [Forest Research \(2000\). Forests and Peatland Habitats](#)
- [Forestry Commission \(2017\). UK Forestry Standard](#)
- [Scottish Government \(2015\). Biodiversity Strategy: Route Map to 2020](#)

E.1.1 Location and context

Mill Buie is part of the Dallas LMP area, to the south-east of Hill of the Wangie and Hillockhead, and covers 226.71 ha. Mill Buie comprises of Blanket Bog and Upland Heath – listed on the Scottish Biodiversity List and a UK Biodiversity Action Plan (BAP) as Priority Habitats.

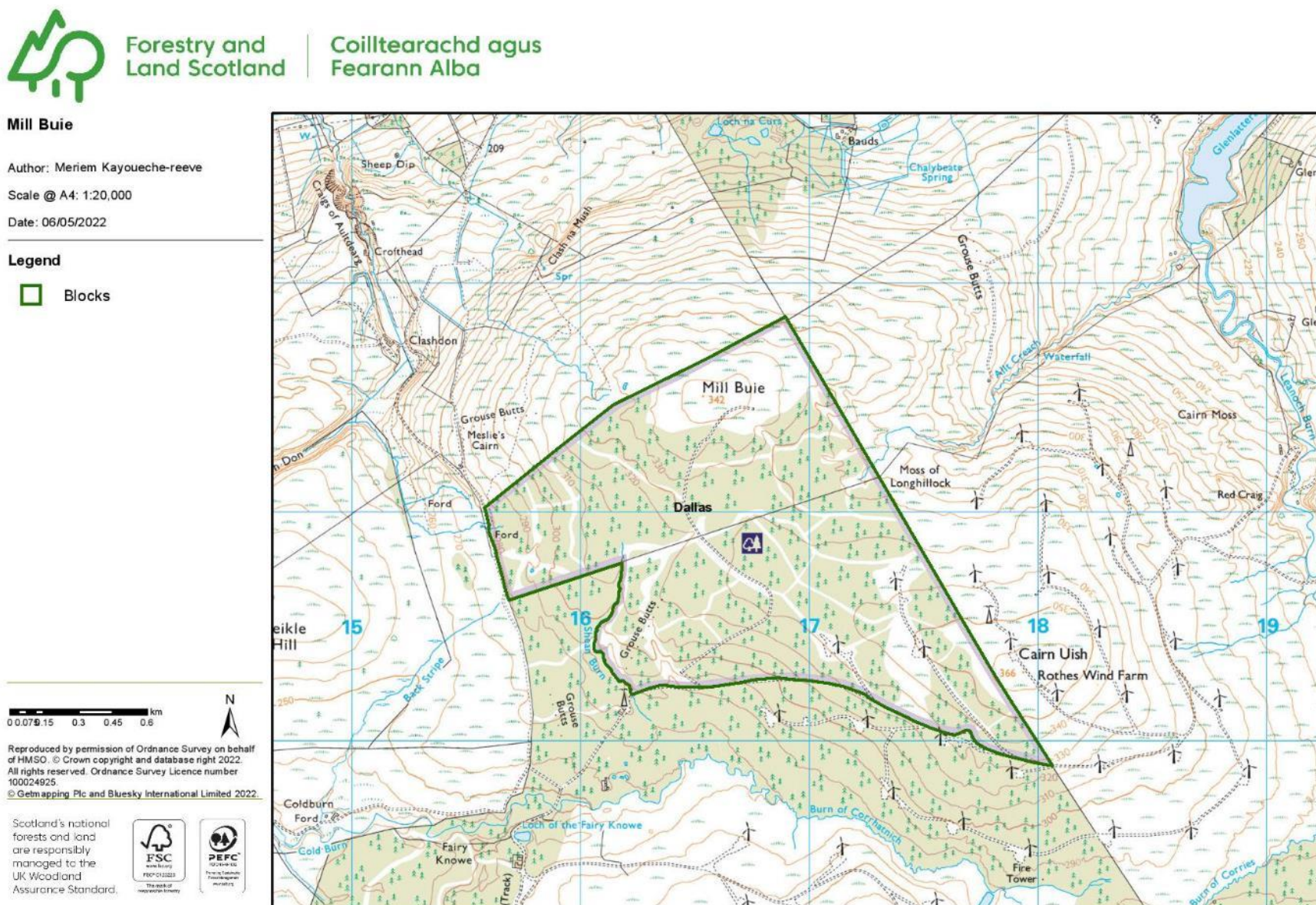


Figure 24: extent of the Mill Buie forest block, part of the Dallas LMP.

