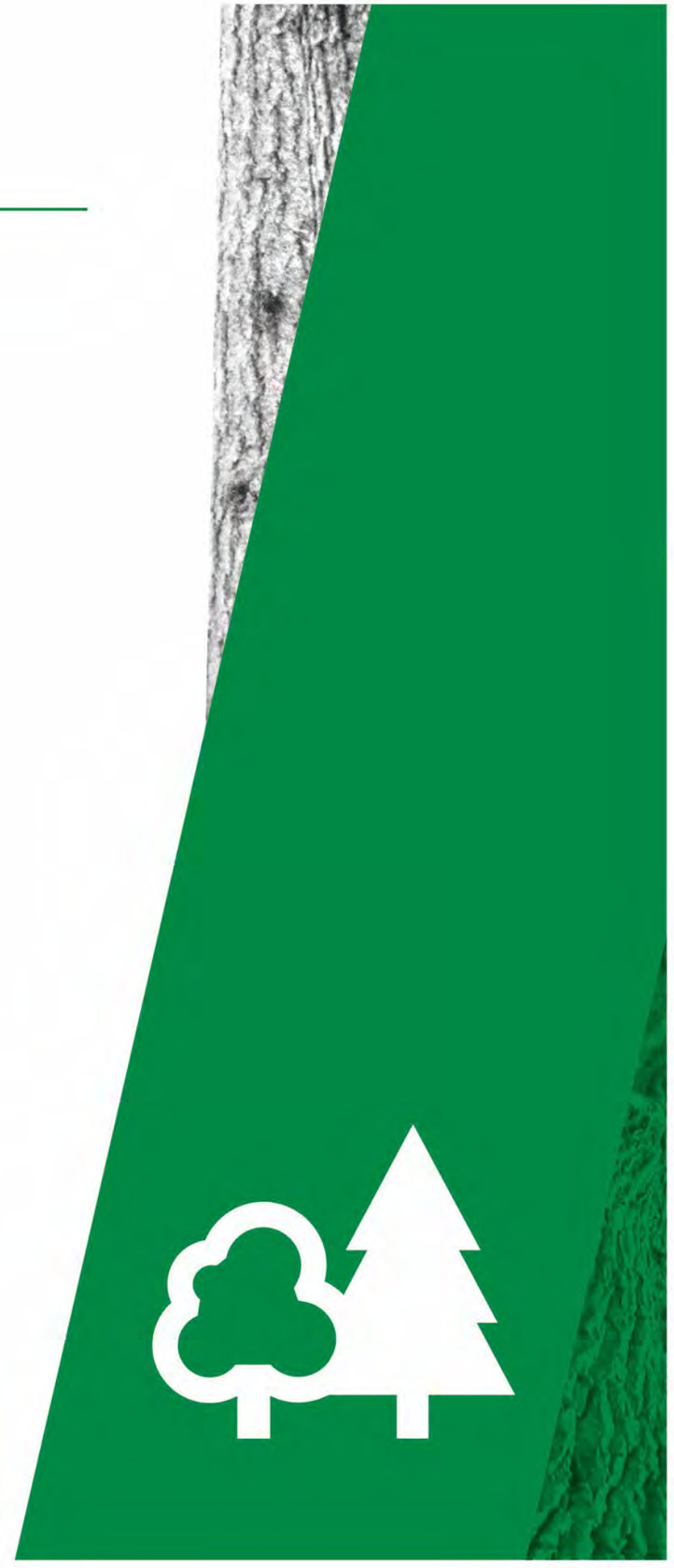
Forestry England

Scalderskew Forest Plan 2024

North Forest District



Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

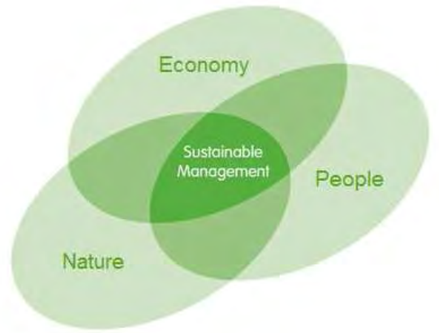
Planning and District Context

The Strategic Plan for the Nation's Forests outlines the delivery of forest policy at a national level. At a regional level there are six Forest Districts covering the country that directly oversee the implementation of policy actions in the nation's forests. North Forest District (NFD) is an extensive area encompassing 9 county or unitary authority areas from the Scottish border to Durham and Lancashire.

Our task is to realise the potential of each of the forests in our care for sustainable business opportunities, wildlife and nature conservation, and the enjoyment and well-being of local people and visitors. Each of our forests supports the economy through local jobs, sustainable timber production and the provision of recreation and tourism opportunities. All are funded by revenue from timber sales and recreation provision.

The woodlands of the district are currently arranged in 59 management areas, and their management is covered by individual ten-year Forest Plans that identify local issues and the broad silvicultural management of the woods. Forest Plans are reviewed every five years.

These plans and their associated forest operations ensure that produce from the woodlands is endorsed by the Forest Stewardship Council® (FSC®) and the Programme for the Endorsement of Forest Certification (PEFC) as being produced from woodlands under good management that meet the requirements of the UK Woodland Assurance Standard (UKWAS) and the UK Forest Standard (UKFS). Individual Forest Plans aim to deliver a range of public benefits with achievable objectives that deliver the three drivers of sustainable land management outlined in the North Forest District Strategy. Forestry England recognises its obligations under UK legislation and regulations such as the Natural Environment and Rural Communities Act 2006; as amended by the Environment Act 2021 (Sec 102)'.



These key drivers are supported by the following Forest District Policy;

- We will optimise the financial return from timber production compatible with achievement of other forest district objectives while complying with the UK Forestry Standard and meeting the requirements of the UK Woodland Assurance Standard.

- We will provide public access to all our forests and woodlands where there are no legal or safety restrictions. We will encourage and permit a wide range of recreational activities from walking and quiet enjoyment to more specialised activities.

- We will ensure that rare and threatened habitats are protected and managed to maintain or enhance their conservation value.

Scalderskew Forest Plan

This is the fourth revision of the Scalderskew Forest Plan which was last revised in 2009. It has been brought up to date in terms of work achieved over the last plan period, and ongoing implementation of the management objectives. The impacts and threats associated with emerging pests and diseases, particularly *Phytophthora Ramorum*, have necessitated the largest changes, with much of the larch already felled prior to this revision under Statutory Plant Health Notices. The restocking plan follows previous iterations to reduce sitka spruce by increasing the diversity of tree species and forest structure through the use of broadleaf and other conifer species. Future management for the forest seeks to move away from clearfelling to incorporate continuous cover systems that use regular thinning to manage the transition phase, produce a sustainable quantity of timber and improve the opportunities for biodiversity.

Part 1 Background Information

Introduction

Scalderskew is a single forest block of 97.86 ha. Situated 5 km north of Gosforth, 7 km east of Egremont Scalderskew lies within the north-western boundary of the Lake District National Park (Map 1). Scalderskew is 1 km north of the adjacent Blengdale Forest, also managed by Forestry England. The block is owned freehold having been purchased in 1937 by the then Forestry Commission, with planting starting in 1938. This is the fourth revision of the Scalderskew Forest Plan, the first being approved in 1998, while the last revision was in 2009. For the public, Scalderskew is managed primarily as a quiet, low-key recreational destination for walkers.

Current woodland composition

- Total area: 98 ha 100%
- Woodland: 60 ha 61%
- Transitional open: 20 ha 21%
- Designed open: 18 ha 18%

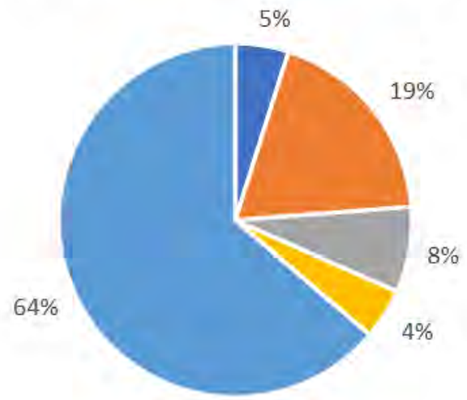
80 ha of the 98 ha of land that Scalderskew occupies is woodland. Of this wooded area 25% is currently felled and classified as transitional open awaiting restocking or natural regeneration. A further 18% of the total area is categorised as designed open ground, although much of this is moving towards successional woodland of broadleaves creating more of a transitional habitat. Natural regeneration of Sitka spruce is also present on the open space habitat and future management needs to consider options for removing this.

Coniferous tree species currently dominate the forest structure, with Sitka spruce making up two thirds of the wooded area (Figure 1 & Map 2). This composition reflects Scalderskew's original planting objectives as a coniferous forest block for timber.

[1] Yield Class: an expression of growth rate as cubic metres of timber per hectare per year: YC12 = 12 m^3/ha/year.

Larch has provided a very useful alternative in both timber and environmental reasons, but outbreaks of *Phytophthora Ramorum* over the last few years has caused the early felling of this species. The most recent outbreak in 2022 has resulted in a plant health notice requiring the felling of 15 ha of larch in the northern half of the block, leaving just 11 ha remaining. It is expected that larch will need to be completely removed during the period of the forest plan.

