Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Bartaggart

Land Management Plan

2021 - 2031

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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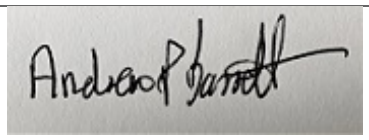
Property details			
Property Name:	Bartaggart		
Grid Reference (main forest entrance):	NX 6870 7940 NX 6947 7870	Nearest town or locality:	Balmaclellan
Local Authority:	Dumfries and Galloway		

Applicant's details	
Title / Forename:	Ms Carol
Surname:	Finch
Position:	Forest Planner
Contact number:	07584336505
Email:	carol.finch@forestryandland.gov.scot
Address:	Forestry and Land Scotland, Creebridge, Newton Stewart
Postcode:	DG8 6AJ

Owner's Details (if different from Applicant)	
Name:	N/A
Address:	N/A

1. I apply for Land Management Plan approval for the property described above and in the enclosed Land Management Plan.
2. I apply for an opinion under the terms of the Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017 for afforestation / deforestation / roads / quarries as detailed in my application.
3. I confirm that the scoping, carried out and documented in the Consultation Record attached, incorporated those stakeholders which the FC agreed must be included. Where it has not been possible to resolve specific issues associated with the plan to the satisfaction of the consultees, this is highlighted in the Consultation Record.
4. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
5. I undertake to obtain any permissions necessary for the implementation of the approved Plan.

Signed, Regional Manager		Signed, Conservator	
FLS Region	South	SF Conservancy	South
Date	04-03-21	Date of Approval	
		Date Approval Ends	

Contents

1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	Bartaggart
Forest blocks included	Bartaggart (Block 85)
Size of plan area (ha)	65.18 ha
Location	See Location map (**Map 1**)

Long Term Vision
This woodland area was planted in 2014 and this plan renewal continues with the long term vision to establish native woodland, maintain open ground and create riparian habitats that interconnect, enhancing the biodiversity value and environmental quality of the plan area, in addition to bringing added local landscape value. This is a site where wildlife should thrive and makes use of these habitats. Key peat-forming bog species, such as sphagnum mosses and cotton grass, become more dominant across the recovering blanket bog site. Carefully managed silvicultural interventions will sustain a healthy and productive broadleaf woodland, capable of generating high quality hardwood timber products.
Management Objectives
1. Continue to protect and enhance open, native woodland and riparian habitats for the benefit of biodiversity and water quality. 2. Continue silvicultural interventions to realise the future potential of high quality hardwood timber products.
Critical Success Factors
• Protection of broadleaves from browsing damage. • Monitoring tree health and, if necessary, taking appropriate silvicultural action. • Removal of non-native invasive species and conifers naturally regenerating from nearby sources.

1.2 Summary of planned operations

Table 1

Summary of operations over the plan period	
Clear felling (gross)	0 ha
Thinning (potential area)	0 ha
Restocking (gross)	0 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	0 m
Forestry quarries	0 ha

The forest is managed to the UK Woodland Assurance Standard – the standard endorsed in the UK by the *Forest Stewardship Council* and the *Programme for the Endorsement of Forest Certification*. Forestry and Land Scotland is independently audited to ensure that we are delivering sustainable forest management.

2.0 Analysis and Concept

The planning process was informed by collecting information about the woodland, which is presented in **Appendix I** and on **Map 2**. During the development of this plan we have consulted with the local community and other key stakeholders, and a Consultation Record is presented in **Appendix III**.

The plan's objectives were analysed against the constraints and opportunities identified during scoping and consultation. Preferred options were then chosen for delivering the objectives and these proposals are summarised on the Analysis and Concept map (**Map 3**).

3.0 Management Proposals - regulatory requirements

This land management plan was produced in accordance with a range of government and industry standards and guidance as well as recent research outputs, recognised at the time of its production. A full list of the current standards and guidance which guide the preparation and delivery of FLS Land Management Plans can be found using the link HERE.