E.1.2 Long term vision

The long term vision for Mill Buie is to restore the site to its previous condition of priority habitat Blanket Bog and Upland Heath through the sensitive removal of the failed conifer plantation and a programme of peatland restoration. With the aim of allowing key peat forming species, such as Sphagnum Mosses and Cotton Grass, to become the dominant ground flora and allowing the associated biodiversity to thrive in the priority habitat. Upland heath and riparian native woodland will complement the habitat and further increase the biodiversity value of the area.

E.1.3 Management objectives

1. Systematically restore the deep peat areas to a functioning peatland system which will act as a long term carbon store and increase its value for biodiversity and water quality.
2. Recover the existing timber from the current conifer crop while balancing this with the primary objective of peatland habitat restoration.
3. Protect the existing bog habitat, future peatland areas and upland heath areas, by the removal of regeneration of non-native conifers.

E.1.4 Critical success factors

- Utilise appropriate harvesting techniques to minimise ground impacts and so protect to the carbon storage potential of the blanket bog habitat.
- Utilise low impact forwarding methods to extract products to minimise ground damage.
- Where practical realise the biomass potential of all scrub and harvesting waste, leaving as clean a site as possible to help facilitate peatland restoration.
- Apply current best practice and expertise in peatland restoration operations and use suitably experienced contractors with the appropriate machinery.
- Maintain a level of deer browsing conducive to native broadleaf regeneration by culling where appropriate.

E.1.5 Management of afforested deep peat

E.1.5.1 Summary

- The hill at Mill Buie comprises Upland Heath and Blanket Bog, both are listed on the Scottish Biodiversity List and the UK BAP as Priority Habitats. Therefore the site is a priority for restoration on ecological grounds.
- Afforestation is listed as one of the key threats to Blanket Bog and Upland Heath having a significant impact on their conservation status at a national level ([Control of Woodland Removal Policy – Annex 3: woodland removal without a requirement for compensatory planting](#)).
- Restoration of Blanket Bog is a key action of the Scottish Biodiversity Strategy. FLS as a Scottish Government agency has a duty to further the protection and enhancement of these habitats under the Nature Conservation Scotland Act (2004).
- The Blanket Bog and Upland Heath at Mill Buie are part of a wider landscape of upland habitats which provides connectivity with the habitat restoration works undertaken on the Rothes windfarm site.
- Remnant bog vegetation is abundant on the rides and open areas within Mill Buie indicating that the site has good potential for successful restoration.
- Forest-to-bog restoration techniques have advanced over the last few years and FLS is regarded as one of the leading organisations in developing best practice and delivering positive restoration programmes. Using current best practice we anticipate a more rapid recovery of the water table and successful establishment of bog vegetation on restoration sites than has been experienced previously.
- The Sitka Spruce and Lodgepole Pine crop currently on site has mostly failed with very poor rates of tree growth on any surviving conifers. The habitat in its current condition will be acting as a carbon source.
- Recent advances in restoration techniques indicates that the site has very good potential for restoration thus turning this carbon source into a moderate carbon sink with long term secure carbon storage.

E.1.5.2 FLS approach to peatland management

Restoration of Blanket Bog is a key action from the Scottish Biodiversity Strategy, the habitat is recorded on the Scottish Biodiversity List. Beyond its value as a carbon store, peatlands contain a huge diversity of organisms. Planting trees on peat leads to a fundamental change in the ecosystem¹.

FLS's approach to peatland management is different to the rest of the forest industry. FLS's objectives and legislative framework has an added dimension. Being a Scottish Government agency, FLS has an added 'Biodiversity Duty', as stated in the Nature Conservation Scotland Act (2004). Protection of conservation values is required as part of UKWAS certification and principles of sustainability are required under the UKFS. This means that for afforested peatlands restoration is considered before deciding if replanting is appropriate.

This is set out in [Making future management decisions of afforested peatlands Practice Guide](#). This practice guide outlines how to manage afforested peatlands that are not going to be restored for biodiversity reasons. It states that replanting must be justified by considering if the crop will achieve YC 8 or more for Sitka Spruce. The default is to not replant unless there is evidence it will achieve a good growth rate of harvestable timber. If YC 8 or above is not achievable then restocking peatlands is unsustainable. A slow growing crop will not result in a profit, it will be acting as a carbon source thus contributing to climate change and so society would be disadvantaged or threatened based on current scientific information.

The restoration potential of Mill Buie is considered to be high due to the very wet ground conditions and abundant remnant bog vegetation that persists in rides and other open areas. FLS are committed to a long-term restoration programme of Blanket Bog and Upland Heath, priority habitats. Restoration works have already been undertaken on the adjacent Rothes Estate as part of mitigation for the Rothes wind farm development.