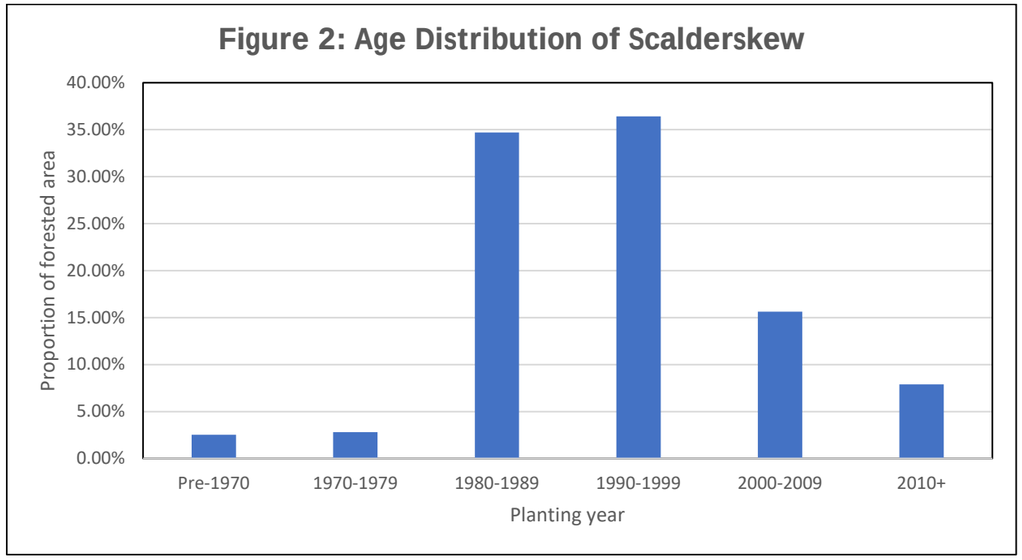
Figure 1: Scalderskew Forest Composition



Average yield class[1] across species is 12 with most of the spruce being yield class 18, which confirms the forests' potential for timber. The broadleaved species perform at yield classes 4 to 6 (Map 3).

The age distribution of the current crop is narrow, with 71% of the forest planted in the 10-year period 1989-1999 (Figure 2). The oldest component in the wood is Sitka spruce from 1941.

The exposure value of the forest in relation to the risk of storm damage and windblow is described as wind hazard class. The average for this across the forest is 2, which is low, with 72% of the forest falling into this category. The remaining 28% of the forest is between wind hazard classes 3 and 4, which is a moderate risk. This indicates that the use of low impact silvicultural management systems (thinning) could be viable in the future, as crops should be relatively windfirm (Map 4). The oldest stand of 1941 Sitka spruce was one of the few parts of the wood that incurred wind throw damage in the recent winter storms, indicating a maximum age/top height limit for conifers in the wood, which informs future decisions for thinning systems.



Grazing and browsing pressure from sheep and deer incursion is high, to the extent that natural regeneration of palatable broadleaved or conifer species will be very difficult without protection. The existing broadleaved stands have been successful because of the use of deer fences (2005–2020). A stand of oak was established in 2013 using tree shelters, but it remains in poor condition and cannot yet be considered successfully established 10 years on. Any aspirations to diversify forest structure and composition in the future using natural regeneration will only be successful with firm action to manage browsing herbivores.

Sitka spruce has a low palatability to browsing herbivores and is regenerating freely in restocks and on open habitats.

Designated Areas

Scalderskew is in the Lake District National Park and the English Lake District World Heritage Site (WHS), which was inscribed as a cultural landscape in 2017. The National Park and World Heritage Site provide the opportunity to demonstrate, at a practical level, how activities such as forestry, which have been prominent in shaping the landscape we see today, can create greater public benefit through sustainable land management delivering for people, nature, and the economy.

The World Heritage Site nomination document provides a useful description of the surrounding agropastoral landscape. The area is noted in the Ennerdale section of the nomination for beauty and harmony, the use of common land, and the history of the conservation movement and the National Trust, primarily in the Ennerdale valley itself as opposed to the wider area including Scalderskew. The nomination document also references the importance of woodland industries to the area's distinctive characteristics.

There are no Sites of Special Scientific Interest or Special Areas of Conservation within Scalderskew.

Neither are there any areas on the ancient woodland register, although historical mapping suggests that there could be a small area against the Worm Gill that could qualify to be treated as long established wooded habitat.

Historic Environment

There are no historic sites recorded in the forest. The only known features of archaeological interest are the boundary walls around the forest, and a mountain pinfold at grid reference NY089090, just outside of Forestry England ownership (Map 5). During planning for forest operations, the site assessments look for potential features that have not yet been discovered. Such features will be protected during operations and opportunities taken to enhance as appropriate.

Natural Environment

The habitats of Scalderskew are mostly coniferous forest with some broadleaf woodland areas, riparian habitat, and open ground as grassland. Much of the heavily grazed hill ground surrounding the forest is recorded as grass moorland under Natural England's priority habitats list.

On Ordnance Survey maps from the 1860 series (Figure 3), a part of the forest that sits beside the Worm Gill river is recorded as being Scalderskew wood although by that time the site appears to be scrub, rather than full woodland. The heritage and composition of this can only be guessed at, but remnant woodland in an adjacent watercourse still contains remnant ash, hazel and rowan. The ground flora closest to the river does point to woodland NVC types with wet flushes of Ramson (Allium ursinum) where this has been protected from grazing.

The forest does provide an important habitat for species within a largely open grazed landscape, in particular birds such as chaffinch, robin, wren, goldcrest, song thrush, buzzard and goshawk (sightings on site visit 20 March 2024). The county records resource also show records for Small Pearl-bordered fritillary and Small Heath butterflies, Common Darter and Golden-ringed dragonflies, and Eurasian otter on the Worm Gill.

Areas of mature tree cover in the forest have created habitat for bats, and areas suspect of hosting roosts are inspected prior to operations to minimise any potential disturbance.

The adjacent Blengdale forest harbours a small red squirrel population. However, in Scalderskew there are no records for this species, so it is possible the combination of the open ground separating the two forests and the low tree species diversity is deterring this species.

Table 1 summarises a range of key species groups that will benefit through this forest plan.

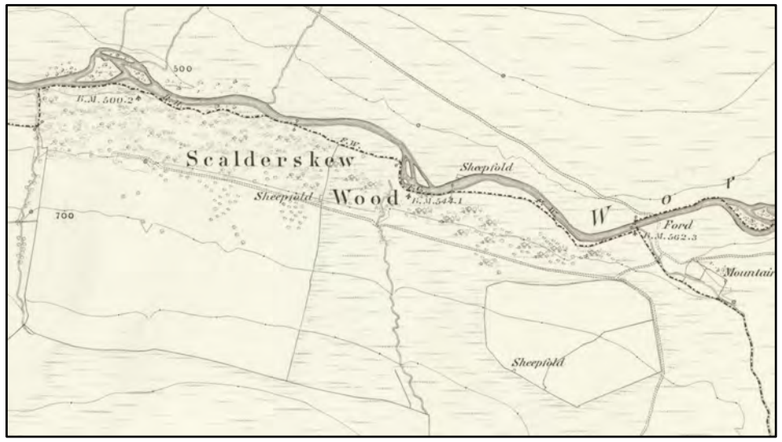


Figure 3: Scalderskew Wood - Ordnance Survey Map Extract 1860 Series.[2]

Worm Gill runs along the northern edge of the forest and is valued for spawning fish. A small beck in the forest feeds into Worm Gill, and the forest runs right up to the riverbank at multiple points. These bankside trees were identified in the previous plan as having a negative impact on the watercourse, and this plan continues the work set up previously to see all conifer adjacent to worm gill removed and replaced with native broadleaves or open ground. All works adjacent to, or with the ability to impact watercourses will be worked according to forest and water guidelines to preserve and protect water quality during operations.

Table 1: Species and Actions Supported by this Forest Plan

Species	Notes/Objective	Actions supported by this Forest Plan
Bats, European Protected Species, Schedule 5 WACA 1981	Enhance & maintain roosting opportunities.	Through coupe checks or other recordings during site visits, integrate protection of breeding/roost sites by retaining deadwood/feature trees during woodland management operations. The woodland needs older trees with cavities to develop to really increase the value.
Buzzard, Schedule 1 WACA 1981	Nest confirmed in 2013. Sightings recorded in vicinity of the wood. Maintain suitable habitats. Goshawk and sparrowhawk have been sighted in the wood, although nesting has to be confirmed.	Forest structure provides nesting opportunities not available in the wider landscape. Coupe checks prior to operations to check for nesting & apply appropriate mitigation.
Lesser spotted woodpecker, Tree pipit, Redstart, Pied flycatcher, Wood warbler, Marsh tit, Lesser redpoll, Hawfinch.	Woodland bird assemblage: Cumbria High Fells, Countryside Stewardship priority.	Maintain forest/woodland cover to provide habitat. Diversify tree species and structural composition of the wood by planting a wider range of species and thinning.
Insects: Small Pearl Bordered Fritillary, Small Heath butterflies.	Provide suitable habitat opportunities: grassland with wet flushes and scrub/woodland glades.	Provision of open habitats that transition from surrounding hill land and riparian zones.