3.1 Designations

The plan area forms part of, includes, or is covered by the following designations and significant features.

Table 2

Designations and significant features		
Feature type	Present	Note
Site of Special Scientific Interest (SSSI)	No	
National Nature Reserve (NNR)	No	
Special Protection Area (SPA)	No	The Barlay Burn drains into Loch Ken SPA approx. 5 km southwest of the plan area
Special Area of Conservation (SAC)	No	
World Heritage Site (WHS)	No	
Scheduled Monument (SM)	No	
National Scenic Area (NSA)	No	
National Park (NP)	No	
Deep peat soil (>50 cm thickness)	Yes	The restored bog site will remain unplanted
Tree Preservation Order (TPO)	No	
Biosphere reserve	Yes	Galloway and Southern Ayrshire Biosphere
Local Landscape Area	No	
Ancient woodland	No	
Acid sensitive catchment	No	
Drinking Water Protected Area (Surface)	No	
Environmentally Sensitive Area (Scotland)	Yes	Stewartry, ESA code 6

The Key Features map (**Map 2**) shows the location of all designated areas and significant features. Any deep peats are indicated on the Soils map (**Map 9**).

3.2 Clear felling

No clear felling operations will take place during this plan period as trees continue to establish. Our coupe management proposals are identified in the accompanying Management map (**Map 4**).

3.3 Thinning

No thinning operations will take place during this plan period as trees continue to establish. However, thinning will be key to the future silvicultural objectives of the site. Therefore, indicative areas for thinning under subsequent revisions of the plan period are identified on the Thinning map (**Map 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 MAI, or 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.

3.4 Other tree felling in exceptional circumstances

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 over the plan area covered by this approval is 40 cubic metres per calendar year.

A record of the volume felled in this way will be maintained and will be considered during the five year Land Management Plan review.

[N.B. Trees may be felled without permission if they: are of less than 10 cm diameter at breast height (1.3 m); pose immediate danger to persons or property; are completely dead; or are part of Authorised Planning Permission works or wayleave agreements].

3.5 Restocking

There is no proposed restocking during this plan period. The accompanying Future Habitats and Species map (**Map 6**) details the intended trajectory of species and habitats beyond the plan period.

3.6 Species diversity and age structure

As shown in the table below, there is a diverse mix of (native) broadleaved species across the plan area.

Table 3

Woodland composition	
Species	**Area (ha)**
Aspen	6.81
Beech	12.72
Common alder	1.78
Downy birch	2.29
Grey willow	1.98
Hazel	1.02
Rowan	0.82
Sycamore	11.67
Open	18.48
Blanket bog	7.61
Total	**65.18**

Owing to first rotation planting in 2014, there is currently little age-class variety across the plan area. Structural diversity will be realised over time by the differing growth rates of planted broadleaves and also as naturally regenerating broadleaves flourish.

Table 4

Plan area						
Species	**Current**		**Year 10**		**Year 20**	
	Area (ha)	**%**	**Area (ha)**	**%**	**Area (ha)**	**%**
Conifers	0.0	0.0	0.0	0.0	0.0	0.0
Native broadleaves	7.89	12.10	7.89	12.10	7.89	12.10
Other broadleaves	31.20	47.87	31.20	47.87	31.20	47.87
Open ground	26.09	40.03	26.09	40.03	26.09	40.03
Total	**65.18**	**100.00**	**65.18**	**100.00**	**65.18**	**100.00**