Objectives for the restoration of the Mill Buie site are:

- Expand the area of peatland habitat by applying restoration treatments, restoring it to a functioning peatland within 30 years.

¹ Payne et al., 2018: The future of peatland forestry in Scotland : balancing economics, carbon and biodiversity. Scottish Forestry. pp. 34-40.

- Protect the storage of carbon within the soil (peats).
- Maximise the sequestration of carbon by the peatland in the future.
- Improve the water quality leaving the site and help regulate its flow.
- Monitor the impacts of treatments on the water quality to establish if it been improved over the long term.

The following tables present current and future management of afforested peatlands for the Mill Buie forest block. Set out in [Making future management decisions of afforested peatlands Practice Guide](#) are three Scenarios detailing peat types, characteristic habitat and vegetation. For the purpose of the tables below, Scenario A peat types are considered as ‘presumption to restore’ peatlands and Scenario B and C peat types are considered as ‘assessed peatlands’.

Table 20: summary current management of peatlands in the LMP.

Current management of peatlands in the LMP	Hectares (ha)	Comments
Afforested deep peatland	43.5	Total area size of afforested peatlands based on analysis of aerial images and site surveys.
Existing open habitat on deep peat	80.5	Total area of open peatland (ha).
TOTAL - All deep peat soils	124 (excludes windfarm area)	Total area size (ha) of deep peat soils within the forest block area based on the soils data. Deep peat soils are defined as per the SF Practice Guide: Scenario A, B and C soils. Presence of peat soils confirmed via peat surveys.

Table 21: summary of future management of afforested peatlands.

Future management of afforested peatlands	Hectares (ha)	Comments
‘Presumption to restore’ peatlands. Forest-to-bog restoration of afforested peatlands including the hydrological catchment	54.4	Only includes afforested peatlands which lie next to open existing peatlands, or Scenario A peatland types, as per the SF Practice Guide. The area of their hydrological units is also included (Figure 25).
‘Assessed’ peatlands. Forest-to-bog restoration to secure carbon store and sequestration, and maximize ecosystem services.	NA	Only includes Scenario B and C peatland types, as per the SF Practice Guide. Total area of afforested peatlands that will be restored following an assessment of predicted growth (YC). This is where no evidence found to support the conclusion that the next rotation stand would grow Sitka spruce YC8 or more with minimal disturbance and low level of peatland modifications. The areas of the hydrological units are also included.
Peatland to be restocked	NA	Total area of afforested peatlands that will be restocked because evidence was found to support the conclusion that the second rotation will clearly be YC8 or more with minimal disturbance and with a low level of peatland modifications.