[2] National Library of Scotland – Map Collection.

Landscape and Topography

Scalderskew is located within the Calder Valley landscape character area (LDNPA 2021) which acknowledges the contrast of conifer plantation in the valley when compared to the small patches of mixed woodland. The forest sits unnaturally in a steep valley landscape, reflecting the original land ownership enclosure boundary walls up the contours of the fell leading to an aesthetically challenging appearance, which is in contrast with the surrounding open land.

Topographically, the forest occupies the eastern side of Swainson Knott, an outlying Lake District Fell of 345 m. Scalderskew is separated by an area of open ground occupied by Scalderskew farm from the adjacent Forestry England managed Blengdale forest to the south.

The best views of the forest are restricted to walkers who use the public rights of way and open access rights through the valleys along the Worm Gill and Stockdale Moor and Ponsonby Fell.

The nearest viewing point from a public road is between Calder Bridge and Ennerdale Bridge, on the ridge at Cold Fell and the farms around Thwaites (OS grid reference NY053098), but this only provides a restricted view of the western edge of the forest (Plates 1 and 2).

A specific force for change is written in the landscape character for Scalderskew, with the 'transformation of the conifer forest of Scalderskew into an open native broadleaved woodland' noted in the document[3]. Additionally, the guidelines for managing landscape change refer to 'continuing to transform coniferous plantation to broad leafed woodland' to improve the physical attributes of the area.

This landscape objective is challenging, but this forest plan continues to move towards meeting these third-party aspirations. The early clearfells have advanced structural change in the conifer stands, creating new coupe shapes and drawing back the forest from the open fellside. The actions enabled by this plan will remove non-native conifers from the riparian zone along the Worm Gill river, transitioning to native woodland.

In the wider woodland restocking to a more mixed woodland cover of broadleaf with other conifer species will create more diversity in seasonal colour and texture. This strategy provides a mechanism to use silvicultural systems to improve the visual value of the woodland within a financially achievable approach, whilst maintaining and increasing the contribution that Scalderskew provides to the wider biodiversity and local economy objectives.

Retaining the strong sense of wilderness and tranquillity is important, and the district's recreation strategy will continue to promote low-key recreational use of Scalderskew, allowing the small number of visitors to explore the forest peacefully.

[3] Cumbria County Council, 2011, Cumbria Landscape Character Guidance & Tookit, Part One.

Plate 1: Scalderskew Forest. Looking East from public road C4004 at Farthwaite.

Plate 2: Scalderskew Forest. Looking East from public road C4004 above Cold Fell.

Communities and Recreation

Scalderskew is a quiet forest, crossed by one bridleway, and despite being dedicated under the Countryside and Rights of Way Act (CRoW), it sees relatively few visitors (Map 6). This quiet appeal is part of the spirit of place of the forest and makes it a peaceful haven for those who do visit. Visitors tend to be on foot, with some cyclists and horse riders also present at times. Parking is not provided, and owing to the private road access, is not possible. The forest can be accessed on foot from Blengdale, as well as via public rights of way from Kinniside Common and Ponsonby Fell.

A sporting licence for game birds is let in the forest.

Forest Pests and Diseases

Scalderskew provides good habitat for both red and roe deer. Deer populations are monitored to ensure that deer numbers do not compromise objectives of management, particularly the promotion of natural regeneration in low impact silvicultural systems areas.

Sheep incursion from the neighouring fell is also a considerable problem, adding to the browsing pressure.

The evidence from previous attempts to establish broadleaves is that deer fencing is essential. The use of plastic tree shelters has not produced viable results after 10 years, having suffered from the attentions of both red deer and sheep (plate 3). The use of deer fencing has produced broadleaved woodland, but since the removal of the fences, the grazing pressure has increased and the pressure on the field layer indicates that natural regeneration of broadleaved species will be negligible without continued controls in place.

The intention in this plan is to is to restock with native broadleaves and more palatable conifers, such as Scots pine. The management of deer and sheep will need to be a high priority within the period of this plan to achieve successful establishment of a better forest structure. The use of stock and deer fencing will also continue to be an essential part of the management strategy.

Larch is under threat from the disease *Phytophthora Ramorum* and Scalderskew has been subject to recent widespread infection. Outbreaks are subject to Statutory Plant Health Notices by Forest Services, which invariably require the felling of infected trees, and this has undermined the intentions of the previous forest plan. Half of the larch in Scalderskew was placed under a health notice and was felled in 2022. Much of the remaining larch is in intimate mix with spruce, and at high risk of disease. As such it will be thinned out in the immediate future, with the rest of the stands being placed into felling coupes in the next two felling periods to facilitate their felling in a structured manner.

Forestry England continues to monitor for other pests and diseases that might influence the future development of a forest plan.

Plate 3: Deer damaged oak, compartment 2802b.

Access and roading

Access to Scalderskew is only possible from the south via the forest road in Blengdale, which in turn is accessed from the public road in the small village of Wellington, Gosforth. From here there is easy access to the A595 and wider A-Road network. This route is an agreed timber transport route.

Internally there is one forest road in Scalderskew, which runs through the block to create a loop. A culvert on this route washed out in 2020 and requires replacement to make this road accessible again. The forest road network is in good condition which allows timber to be moved to market easily.

A public bridleway from Blengdale runs through the forest, sharing the forest road for a short stretch before running through the crop and out across a ford at Worm Gill, outside of the forest boundary.

Part 2 Review of Previous Plan

Table 2: Previous Plan Objectives

Objective	Comment
Natural environment Harsh boundaries improved through felling and restocking. New native woodland developed in Scalderskew which will be managed using Low Impact Silvicultural Systems (LISS) methods, locking up carbon for an extended period. Removal of conifer along Worm Gill and giving Worm Gill space for natural processes. Ecological Site Classification (ESC) used to plan choice of future woodland species.	Felling to satisfy plant health notices during winter of 2022/23 has forced unplanned change in the northern half of the forest. This allows for internal coupe shapes and composition to be improved during restock phases. Felling operation produced a positive income. Native woodland coupes established in compartment 2801g in 2006, with additional planting in compartment 2802b in 2013. Currently too young for LISS principles to be applied, however this ambition is retained. Quality of stocking and tree form in these coupes is not good. Deer/sheep browsing is a considerable risk to this objective. Sitka spruce regeneration is needs a strategy to maintain the intended forest objectives. Feling to remove spruce from beside the Worm Gill removed 2.4 ha from compartment 2803e. Species choices will be informed by ESC and local experience from other forests. Future choices will also be advised using Forest Development Types guidance produced by Forest Research. Silvicultural strategy will use broadleaved/conifer mixtures such as birch, aspen, alder, oak with Scots pine and Norway spruce.
Quality of life Maintain access through forest along roads and the public right of way. Continue to use temporary signing as a way of updating the local community of operations and activities.	Access maintained; area designated under CRoW.
Business and markets Continued thinning of the second rotation through the transformation phase.	Thinning operations have been delayed owing to the more urgent need to fell infected larch crops. Thinning operation proposed for 2024/25 will focus on line thinning and removing the remainin larch. Existing stands have produced good timber for the local markets and there was no difficulty making the sales.

Part 3 Analysis and Concept

The factors outlined in Part 1, and previous objectives in Part 2 present various opportunities and constraints. These are summarised below:

Table 3: Analysis of opportunities and issues

Factor	Opportunities	Issues/Actions
Management type	Recent plant health felling speeds up conversion from pure sitka spruce. Eventual conversion to continuous cover/low intervention silvicultural systems once restocked forest is established. Sheltered aspect and good growing conditions indicate this is achievable.	Age structure of forest and large restock programme means intensive management required in short to medium term to establish new mixed broadleaf/conifer crops. Thinning must be scheduled to start at year 20/25 of a stands' life. An objective to achieve natural regeneration will need better control over browsing herbivores.
Current species	Conifer species are productive with high yields, better than predicted with ESC: sitka spruce YC16-18, larch YC12. Native broadleaf restock sites have established reasonably well within deer fences. Opportunity to improve stocking and species diversity.	Presence of larch which is infected by *Phytopthora ramorum* has forced premature felling and removed this species from the planting stock. Native broadleaves in compartment 2802b have suffered a high level of damage (treeshelters). Level of browsing indicates that only sitka spruce can thrive without controls in place. Sitka spruce regeneration is establishing on the designed open spaces and in the establishing broadleaved coupes. A cost-effective management strategy is needed to phase sitka out of the forest.
Future Species	Good potential for more intimate mixes across the forest, planting different broadleaf and conifer species together to increase diversity and resilience in the forest. Including longer lived broadleaved species such as oak in the mixtures, adds longevity to the forest structure and provides a mechanism to transition from predominantly conifer to largely broadleaved woodland.	Broadleaf woodland requires greater emphasis on deer management or fencing for successful establishment. Silvicultural mixtures of conifers with broadleaves would provide a cost effective means of transitioning towards the vision. The presence of an active thinning programme will provide a mechanism to keep removing Sitka spruce in a cost effective manner. Current experience indicates that alternatives to sitka spruce will require protection from deer and sheep to be successful. Reinstate boundary walls and stock fences to exclude sheep.
Natural and historic environment	Prioritise felling alongside the Worm Gill to advance the conversion to riparian woodland. Prolong removal of spruce stands to maintain forest structure whilst restocks establish. Protection of features including veteran/feature trees, deadwood, or ground flora during operations to benefit biodiversity. Protecting heritage features during operations.	Age structure of the forest is still young, so the opportunity to promote veteran tress is very limited. At present the opportunity for veteran trees and good native woodland lies along the Worm Gill riparian zone. Use restocking systems to advance the next generation of forest tree cover. Pre-operational planning will identify and safeguard features during work.
Access and Roading	A good internal road with all operational areas served. This minimises extraction distance to stacking and lorry transfer points.	Road maintenance required after harvesting operations complete. Only one road in and out of the block.
Pests and disease	The only positive in this is that clear felling in response to plant health notices helps to accelerate transition in forest age structure.	Tree disease has caused large scale, unplanned changes to this long-term forest plan. This threatens the forest environment and reduce the range of tree species available. Current risks include: *Phytopthora ramorum* infection in larch. Ash chalara (Hymenoscyphus fraxineus) in ash. Red-band needle blight (Dothistroma pini) in pines. Large scale clear fell will increase presence of the Large pine weevil (Hylobius abietis). A fallow strategy after felling should limit this.
Deer & Sheep	In low numbers, deer are a natural part of the ecosystem and contribute to habitat engineering.	The presence of browsing animals in this forest is currently too high to guarantee long term success with natural regeneration. Adequate protection to guarantee success with palatable tree species will require additional investment in deer fencing and boundary stock fences.
Landscape	The plant health clearfells are unplanned but will speed up process of removing some harsh forest edges and changing tree species away from sitka spruce.	Clearfells associated with *P.Ramorum* health notices will cause large, short term, landscape impacts. Some harsh forest boundaries remain which need to be softened. The scale of change will have a negative impact on some aspects of biodiversity such as the woodland bird assemblage.
Public access	Location within Lake District National Park. Existing rights of way and trails, CRoW access throughout forest.	Isolated location means that few visitors reach Scalderskew.

Appraisal of Opportunities and Constraints

1. The plant health issue with larch has unfortunately dominated the management decisions in Scalderskew over the last 3 years, effectively cancelling out the original management proposals for felling and causing unplanned large-scale change. This highlights the impact of tree diseases have on forest structure and the choices forest managers can make. Phytophthora ramorum has removed a good conifer from the planting options whilst Ash dieback (Hymenoscyphus fraxineus) has removed ash (Fraxinus excelsior) from the options for native woodland. The remaining larch still present in Scalderskew will be removed through thinning operations are proposed for 2024 and 2025 in compartments 2802 and 2804 in order to reduce the impact on the forest as a habitat zone. This strategy seeks to allow the restocking phase to establish on the open felled sites before the remaining spruce areas are removed.

2. The plant health felling presents an opportunity to bring restocking forward on an equally large scale. The primary long-term objective for the forest is to move towards a heavily broadleaved forest composition. While having a large, short-term landscape impact, this provides opportunity to restructure the forest over the period of the plan with the added benefits of increased tree species diversity and the introduction of continuous cover management silvicultural systems across the whole forest.

3. Soil and climate modelling indicates that forest development types[4] for mixtures using long and short-lived broadleaves combined with Scots pine, Norway spruce and some of the shade tolerant conifers, such as Silver fir and Western red cedar will be suitable Scalderskew. This provides some good options for the future which can be managed using silvicultural thinning interventions that should remain self-financing.

4. Sitka spruce will continue to naturally regenerate in Scalderskew forest. The use of silvicultural thinning interventions allows for a mechanism to manage Sitka out of the forest over time and using a cost neutral approach. Operational planning much stretch to incorporate removal of Sitka from the management of the open habitat zones in the same visit.

5. Deer and sheep. The long-term ambition to transform Scalderskew into a largely broadleaf woodland remains in place and the recent felling provides an opportunity to restructure the on a shorter timescale than previously anticipated. Restocking with palatable species can only be achieved using deer fencing and an effective culling programme. Boundary walls and fences must effectively exclude sheep in order to secure this objective. This is essential to be able to introduce the most basic woodland habitat species such as bird cherry, hawthorn and hazel.

Part 4 Objectives and Proposals

The following objectives have been identified based on Forestry England National Policy, 'Growing the future: 2021-2026'.

Table 4: Forestry England goals supported by this Forest Plan

Growing the future vision	How Forest Plan delivers
For Wildlife *'Continuing action to protect, improve and build the resilience of our most special habitats, including ancient woodlands and Sites of Special Scientific Interest.'* *'The rich, diverse and connected habitats in the nation's forests will continue to be improved and enhanced by our sustainable forest and land management.'*	Expansion of the continuous cover principles in existing spruce crops will allow for retention of forest cover, moving away from large clearfells. Silvicultural thinning will provide the opportunity to create multi-storied forest structure. Moving the forest towards a larger broadleaf component woodland will increase habitat diversity for forest dependent species. Restoring native woodland adjacent to Worm Gill will increase stability of the bank and provide natural shading to benefit of spawning fish.
For Climate *'We will offer over one million cubic metres of sustainable timber to market each year, maintain world-class forest management practices, externally accredited to international standards'.* *'greater structural and tree species diversity in the nation's forests to support adaptation to climate change'.* *'Continuing to restore and help our habitats and landscapes to adapt, which will support their role in carbon absorption and biodiversity resilience and tell the story of its place in productive forestry'.*	This plan ensures that Scalderskew will continue to provide a level of timber production and long-term carbon retention. Timber production will be lower than under the old clearfell strategy, but this will allow for smaller more regular thinning interventions to feed timber out of the forest reducing the overall impact of lorry traffic and the scale of habitat impact. Restocking with a variety of native species and conifers as nurse crops, to diversify the forest and build resilience to future plant health risks to woodlands.
For People *'We will increase the diversity of visitors to the nation's forests.'* *'we will provide public access to all our forests and woodlands where there are no legal or safety restrictions…'* *'we will provide public access to all our forests and woodlands where there are no legal or safety restrictions…'*	Increased landscape diversity through new tree species planting will improve the visual appeal of the forest for visitors. Adjustments to the forest edge will improve the visual fit of the forest in the surrounding landscape. Continue to maintain a low-key recreation approach. Historic features will be surveyed for and protected during the planning and implementation of forest operations.

[4] Forest Research Agency, 2021. Forest Development Types. www.forestresearch.gov.uk/tools-and-resources/fthr/forest-development-types

Part 5 Forest Plan Maps for Scalderskew

- Map 1 Location – 1:50,000 scale showing location in context of other woodland.
- Map 2 Current Species – species composition in 2023/24.
- Map 3 Yield Class – representing the productivity of the current species.
- Map 4 Wind Hazard Class – indicating the exposure value of the sites.
- Map 5 Conservation & Heritage – statutory and non-statutory conservation and heritage features.
- Map 6 Access & Recreation - formal public rights of way.
- Map 7 Operations – showing felling proposals and areas managed under low impact silvicultural systems.
- Map 8 Future Species – representing the 20+ year vision for future species composition.

Part 6 Forest Plan Outcomes

Restructuring and landscape

Scalderskew is part way through a significant change forced by the need to remove larch infected by *Phytophthora Ramorum*. The impact of this unplanned and unavoidable felling has been significant on landscape and forest habitat interests. The remaining area of larch in the forest will be removed in the coming years through silvicultural thinning interventions (Map 7). This felling has created an opportunity to bring forward the ambition to transition towards a much more diverse woodland with a long-term intention to establish broadleaf woodland (Map 8).

The felling of the northern forest edge allows the process of softening the visually hard forest boundaries to be brought forward. The subsequent increase of open space and mixed broadleaf/conifer planting will help the forest sit more harmoniously in the landscape. Additional tree planting has been taking place on neighbouring land along the Worm Gill and in fields to the west towards Thornholme, which in turn will help to further expand the sense of woodland in the landscape. Illustrations of the transition in forest structure are presented in a separate document.

This plan encourages the forest be managed under low impact silvicultural systems, which rely on thinning interventions and small group felling, rather than large clearfell coupes. This approach will benefit the forest in the longer term by allowing managers to create more structural diversity in the woodland canopy. Controlling browsing by sheep and deer will be essential to achieving aspirations for natural regeneration other than spruce.

Timber production

While timber production is not the primary objective of the forest plan, it is an important product associated with the management of the forest. This in turn contributes to the regional timber business and rural economy.