Chart 1

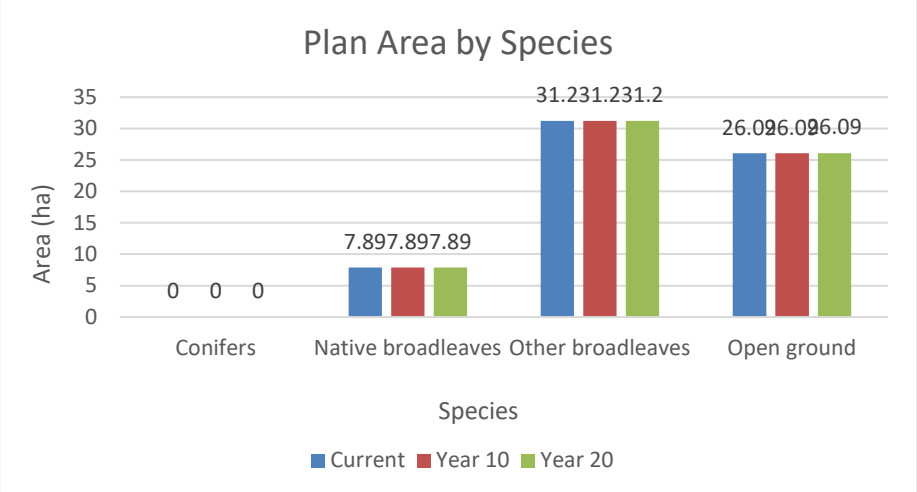
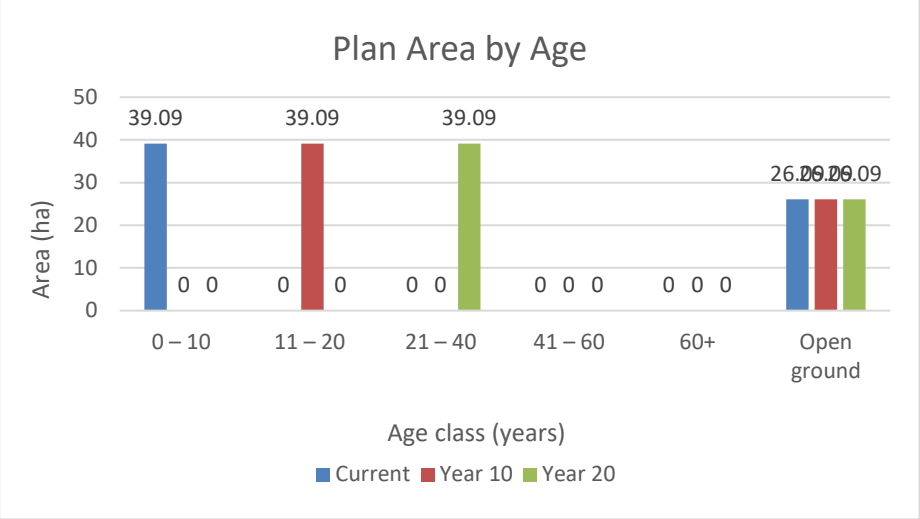


Table 5

Plan area						
Age class	**Current**		**Year 10**		**Year 20**	
(year)	**Area (ha)**	**%**	**Area (ha)**	**%**	**Area (ha)**	**%**
0 – 10	39.09	59.97	0.00	0.00	0.00	0.00
11 – 20	0.00	0.00	39.09	59.97	0.00	0.00

Plan area						
21 – 40	0.00	0.00	0.00	0.00	39.09	59.97
41 – 60	0.00	0.00	0.00	0.00	0.00	0.00
60+	0.00	0.00	0.00	0.00	0.00	0.00
Open ground	26.09	40.03	26.09	40.03	26.09	40.03
Total	**65.18**	**100.00**	**65.18**	**100.00**	**65.18**	**100.00**

Chart 2



3.7 Road Operations and Quarries

There are no planned new roads, road re-alignments or upgrades, and quarrying for this plan period. Future timber haulage routes are shown on the Road Operations and Timber Haulage map (**Map 7**).

3.8 Environmental Impact Assessment (EIA)

Any operations requiring an EIA determination are shown in the table below. If required, the screening opinion request form is presented in **Appendix II**.