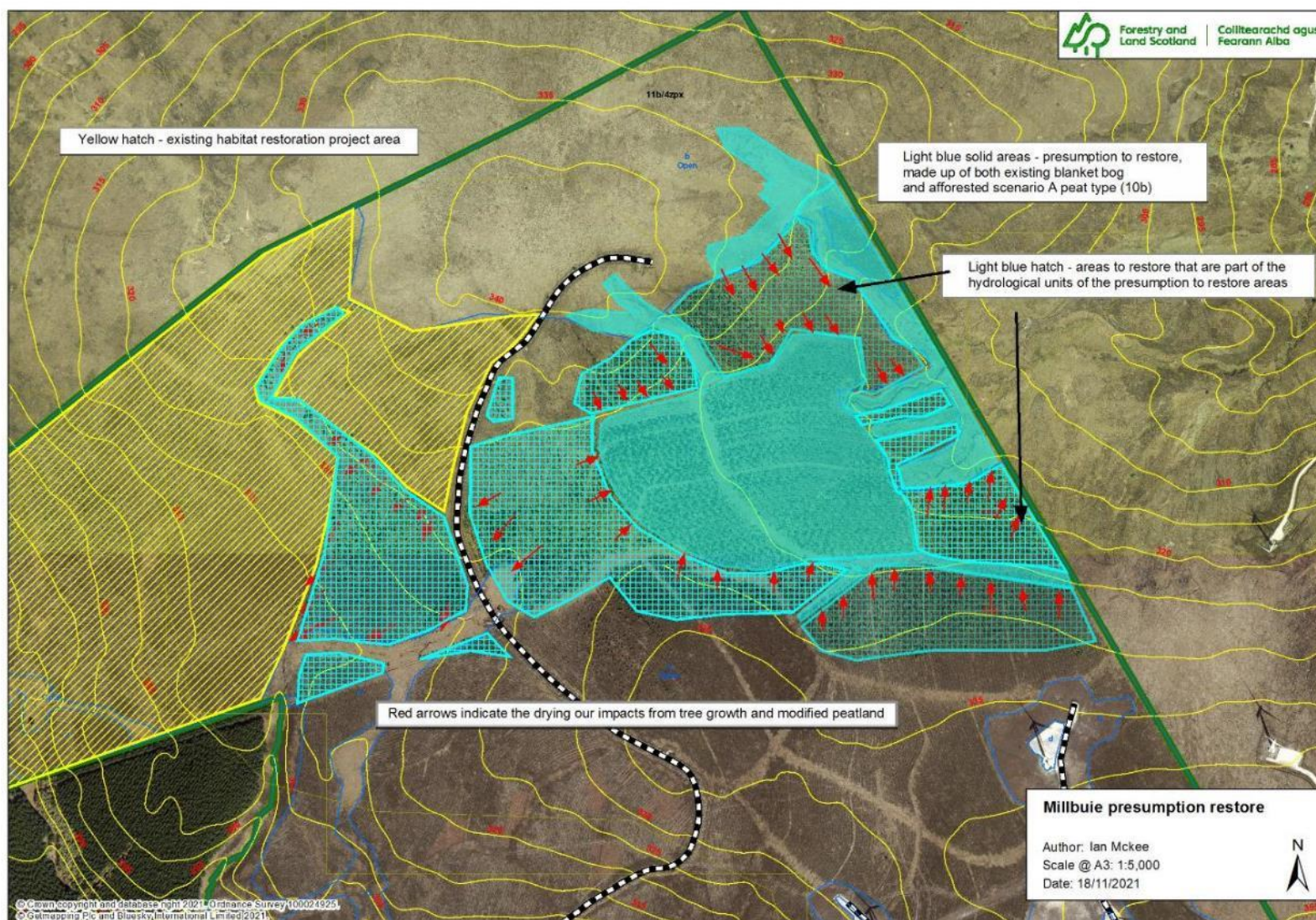


Figure 25: location of ‘presumption to restore’ peatland restoration at Mill Buie, a combination of forest-to-bog and open habitat restoration (54.4 ha).

Table 22: Presumption to restore, description of key features. Only relevant for Presumption to Restore peatlands (Scenario A peat types) where deforestation would prevent the significant net release of greenhouse gases.

	Description	Location of described attribute
Description of any designated sites, priority peatland habitats needing to be protected and enhanced.	Blanket Bog priority peat habitat exist across the site, particularly to the north (within FLS land) and to the east of the site (outside FLS land). Blanket Bog habitat covers the rides within the afforested peatlands with associated vegetation found under trees. The canopy is thin, allowing light to support a field layer characteristic of Blanket Bogs in the furrows, with a more heathy vegetation found on top of the ridges.	Illustrated by Figure 26 (habitat and soils).
Description of the Scenario peat types present in the forest (all will be restored), and any characteristics of interest.	A flat Upland Raised Bog exists in the centre of the afforested area.	Illustrated by Figure 26 (habitat and soils).
Description of hydrological units, extent, relation to peatlands to be restored and the topography.	The Upland Raised Bog exists in a flat area, with a bowl surrounding on 3 sides. All slopes leading into the bog area carry water to it, which is made up of the afforested peatland, and the ride-lines of Blanket Bog through it. There is a catchment divide to the west of the afforested peatland, between west and east. The eastern catchment is larger, and water runs east into three water courses which have become eroded into three gullies. Erosion may have been promoted by the forestry drains, which would have increased the peak flows experienced there	Illustrated by Figure 25 (presumption to restore).
State any points of note from survey	NA	NA