Harvesting over the next 10 years will primarily focus on continuing to remove larch, before shifting to thinning of spruce species. Clearfelling will continue to be a tool to phase Sitka spruce out of Scalderskew over the period to 2041. Clearfelling Sitka spruce coupes in the riparian zones are the highest priority. This timescale will be reviewed in subsequent plans.

It is estimated that conifer clearfell operations will produce 4,988 m^3 of timber during the 10-year period of this forest plan (2024-2034), with potentially a further 2700 m^3 from thinning. Timber production will rise to c17,200 m^3 in the following period (2034-2044) with the final removal of the current Sitka spruce stands, before falling off significantly after 2044 when the forest is in the early years of the next rotation before thinning can start at year 25 after establishment (approximately year 2059 onwards). All timber will be extracted on the agreed timber transport routes through Gosforth.

Natural capital

Timber represents only one of the products of a successfully managed forest. Natural capital refers to the stock of all natural assets upon which the economy and society is built. Natural capital produces value for people in the form of 'goods' such as timber and 'services' such as climate regulation, carbon sequestration and nature.

The Scalderskew forest plan delivers ecosystem services and other non-market benefits included in biodiversity, climate change mitigation, water, people and landscape including public health and well-being, productivity through increased carbon sequestration, species diversification and climate change resilience, landscape enhancement and increased native woodland and priority habitats.

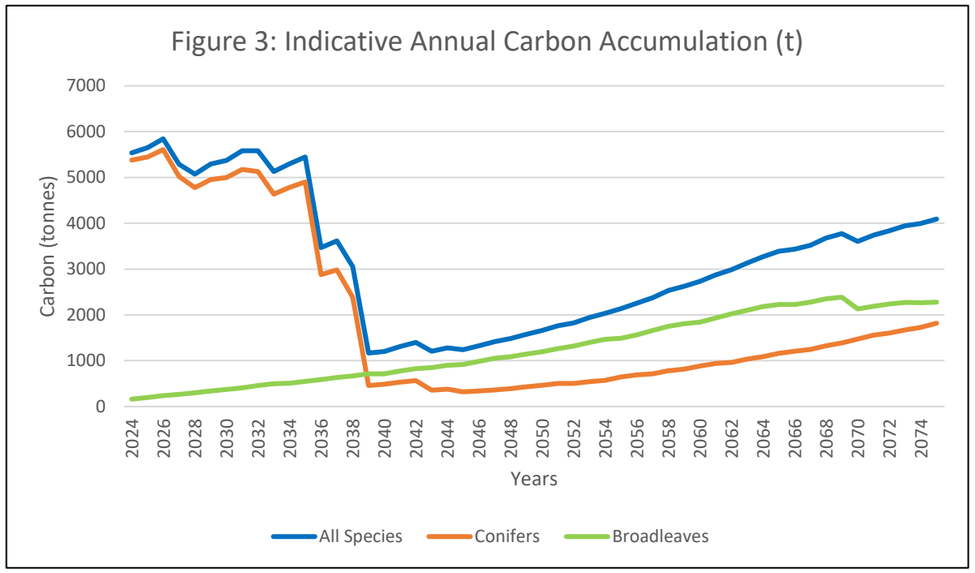
Elements of natural capital in the Scalderskew Forest Plan include:

- The trees in Scalderskew are making a positive contribution to carbon sequestration, but this will reduce as the forest moves through the re-establishment phase (figure 3).

- Benefits to people can be quantified through the area of accessible land in the forest, of which all 98 ha is CRoW dedicated land, coupled with 4.0 km of accessible forest roads and 1.3 km of public bridleway for pedestrians and horse riders.

- The ambition of the plan increases the diversity of tree species and encourages thinning interventions. Both of these actions will increase natural capital by providing greater habitat options for nature (table 1). This can be illustrated in the estimates for how forest structure could improve the population capacity for red squirrels (table 6).

- The establishment of low intervention native woodland adjacent to Worm Gill will create habitats that improve the riparian zone, introducing native deadwood components.



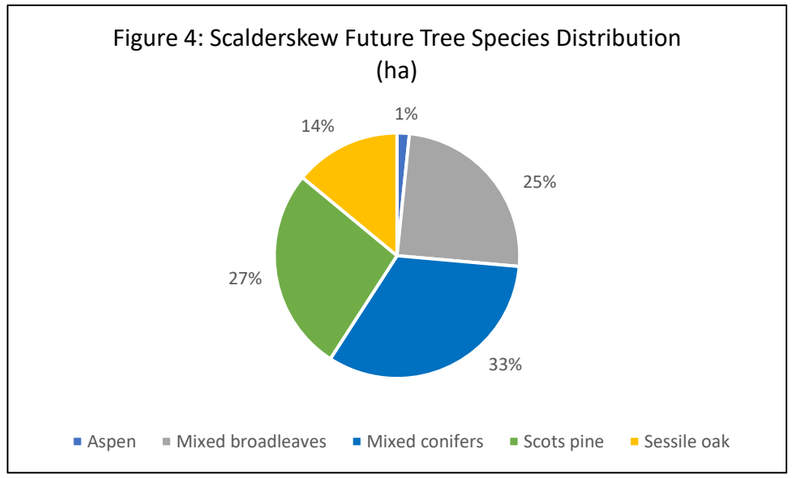


Table 6: Indicative effect of revised forest plan on Red Squirrel capacity (No's animals)		
Forest Plan Version	Estimated Squirrel Capacity (animals)	
	High	Low
Current forest	8.7	3.5
Future forest	24.8	14.4

Future species

The future species indicated below in figure 4 represents how the composition could be in 20 years' time based on the restock proposals in this plan. There is an increase in the broadleaved woodland component from the current 17% to 40% of total woodland cover.

Using silvicultural mixtures of conifers in with the broadleaves as a nurse crop will be provide benefits for the sustainable management, provide a mechanism to keep control over natural regeneration of Sitka spruce through thinning and increase the overall nature and amenity value of the forest.

UKWAS compliance table

Table 7: UKWAS Figures				
	Forest Plan Area (ha)	Forest Plan Percentage	Forest District Area (ha)	Forest District Percentage
Total Forest Plan area	97.9	100%	85908	100%
Total wooded area	86.2	86.2%	58069	67.61%
Area of conservation value*	15.8	16.1%	22052	25.7%
Long-term Retentions and Low Impact Silvicultural Systems	15.2	17.6%	11410	13.3%
Open space (inc. successional)	30.2	30.8%	32559	37.9%
Natural Reserves (semi-natural & plantation)	0.57	0.7%	882	1.5%

*Area of conservation value is the sum of designated sites including Ancient Woodland, Long-Term Retentions, Low Impact Silvicultural Systems, and areas of Natural Reserve.

Part 7 Monitoring plan

The objectives identified in section 4 will be monitored in the following ways.

Table 5: Monitoring plan

Objective	Criteria for success	Assessment
For Wildlife		
Replacement of larch with native broadleaves to improve landscape, resilience, and biodiversity, including adjacent to Worm Gill	Successful restock sites with native species in previous larch and conifer areas. Use of natural regeneration of native broadleaves where possible. Planting adjacent to Worm Gill with native broadleaves. Periodic intervention to remove conifer regeneration from broadleaf areas. Biodiversity - species records. Obtain more data on species/habitats recorded in the forest.	Sub-compartment database updates: monitor for change in forest structure. Year five forest plan review. Report on progress against objectives. Review species records held at Cumbria biodiversity data centre. Record reported species sightings on FE database.
For Climate		
Wood production Conversion of the forest to a majority native broadleaf woodland.	Marketable parcels of timber offered for sale. Forest road infrastructure maintained. Regularly thin the forest when the opportunity presents. Successful restock sites and underplanting operations with minimised pest damage. Successful natural regeneration where appropriate to utilise natural processes, use of native broadleaf trees and active removal of Sitka spruce regeneration.	Contract and sales records. Sub-compartment database updates: monitor thinning records. Plant health notices. Sub-compartment database updates: monitor for felling/restock dates, change in forest structure. Year 21 attribute surveys. Deer culling records. Nearest neighbour damage assessments. Complaints database: sheep incurion. Year five forest plan review. Report on progress against objectives.
For People		
Visual enhancement to visitors. Changes to forest in line with local landscape character. Maintain public access. Protection of historic environment features.	Improve the visual value of the forest by bringing planting back from the current forest edge. Use the full the rotation of the remaining Sitka to allow restocked coupes to establish and develop a new forest canopy. Planting of native broadleaf species which are suitable to the landscape character guidelines. Keep the public rights of way and the forest road open and free of obstruction to pedestrians and horse riders. Opportunities taken during operations to identify any new features of historic interest.	Year five-forest plan review. Report on progress against objectives. Complaints database. Site/operational planning records.

The United Kingdom Forest Standard (UKFS)

The UKFS is the reference standard for sustainable forest management in the UK. The UKFS is supported by a series of guidelines which outline the context for forestry in the UK which provide a basis for regulation and monitoring. These include General Forestry Practice, Forests and Biodiversity; Climate Change, Historic Environment, Landscape, People, Soil and Water.