Table 6

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation	No	No proposals for this 10 year period.
Deforestation	No	(All of the area was planted in 2014 under the original

EIA projects in the plan area		
Forest roads	No	plan.)
Forestry quarries	No	

4.0 Management Proposals – guidance and context

Management proposals – guidance and context
Silviculture
Clear felling
Clear felling is currently the appropriate management type for productive broadleaves across the plan area. Should the objective to thin over an extended rotation to produce quality broadleaf stock be successful, it is likely the management type will change to a low impact silvicultural system (LISS) following the first thin, with some areas possibly continuing under shorter rotation clear fell management to accommodate wood fuel production. There are no clear fell operations proposed for this plan period. Refer to **Map 4** for management proposals.
Thinning
With a combination of good quality soils and low to moderate DAMS scores (14 – 16) across planted areas, there is good potential for thinning at Bartaggart. Thinning practice will contribute to the production of high quality timber products across all planted coupes. **Map 5** indicates areas which may be thinned during subsequent plan periods. No thinning operations will take place while trees continue to establish during this plan period, however, all forested coupes have been included for the purposes of transparency and future consideration.
Low Impact Silvicultural System (LISS)/Continuous Cover Forestry (CCF)
Native broadleaf coupes (85005, 85006, 85007 & 85008) will ultimately be managed under CCF techniques; however, no operations are planned during this plan period. CCF coupes cover predominantly native broadleaf woodland, managed under group selection to allow small gaps to be established and a more varied woodland structure to develop. This approach will be complimented by thinning where appropriate, and should hopefully create new

Management proposals – guidance and context
marketing opportunities, especially for fire wood. The primary objectives of conservation and the development of native woodland in these areas will not be compromised by management interventions. Refer to **Map 4** for management proposals.
Long term retentions (LTR) / minimum intervention / natural reserves
There are no LTR, minimum intervention or natural reserve coupes identified within this plan revision.
Tree species choice
The objective of the plan is to continue developing a woodland with a diverse mix of broadleaf species for timber products, biodiversity and environmental benefits. The woodland can be split into the following planted areas: **Productive broadleaves (coupes 85002, 85003 & 85004):** Productive broadleaf species (i.e. aspen, beech, sycamore) planted in 2014 continue to establish. While currently managed under clear fell, it is expected management will change to LISS following the first standard thin during the next plan period (2031 – 2041). To complement the long-term objective of producing high-quality hardwood timber, ongoing beat up operations will likely be with an Aspen/Sycamore mix. **Native broadleaves (coupes 85005, 85006, 85007 & 85008):** Native broadleaves (i.e. alder, birch, hazel, rowan and willow) continue to establish in wetter areas. Naturally regenerating broadleaves will be retained, while invasive species and self-seeded conifers will be removed. These areas will be managed under LISS for the provision of continuous cover, thus encouraging a diverse woodland structure
Natural regeneration
Naturally regenerating birch is establishing in coupe 85005, likely from seed sources in adjacent woodlands. Natural regeneration of broadleaf species in continuous cover areas will be retained. Recognising the importance of the wider catchment for fish species, and as advised by the Galloway Fisheries Trust (refer to **Appendix III**), the occurrence of naturally regenerating broadleaf species along watercourses will be accepted. This will positively contribute towards