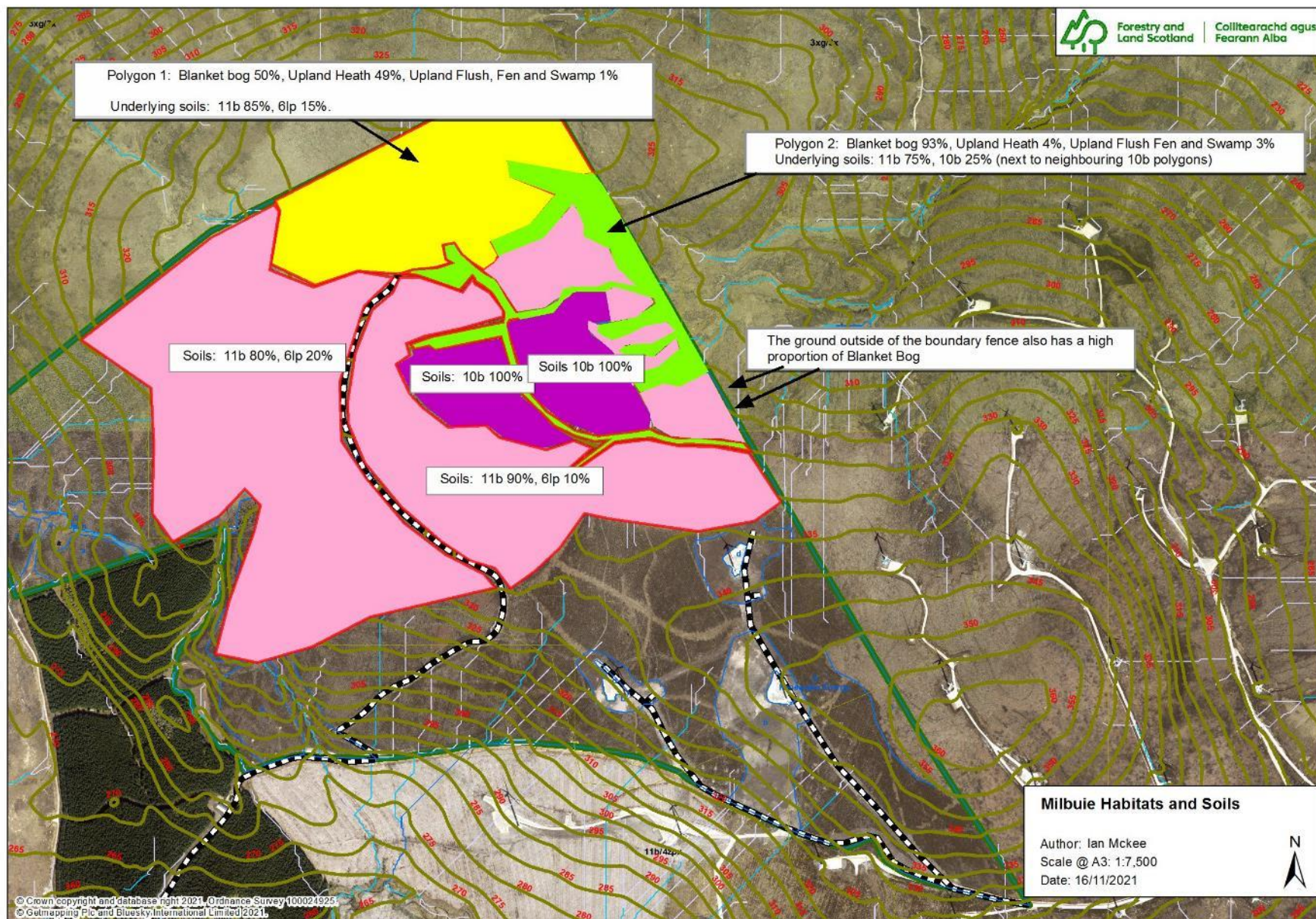


Figure 26: habitats and soil types found at Mill Buie.

Table 23: only relevant for Assessed Peatlands (Scenario B and C peat types) where there needs to be clear evidence that restocking on peat soils will produce a yield class equivalent to Sitka spruce 8 or more.

Attribute described	Description	Location of described attribute
ESC statement, respective to peat types (range)	NA	NA
Accumulated Annual Temperature (range)	NA	NA
DAMs score (range)	NA	NA
Crop deficiencies (needles, colour, leader length)	NA	NA
Location and extent, proportion of healthy crops (no signs of deficiencies) and reason	NA	NA
Statement of correction factors used to predict of next rotation from ESC outputs (drainage, fertilising, flushing, heather control, peat compaction, and the combination of all of these per peat type)	NA	NA
Statement of actions required to limit carbon loss from peatland soil. For example, partial re-wetting, referencing average water table height and density of drains.	NA	NA
Where Peat Edge Woodland is proposed, confirm and explain why restoration of deep peatland is not possible	NA	NA

Table 24: restoration proposals. Describes the restoration techniques to be applied to the proposed restoration areas.

Attribute described	Description	Location of described attribute
Treatments used to restore the hydrology	Site specific specifications or alterations of the approach: There are no drains through the plantation, but some outside the currently afforested area. The ploughed ridges and furrows are very prominent, and a single mould board plough was used. It is possible that a draining plough was used to plough the ridges and furrows. This site was afforested in 1987 and was privately owned. It was transferred to what was the Forestry Commission (FC) as part of a grant recovery process, as the trees had not established sufficiently well enough.	Whole afforested site.
Treatments used to restore the topography (remove afforestation modifications, and previously hagged sites)	Site specific specifications or alterations of the approach: A 'light' touch ground smoothing specification will be used, simply because the existing vegetation is very impressive and desirable to retain. Furrows will have the vegetation reserved, then ridges pushed into the furrows, and the reserved vegetation replaced on top of the site of the ridges (which will be bare). The tree stumps are of a small size, and most may not even need to be flipped, but rather slid sideways into the excavated furrow.	Whole afforested site.
Treatments used to counter-act peat cracking or other modifications caused by the afforestation of the peatland	No peat cracking noted on the survey. Possible that some cracking on the slopes to the north could be present. Back fill trenches if investigations by the excavator find peat cracking.	Northern slopes.