The Scalderskew Forest Plan is able to demonstrate that relevant aspects of sustainable forest management have been considered and the stated objectives in Part 4 show how sustainable forest management will be achieved. The plan provides a clear means to communicate the proposals and to engage with interested parties and serves as an agreed statement of intent against which implementation can be checked and monitored.

In addition to conforming to general sustainable forest management principles UKFS is demonstrated in the following key areas:

Productivity	Productive potential is optimised through completing the clearfell and thinning programme. Delivering ecosystem services and other non-market benefits included in biodiversity, climate change mitigation, water, people, and landscape.
Structure	Long term future species composition: 71% native species and a 45% open ground meets UKWAS and UKFS requirements. Long term structure will improve through expansion and linking of permanent broadleaved and open habitats.
Silvicultural	Small coupe clearfells will be used to manage some of the remaining spruce crops, while larch will be dealt with through Low Impact Silvicultural Systems (LISS) principles to routinely thin out this component. LISS to become dominant management style once species change to majority broadleaf complete.
Biodiversity	Ecological connectivity improved by extending native broadleaved woodland, and open space will be enhanced ensuring that the area is managed with conservation and biodiversity as the primary objective.
Climate change	Switch to LISS will reduce future soil disturbance. Use of natural regeneration where possible and species diversification will benefit forest resilience.
Landscape	Broadleaf woodland will fit better into the landscape, while the planning process refers to the Local Landscape Character Assessment to inform the appropriate woodland management and design.
Historic	Historic features are recognised, and safeguarding of these will be incorporated into operational management.
People	The Forest Plan is consulted with individuals, the local community, and organisations with an interest in the management of the area.

Water	Quality will be protected through adherence to Forest and Water guidelines as a minimum during any harvesting and forest management operations.

Longer term management proposals

The proposals in this plan continue to build on the actions of previous plans to enable management in Scalderskew forest. It is acknowledged that the current plant health issues in the forest will continue to have a short-term negative impact on the landscape. Future management will focus on the conversion of the forest largely native broadleaf woodland managed using continuous cover systems.

Public access will continue to be feature of the forest into the future, with CRoW access allow and the forest road allowing for quiet exploration and appreciation of the landscape. Visitor numbers to the Lake District National Park have increased over the previous plan period, and this trend is expected to continue. While Scalderskew will always be an extremely quiet woodland owing to its remote location, it is expected that it will become increasingly important to local communities seeking to escape from busier tourist centres.

Forestry England

Title: **Scalderskew Wood - Location**

Date: 22 May 2024

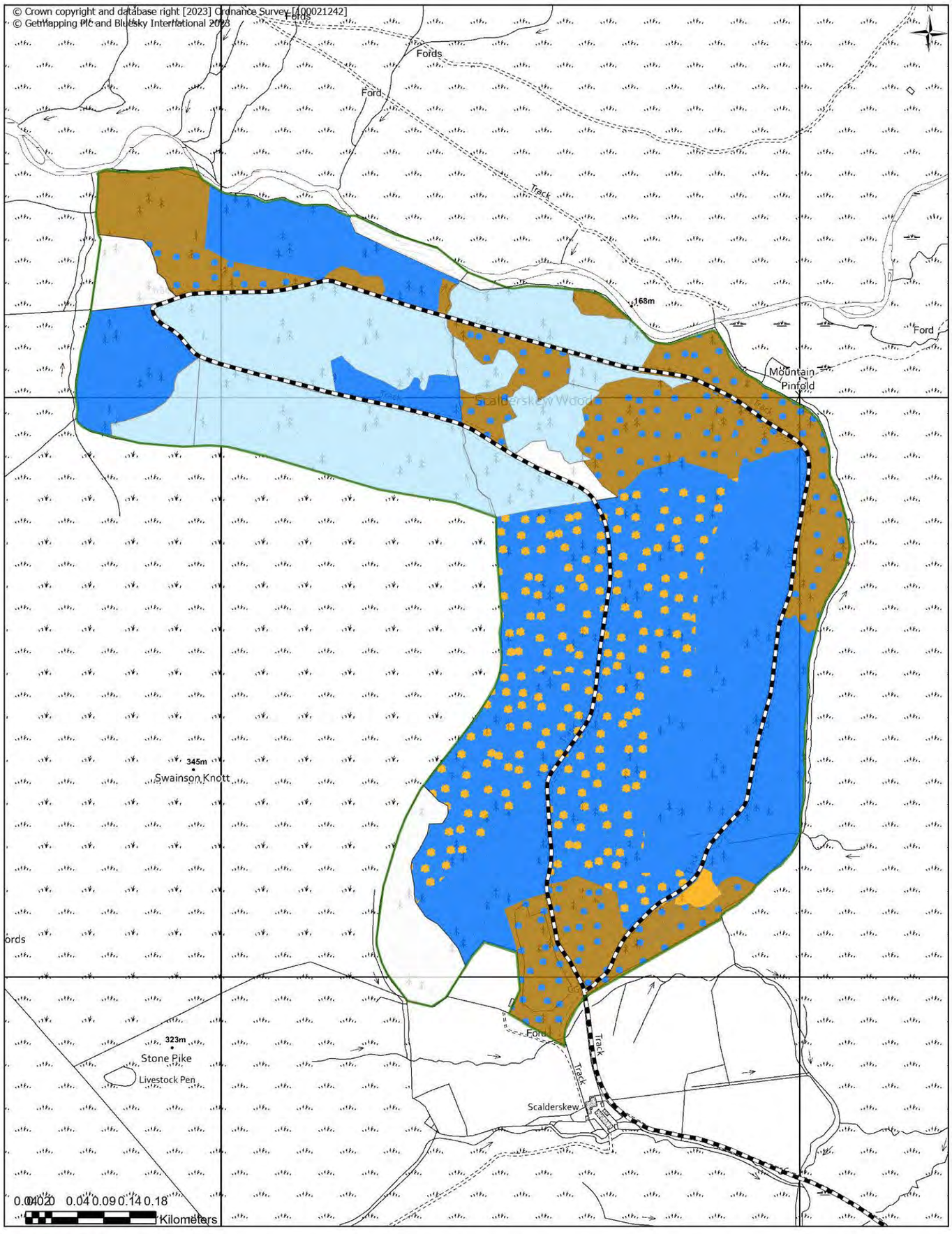
Author: Giles Brockman

Scale @ A3: 1:50,000

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Blocks

Blocks



Forestry England

Title: Current Species
Print Date: 22/03/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

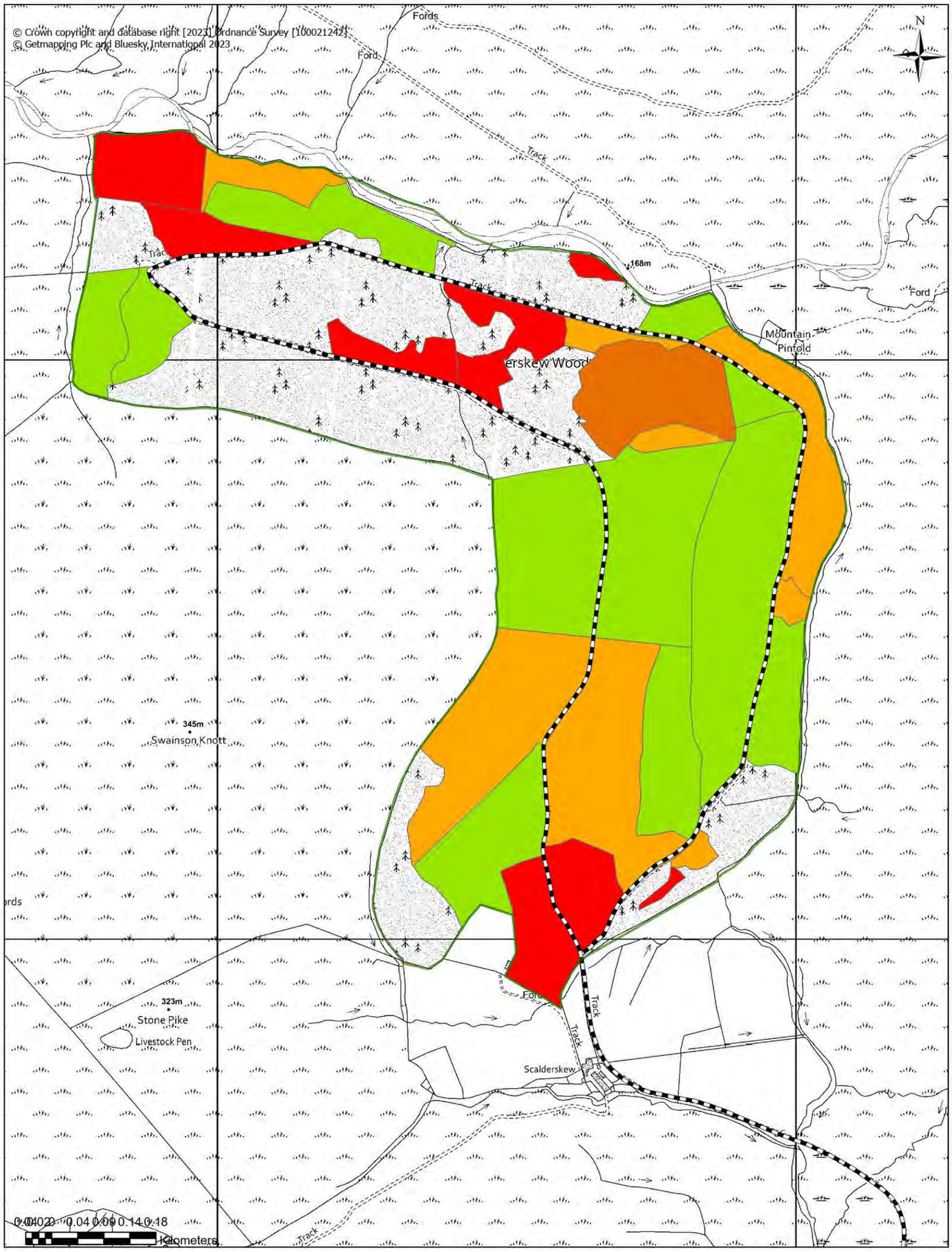
Legend

Scalderskew
Forest Roads

Scalderskew Species

Blvd/Sitka
Felled
Larches
Mixed Broadleaves
Open
Sitka Spruce
Sitka/Larch

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)