Management proposals – guidance and context
bank stabilisation and improving the aquatic habitat for fish as water temperatures rise as part of a changing climate. There is currently 40 % of open ground in the plan area so there is scope for increased woodland cover without compromising UKFS requirements. Natural regeneration will be managed so that any negative impact upon designated, protected or promoted habitats, species, landscapes, historic environment features, and catchments within or adjacent to the LMP area is minimised and, where possible, mitigated. There is a possibility of self-seeding conifer from sources along the roadside and on adjacent land. This will be monitored periodically and cleared to assist with the continued establishment of broadleaves and to maintain the integrity of the blanket bog. It will be important that any silvicultural interventions avoid damage to young broadleaf trees.
New planting
There is no new planting proposed during this plan revision. If necessary, operations will be limited to beat up of the productive broadleaf crop using an Aspen/Sycamore mix.
Protection
Deer fencing surrounds planted areas to assist with tree establishment, however, there have been instances of deer being found within the fence line. As such, supplementary deer management will be conducted in line with the expectations of a responsible land owner. However, some level of browsing will be beneficial to the management objectives of this plan in keeping any naturally regenerating conifer under control. Browsing pressure will be monitored by the FLS regional wildlife team and assessed for control measures as required in line with the FLS Deer Management Strategy. Following successful establishment of trees, it is intended to lower the deer fence to stock fence height. Despite grouse markers being in place, removal of the upper fencing will complement the objective to benefit biodiversity by lessening potential injury to in-flight birdlife. Lowering operations will not be appropriate until phase two of this plan and, dependent on broadleaf establishment, may not be executed until the subsequent plan renewal.
Road operations
There are no road operations required for this plan revision. Road planning and construction will be required during the subsequent plan period ahead of thinning operations. **Map 7** shows the main entry points and Timber Transport Routes.

Management proposals – guidance and context
Biodiversity
Designated sites
There are no Site of Special Scientific Interest (SSSI) or Special Area of Conservation (SAC) sites within the plan area.
Native woodland
Planted native woodland equates to 12 % of the plan area. This is predominantly low density woodland between hills and in riparian zones, and consists of common alder, downy birch, hazel, rowan and grey willow planted in 2014. Birch is naturally regenerating in coupe 85005, with adjacent woodland being the likely seed source. The area will be periodically monitored for invasive species, including self-seeded conifer, undertaking removal where necessary to ensure native broadleaf establishment and future growth is not compromised. Continued establishment of native woodland and ongoing management under LISS will improve connectivity with neighbouring woodlands and complements the objective to benefit local biodiversity and the environmental quality.
Ancient woodland / PAWS
There are no ancient woodlands or PAWS within the plan area. The closest area shown on the Ancient Woodland Inventory is shown as Long – Established (of plantation origin) and lies to the west outwith the plan area.
Protected and priority habitats and species
All forest management operations involve a planning process before work commences which includes checks for wildlife and important habitats. Work plans will be adjusted if necessary to avoid disturbance, and opportunities to further protect or enhance species and habitats will be identified. **Blanket bog (Coupe 85001):** The area of blanket bog identified on **Map 3** is recovering well following restoration by drain blocking in 2013, with abundant typical bog species now present (i.e. cotton grasses and sphagnum mosses). Records held by the South West Scotland Environmental Information Centre indicate the bog site may be important for invertebrate species. The area will be periodically monitored for invasive species, including self-seeded conifer, undertaking removal where necessary. **Badger:**

Management proposals – guidance and context
Badger are known to be present on site and any setts will be protected during all future operations, with licences acquired if necessary. **Birds:** There are a number of bird species recorded across the site and wider area (i.e. approx. 1 km to the east is Knowetop Lochs nature reserve). Low-impact management of the establishing woodland will continue as a source of food and shelter for birdlife in the long term. Raptor hunt in the area, however, there are currently no known nest sites. The recovering bog and maintained open ground will be help to increase habitat biodiversity in the area, benefitting birdlife, in addition to numerous plant and invertebrate species. While records unconfirmed in recent years, there has historically been a black grouse lek approximately 1 km north of the site. Owing to road traffic and human activity surrounding the site, it is unlikely their range will encompass the plan area. However, grouse markers are fitted to the deer fence to prevent injury; the markers are in good condition and will be removed when the fence is lowered.
Open ground
Open ground, including the restored bog, contributes to the habitat mosaic of the plan area and will be maintained to benefit biodiversity and environmental quality. Through the delivery of this plan FLS will manage natural regeneration in such a way as to ensure that, where practicable, it does not significantly impose a negative impact upon the objectives of the plan. Natural regeneration will be managed so that any negative impact upon designated, protected or promoted habitats, species, landscapes, historic environment features, and catchments within or adjacent to the LMP area is minimised and, where possible, mitigated.
Dead wood
Owing to the immature nature of the woodlands across the plan area, opportunities for identifying deadwood potential will be limited during this plan period. Opportunities for retaining or creating deadwood will be identified during the planning of all future felling and thinning works, favouring areas with the highest deadwood ecological potential.
Invasive species (INNS)
The plan falls within SEPA's River Dee (Solway) zone for North American Signal Crayfish (NASC). As such, operational planning and on-site activities will follow FLS Invasive Non-Native Species (INNS) policy.