E.1.5.3 Environmental Impact Assessment risk assessment

Forest-to-bog peatland restoration is classified as a forestry project under the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017. To obtain consent from Scottish Forestry, an assessment of potential environmental risks as a result of the proposed forestry project is required to allow the determination of whether it is likely to have significant effects on the environment.

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

Proposed Work							
Please put a cross in the box to indicate the type of work you are proposing to carry out. Give the area in hectares and where appropriate the percentage of conifers and broadleaves							
Proposed Work	select	Area in hectares	% Conifer	% Broad-leaves	Proposed work	select	Area in hectares
Afforestation	<input type="checkbox"/>				Forest roads	<input type="checkbox"/>	
Deforestation	<input checked="" type="checkbox"/>	54.7 ha	100%		Forest quarry	<input type="checkbox"/>	
Location of work		Mill Buie, Dallas LMP					

Description of Forestry Project and Location
Provide details of the forestry project (size, design, use of natural resources such as soil, and the cumulative effect if relevant). Please attach map(s) showing the boundary of the proposed work and other known details.
Peatland restoration of Mill Buie. See Appendix E of LMP for details of the proposed deforestation, peatland restoration plan and associated maps.

Provide details on the existing land use and the environmental sensitivity of the area that is likely to be affected by the forestry project.
The existing land use is a failed commercial conifer plantation of Sitka Spruce and Lodgepole Pine planted on deep peat soils. The proposed works will restore the deep peat areas to a functioning peatland system which will act as a long term carbon store and increase its value for biodiversity and water quality.

Description of Likely Significant Effects
Provide details on any likely significant effects that the project will have on the environment (resulting from the project itself or the use of natural resources) and the extent of the information available to assist you with this assessment.
There will be significant positive effects on the environment as a result of this project. See Appendix E of LMP for details of the positive effects this project will have.

Include details of any consultees or stakeholders that you have contacted in order to make this assessment. Please include any relevant correspondence you have received from them.

Mitigation of Likely Significant Effects

Environmental Impact Assessment Screening Opinion Request Form

If you believe there are likely significant effects that the project will have on the environment, provide information on the opportunities you have taken to mitigate these effects.

All significant effects of the project are expected to be positive so no mitigation measures are required. However Appendix E includes details of the environmental protection measures that will be undertaken during works on site to ensure there are no detrimental impacts on the environment.

Sensitive Areas

Please indicate if any of the proposed forestry project is within a sensitive area. Choose the sensitive area from the drop down below and give the area of the proposal within it.

Sensitive Area	Area
Deep peat soil	54.7 ha
Select...	
Select...	
Select...	
Select...	

Property Details

Property Name:	Mill Buie, Dallas		
Business Reference Number:		Main Location Code:	
Grid Reference: (e.g. NH 234 567)	NJ 162 502	Nearest town or locality:	Dallas
Local Authority:	Moray		

Owner's Details

Title:		Forename:	
Surname:			
Organisation:	FLS, East region.	Position:	
Primary Contact Number:		Alternative Contact Number:	
Email:			
Address:	Portsoy Road, Huntly, Aberdeenshire.		
Postcode:	AB54 4SJ	Country:	
Is this the correspondence address?		Select...	

Agent's Details

Title:	Ms	Forename:	Meriem
Surname:	Kayoueche-Reeve		
Organisation:	FLS	Position:	Forest Planner
Primary Contact Number:	0300 067 6200	Alternative Contact Number:	
Email:	enquiries.east@forestryandland.gov.scot		
Address:	Portsoy Road, Huntly, Aberdeenshire.		