Forestry England

Title: Yield Class Distribution
Print Date: 23/05/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Legend

- Scalderskew
- Forest Roads

Scalderskew Species
Yield Class

- 0-4
- 6-8
- 10-12
- 14-16
- 18-22

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)

Forestry England

Title: Wind Hazard Class
Print Date: 30/07/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Legend

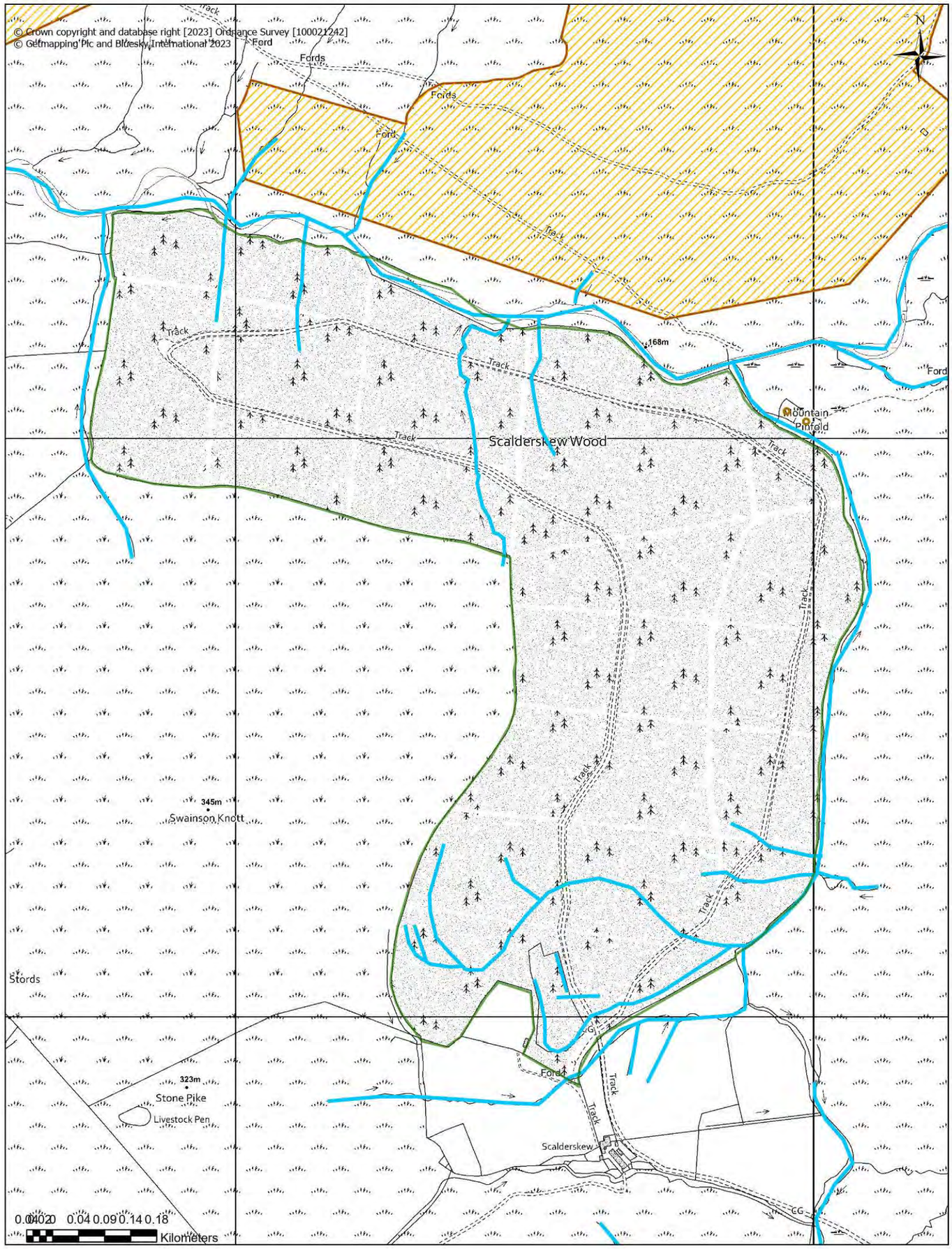
Scalderskew

Layer

Wind Hazard Class

1
2
3
4
5
6

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)



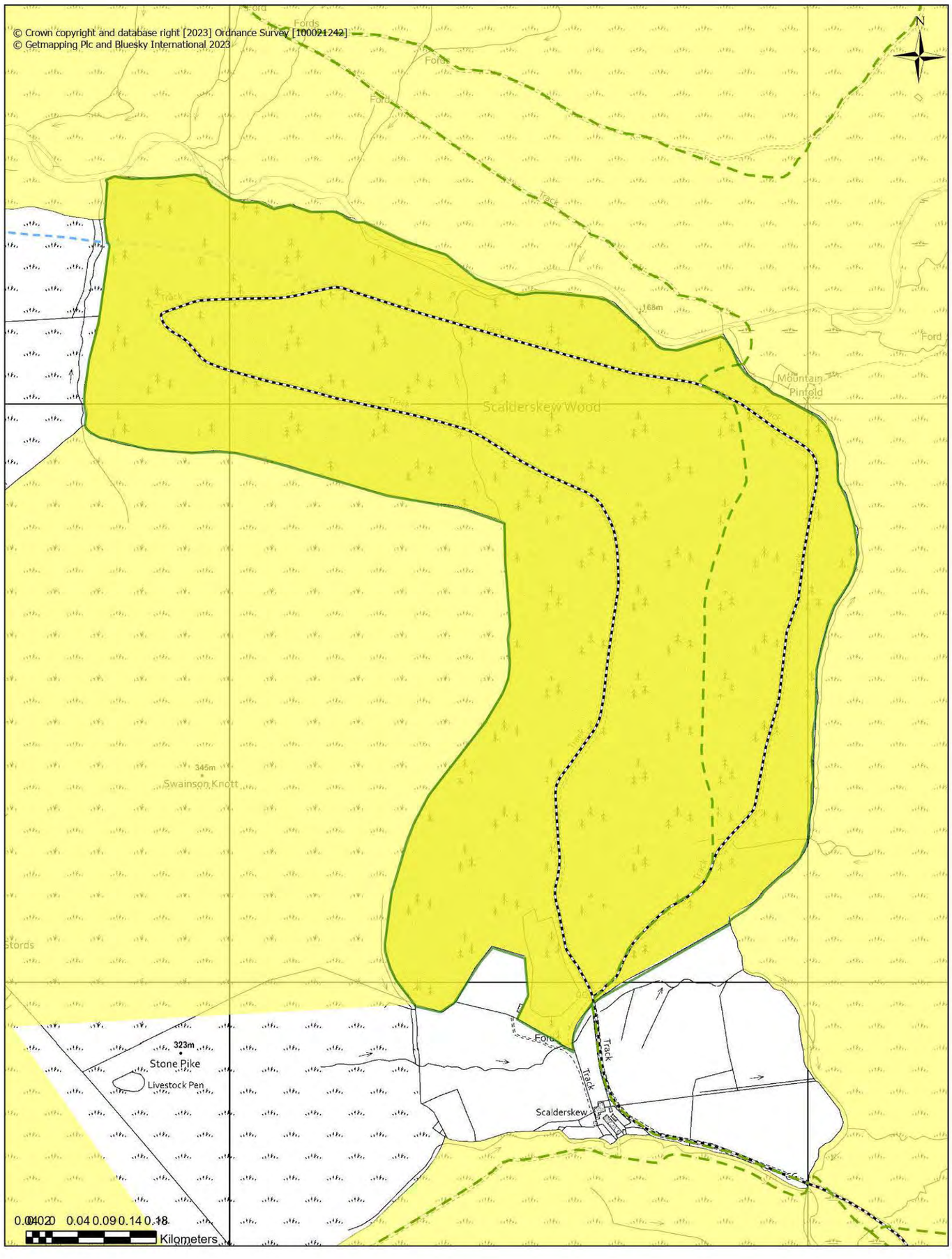
Forestry England

Title: Conservation & Heritage
Print Date: 22/03/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Legend