Management proposals – guidance and context
Rhododendron ponticum, is present in low densities in private woodland adjacent to the plan area. While there are no current signs of *R. ponticum* seeding within the plan area, we will continue to monitor the area and will endeavour to control known patches of invasive non-native plants under the FLS INNS policy.
Historic Environment
Designated sites
There are no designated historic environment sites.
Other features
There are two undesignated features present on the First Edition OS Map but absent from subsequent editions: a farmstead and fodder store (refer to **Appendix III: Consultation Record** and **Appendix IV: Historic Environment records**). The farmstead is visible using Scottish Government LIDAR data, however, there are no obvious upstanding structures. Neither site is likely to include buried archaeological deposits of significance. There are also a series of drystane dykes demonstrating an old field system that intersects and borders the plan area. Operational planning for all work activities will highlight these features and will be managed in line with the UKFS. Advice will be sought from the local authority's archaeologist and/or HES where necessary. Refer to **Map 2**.
Landscape
Located immediately south of the A712 public road, the block sits well across low ground, gentle slopes and hilltops. The area lies within a landscape characterised as '169 – Drumlin Pastures' by NatureScot (formerly 'SNH', 2019: *SNH National Landscape Character Assessment*) and the design is generally in keeping with NatureScot's descriptions. Power lines and dykes intersect the site (refer to **Map 2**). It is expected these angular lines will become increasingly softened as the woodland continues to mature and future LISS management will foster this in the long term by promoting continuous and a structurally diverse woodland cover.

Management proposals – guidance and context
There are no operations planned during this plan period and therefore only incremental growth will alter the visual change of the area. The block sits within the Stewartry Environmentally Sensitive Area (Scotland).
People
Neighbours and local community
There has been relatively little community interest in the development of this plan. However, the feedback received via our online survey (refer to **Appendix III: Consultation Record**) was in favour of benefitting biodiversity and supportive of the plan's objective to protect and enhance habitats across the site through the ongoing establishment of woodland and connectivity with adjacent woodland. It is important that information about the management of the forest is shared with the local community whenever opportunities arise, or when there are significant issues to communicate.
Public access
Scotland's outdoors provides great opportunities for open-air recreation and education, with great benefits for people's enjoyment, and their health and well-being. The Land Reform (Scotland) Act 2003 ensures everyone has statutory access rights to most of Scotland's outdoors, if these rights are exercised responsibly, with respect for people's privacy, safety and livelihoods, and for Scotland's environment. Equally, land managers have to manage their land and water responsibly in relation to access rights and FLS will only restrict public access where it is absolutely necessary, and will keep disruption to a minimum. The plan area is not considered a core recreation area: there are no recreational trails, nor are there any recorded Core Paths or Rights of Way. There is limited availability for car parking in/surrounding the site due to shared/private driveways, neighbouring residences, and the public road network. Informal foot access is possible via gates in the fence line and any management operations in this plan period are unlikely to impede this access.
Soils
Ground preparation
There are no ground preparation works planned for the duration of the plan period.
Deep peats