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Postcode:	AB54 4SJ	Country:	Scotland
Is this the correspondence address?	Yes		

Office Use Only

GLS Ref number:	
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Mill Buie tree removal

Author: Meriem Kayoueche-reeve
 Scale @ A4: 1:15,000
 Date: 24/05/2022

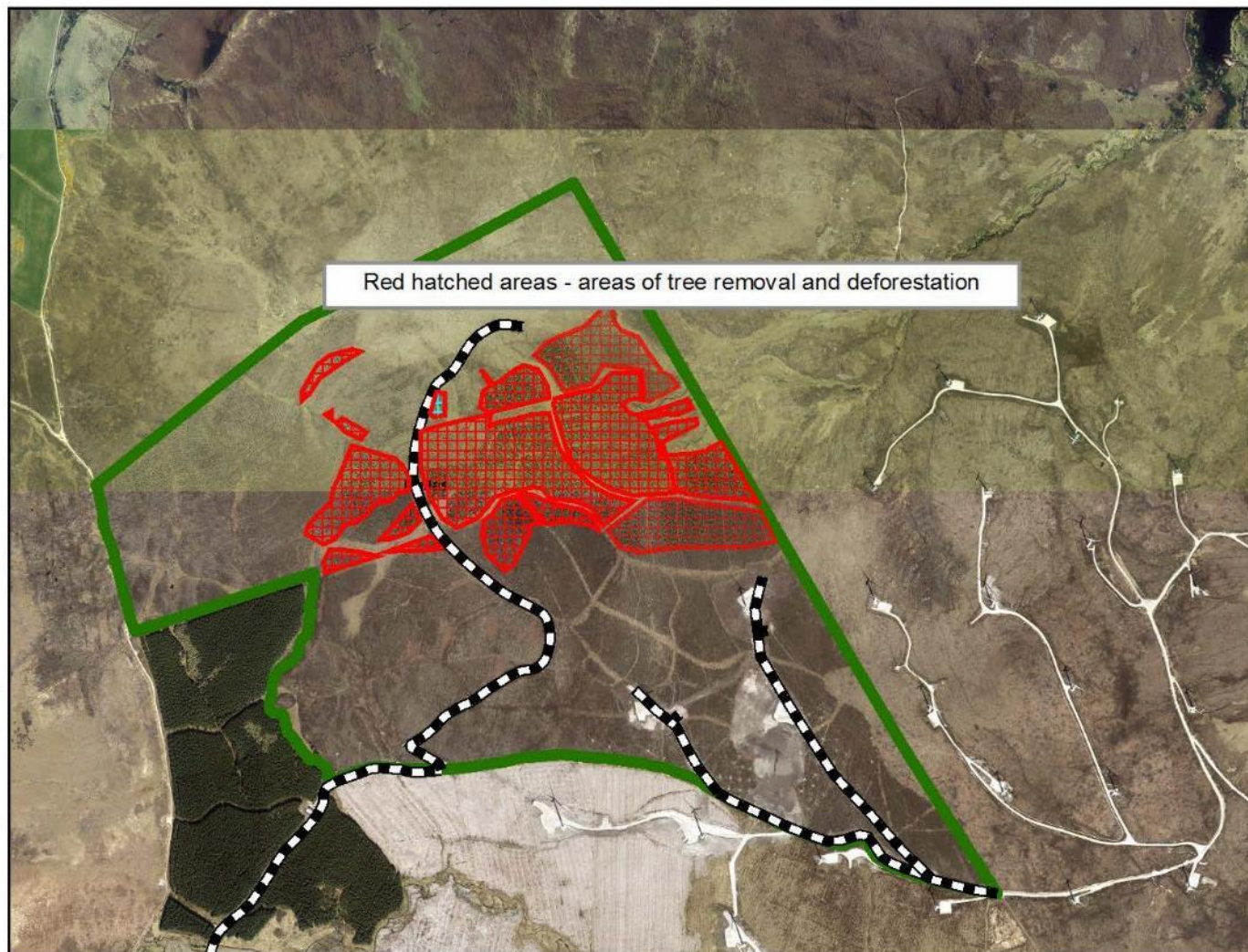
Legend

Forest Roads

█ Forest Roads

Blocks

█ Blocks



0 0.050.1 0.2 0.3 0.4 km

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Scotland's national forests and land are responsibly managed to the UK Woodland Assurance Standard.

Figure 27: areas of tree removal and deforestation at Mill Buie covers 54.7 ha.

Table 25: summary of main risks associated with forest-to-bog peatland restoration.