Scalderskew
Other Woodland
Woodland Type
New Planting
Remnant Riparian Woods
Watercourses
Scheduled Monuments
Heritage

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)



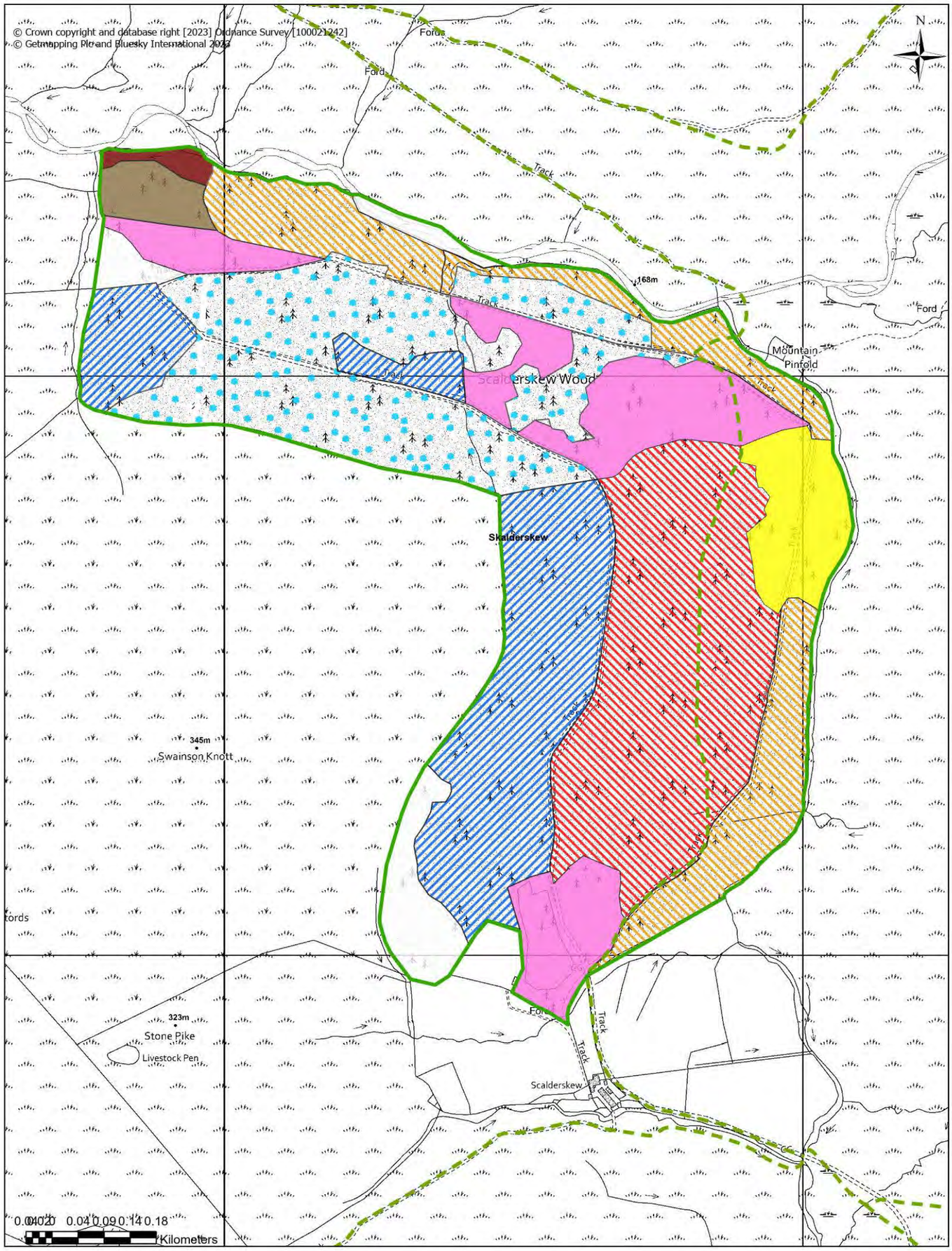
Forestry England

Title: Access & Recreation
Print Date: 22/03/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Legend

- Scalderskew
- Public Right of Way
- Forest Roads
- CRoW S16 Dedicated Land
- CRoW 2000 Open Access Land
- Other Trails

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)



Forestry England

Title: Operations Map
Print Date: 30/07/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Blocks

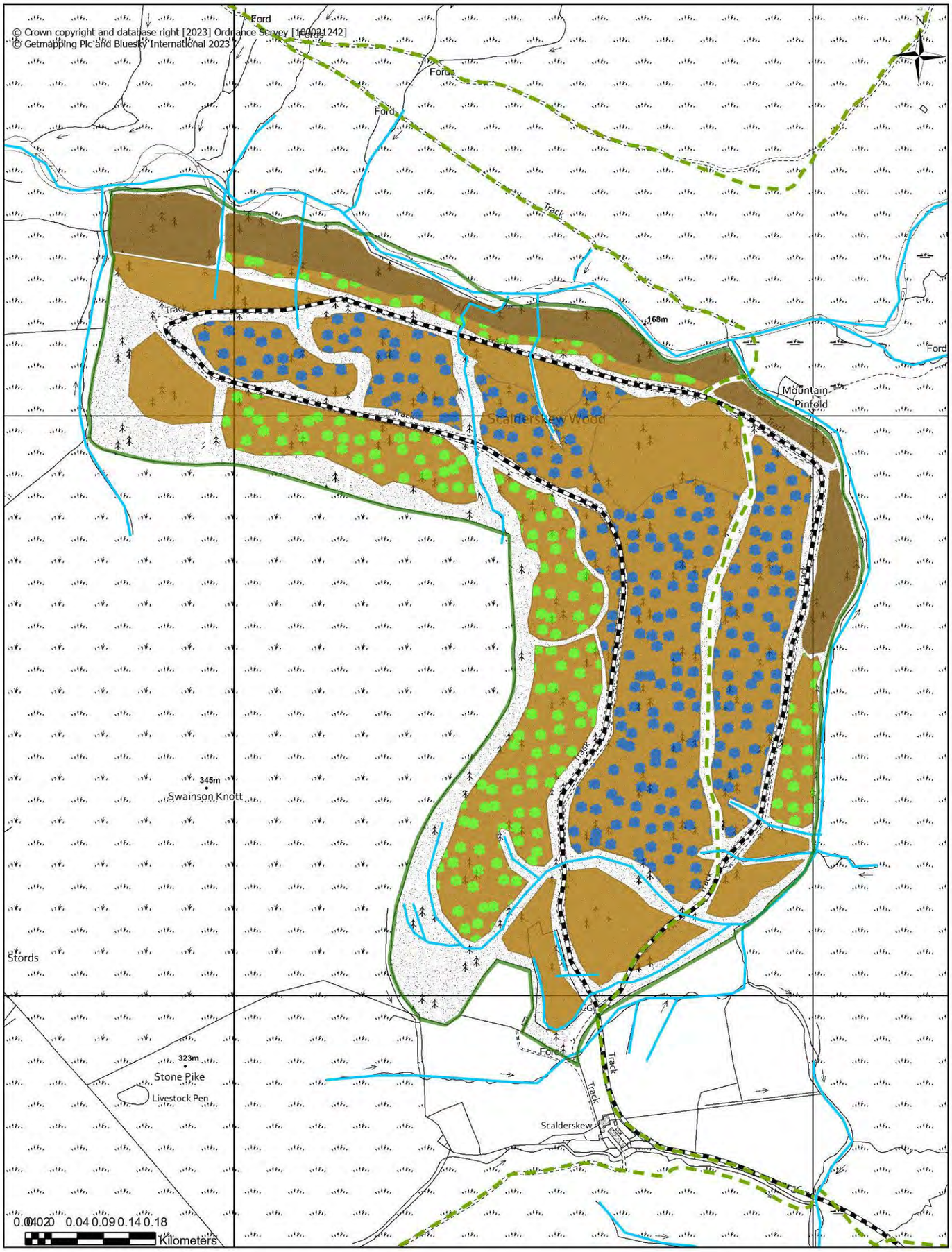
Public Rights of Way

Management Coupes

Felling_Period

- 2022-2026
- 2027-2031
- 2032-2036
- 2037-2041
- 2042-2046
- CCF
- Felled
- Nat Reserve
- Min Intervention
- Open

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)



Forestry England

Title: Future Forest Species
Print Date: 30/07/2024
User: Giles Brockman
Scale: 1:6,000
Scale at A3

Legend

- Scalderskew
- Watercourses
- Public Rights of Way
- Forest Roads

Future Species

- Habitat BL
- MB
- MB/MC
- MB/SP
- Open

Forestry England forests and woodlands have been certified in accordance with the UK Woodland Assurance Standard (UKWAS)