Management proposals – guidance and context
There will be no ground disturbance of the deep peat areas during the plan period. Having previously undergone restoration works, the blanket bog site will remain unplanted.
Water
Drinking water
Scottish Water records indicate there are no drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity. Likewise, there are no Scottish Water assets (including water supply and sewer pipes, water and waste water treatment works, reservoirs, etc.) in the area. All private drinking water supply points and pipes are recorded in our Forester Web GIS (included in **Map 2**). This is consulted during the work plan process for all forest operations to ensure their protection. Affected neighbours will be consulted prior to any works commencing. Features will be clearly marked on all contract maps, as well as on the ground. The design of the future forest has incorporated an open space or broadleaf buffer of at least 50 m around the two known supply points to minimise future disturbance.
Watercourse condition
The Barlay and Shirmers Burns have been impacted by an unknown pressure on the fish population, causing reduced water quality that predates forestry operations at Bartaggart in 2014. Galloway Fisheries Trust have indicated there is an impassable barrier to migratory fish (possibly a waterfall) preventing access to the Barlay Burn; the approximate location is at OS grid reference NX 6711 7742. It is envisioned the restored bog, continued woodland establishment, and future wider management under LISS will assist in improving water quality. All management operations will adhere to the 'Forests and Water' requirements and guidelines in the UKFS.
Flooding
The plan area is situated upstream of the Castle Douglas Potentially Vulnerable Area (PVA), with Loch Ken Caravan Park and the township of Castle Douglas as known flood points, and within the wider Castle Douglas-Dee drainage catchment. There is approximately 40% forestry (public and private) in the large catchment; of which Bartaggart is a very small component.

Management proposals – guidance and context
Crossing the site is the Barlay Burn which, according to SEPA's flood map, demonstrates a high likelihood of localised flooding immediately south of Bartaggart Hill (OS grid reference NX 6860 7848) and further downstream at Blowplain Hill (OS grid reference NX 6687 7729) but there are no areas known to be of flood concern. There will be no felling activity during this plan period and, also owing to the scale of the site in context of the wider catchment, it is not anticipated that any operational activity will have an effect within the wider catchment. The restored bog site and the ongoing establishment of the woodland is likely to have a small but positive effect within the Castle Douglas-Dee catchment. It is recognised that the Barlay Burn flows into the Galloway Glens Landscape Partnership area and FLS welcome potential opportunities to collaboratively mitigate and manage flood within this catchment.

For enquiries about this plan please contact:

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Appendix I Description of Woodlands

Description of woodlands
Topography and Landscape
The plan area is represented by the NatureScot landscape character type '169 – Drumlin Pastures' typified by elongated, rounded hummocks, improved grassland pasture, some wetland and deciduous woodlands along watercourses and between drumlins. Located immediately south of the A712 public road, the area is situated across low ground, gentle slopes and hilltops (Knockcrosh, Bartaggart Hill, Fairy Hill, Red Hill and Brown Hill). It rises from an elevation of 140 m in the Barlay Burn valley to a high point of 185 m on Knockcrosh in the north.
Geology and Soils
The block lies on rocks of the Silurian System and Llandovery Series, mostly folded shales and greywackes. Rock has been quarried on an adjacent property and Knockcrosh Hill has some old workings. In areas of lower relief the underlying geology is covered with a coarse texture glacial moraine and areas of deep peat. Outcrops of shale bedrock are common on the flatter glaciated terrain. Scotland's environment web's 'Land Capability for Forestry' classification for the plan area is F4 (land with moderate flexibility for growth and management of tree crops), with northern coupes predominantly F5 (land with limited flexibility for growth and management of tree crops). The soil moisture regime across the plan area ranges from 2 (wet) to 5 (fresh), and the soil nutrient regime ranges from 0.5 (very poor) to 4 (rich). Soil types are shown on **Map 9.**
Climate
The climate is warm and moist throughout. The climate station at Glenlee has recorded maximum average temperatures of 19.6 °C (summer) and 6.6 °C (winter) and average monthly rainfall ranging from 83 mm to 209 mm. FLS data indicates an accumulated temperature (day degrees over 5 °C) range of ~1674 to ~1710 and a moisture deficit (evaporation minus precipitation) ranges from 98 mm to 102 mm.