Main risks to assess	Impact assessment
Population and Human Health	No impact. There are no core paths or public/private water supplies within the proposed area. In general, this area is not used by members of the public.
Biodiversity (habitats, species)	Positive. Restoration of a degraded peatland will restore a priority open habitat (Blanket Bog) and compliment adjacent upland heath, benefitting both habitat and its associated species. Pre-operational surveys will identify any protected or breeding species to ensure suitable mitigation is in place to avoid any disturbance.
Land	No impact. Where the restoration project is adjacent to agricultural land, boundary drains will not be blocked to ensure neighbouring land is not compromised by re-wetting and increased potential to flooding.
Soil – and geology, geomorphology	Positive. Re-wetting the site will benefit the peat soils as forestry modifications will be reversed to stop oxidisation and further degradation and erosion of the peat.
Water	Positive. Re-wetting techniques have shown to have no significant adverse effect on water quality. Ultimately, the water quality of the local area will be improved by reducing run-off from the exposed peat and degraded peatland. Any water courses will be suitably protected and buffered as per the UKFS Guidelines.
Air	No impact.
Climate	Positive. Afforested peatlands have the potential to emit more Green House Gas (GHG) emissions than can be absorbed by a woodland. Restoration of afforested peatlands, especially 'presumption to restore' peatlands, will prevent the significant net release of GHGs, ultimately benefitting the local climate.
Material Assets	No impact.
Cultural Heritage	No impact. Pre-operational surveys will identify any cultural heritage features to ensure suitable mitigation is in place to avoid any disturbance.
Landscape	Positive. Peatland restoration will create more open space within the forest blocks and their local area. This will add more diversity to the forest structure by creating open and associated native woodland habitats.

E.1.5.4 Monitoring

Mill Buie will be monitored on a regular basis to assess the change in surface vegetation (also a proxy indicator of water table level) and to check for non-native regeneration. It is envisaged that more monitoring will be undertaken by drone-based aerial photography at least bi-yearly. A full review of the peatland restoration will take place 5 years after completion and at the LMP mid-term review.

FLS continues to work closely with Forest Research on the effects of peatland restoration on water quality and will follow the best practice recommendations made in a recent publication by Shah and Nisbett based on 10 years of data collected from Flanders Moss. More details can be found at [Forest Research](#).

Appendix F. Glossary

Acronym	Definition	Meaning
At5	Accumulated Temperature above 5°C	A measure of summer warmth.
ATV	All-Terrain Vehicle	Off road vehicle such as a quad bike for carrying out management operations in remote locations
CCF	Continuous Cover Forestry	Forest management style that aims to begin establishment of the new crop under the canopy of the previous
CONFOR	Confederation of Forest Industries	Supporting sustainable forestry and wood-using businesses through political engagement, market promotion and supporting our members' competitiveness
DAMS	Detailed Aspect Method of Scoring	A modelled windiness score calculated from tatter flag observations, elevation, aspect, topographical exposure, valley shape and direction
ESC	Ecological Site Classification	Web-based decision support system to help forest managers and planners select tree species that are ecologically suited to particular sites, instead of selecting a species and trying to modify the site to suit.
FLS	Forestry and Land Scotland	The Scottish Government Agency responsible for managing our National Forests and Land
km	Kilometres	Unit of measurement: 1000 meters.
LEPO	Long-established woodlands of plantation origin	Plantation from maps of 1750 or 1860 and continuously wooded since.
LISS	Low Impact Silvicultural System	Forest management style that aims to increase species and structural diversity in the landscape
LMP	Land Management Plan	The document setting out the intended management strategy for an area of forests and land.
MAI	Mean Annual Increment	The average annual increase in volume of individual trees or stands up to the specified point in time.
MI	Minimum Intervention	Management with no systematic felling or planting of trees.
MD	Moisture Deficit	Reflects the balance between potential evaporation and rainfall and therefore emphasises the dryness of the growing season
PAWS	Plantation on Ancient Woodland Site	Ancient woods as identified on the original OS map that have been latterly planted with non-native species
PVA	Potentially Vulnerable Area	Where significant flood risk exists now or is likely to occur in the future
RSPB	Royal Society for the Protection of Birds	The country's largest nature conservation charity, inspiring everyone to give nature a home.
SEPA	Scottish Environment Protection Agency	Scotland's principal environmental regulator, protecting and improving Scotland's environment.
SF	Scottish Forestry	Scottish Government agency responsible for forestry policy, support and regulations.
HER	Historic Environment Records	Holds information on all the known archaeological sites.
SNFL	Scotland's National Forest and Land	Land owned by the Scottish Government and managed by FLS.
SSE	Scottish and Southern Energy	Multinational energy company.
SSSI	Site of Special Scientific Interest	A formal conservation designation covering an area of particular interest due to the rare species of flora or fauna it contains
UKFS	United Kingdom Forestry Standard	The reference standard for sustainable forest management across the UK
UKWAS	United Kingdom Woodland Assurance Scheme	Independent certification standard for verifying sustainable woodland management in the UK
YC	Yield Class	The rate of growth in volume terms per hectare of land – and so relates to the productive capacity of a forest.