Description of woodlands
Data from the UK Climate Projections 2009 (based on the central estimate for medium emissions) shows that by the 2080s this area may be up to 4 °C warmer in the summer and up to 3 °C warmer in the winter. It could also experience up to 30% less precipitation in the summer, but up to 30% more in the winter. This means there are likely to be warmer, wetter winters and warmer, drier summers.
Hydrology
Map 2 shows all watercourses, open water and known water supplies. The plan area sits within the River Dee (Solway) catchment of the Solway Tweed river basin district. The Barlay Burn flows through the plan area, draining southwest into Loch Ken. **River:** Barlay/Shirmers Burn **Condition:** Poor **Impacted condition / Responsible pressures (and activity):** Ecological condition due to an unknown pressure on water animals and plants. SEPA's activity is to be determined and the deadline for improving the condition has been extended to 2027.
Windthrow
Map 10 illustrates the DAMS measurements for the forest. There is moderate exposure across the area, with scores ranging from 14 - 16.
Adjacent land use
The plan area is immediately bordered by agricultural grazing land (including the open pasture north of the bog site that was sold during the last plan period), small native woodlands, and private residences (with associated holiday cottages and equestrian centre). The northern boundary runs parallel to the A712 and a minor road ('consultation' route and Timber Transport Forum road number U137S) runs along the eastern boundary. The Ancient Woodland inventory shows there are blocks of upland birchwood in close proximity to the plan area. These are a long-established of plantation origin (LEPO) site at Troquhain Plantation (OS grid reference NX 683 794) and an ancient woodland of semi-natural origin (ASNW) site at Old Wood (OS grid reference NX 680 791), approximately 1 ha of which appears on the Roy map (grid reference NX 682 792). Native Woodland Survey of Scotland (NWSS) data shows there are small immature and established upland birchwood, unidentifiable and wet woodlands neighbouring the plan area. Wet woodlands are associated with the Barlay Burn along the southern edge of the block.

Description of woodlands
There is some private forestry within the wider area and the nearest neighbouring FLS forest is Corriedoo, which is located approximately 2 km to the north. Knowetop Lochs nature reserve lies approx. 1 km to the east along the A712.
Public access
The plan area supports low level public access, with limited parking sites and no recreational infrastructure. There are no recorded Core Paths or Rights of Way across the plan area. Informal foot access is possible via gates in the fence line. There are several residences situated around the plan area, some of whom share access rights along site entry routes (see **Map 2**).
Historic environment
There are no designated heritage features within the forest. There are several drystane dykes crossing coupes and along the block boundary. There is a historic farmstead immediately south of Brown Hill; OS grid reference NX 6976 7871. There are no upstanding remains, with cut stone at ground level covered with ground vegetation. **HER Archaeology Reference Number:** MDG15900 **Name:** BROWN HILL / BROWNHILL **Site Type:** FARMSTEAD **Summary:** The farmstead, shown on the first edition Ordnance Survey map of 1854 is not shown on the second edition map of 1893, and there are no obvious visible signs of it on recent aerial photographs. No Historic Environment Record (HER) record was found for the hay ree (fodder store) north of Bartaggart Hill; grid reference NX 6880 7905. There is a stone pile along the fence line, which is spaced away from the planted tree line and not attached to the dyke, but no obvious upstanding structure. Both the farmstead and fodder store are present on the first edition OS map but absent from subsequent edition (see **Appendix III: Consultation Record** and **Appendix IV: Historic Environment records**).

Description of woodlands
These two undesignated archaeological features are shown on **Map 2**.
Biodiversity
Several Sphagnum species (notably *S. palustre* and *S. capillifolium*) are found across the recovering bog, in addition to common cotton grass (*Eriophorum angustifolium*). Other species include bog myrtle (*Myrica gale*), acceptable levels of both heather (*Calluna vulgaris*) and purple moor-grass (*Molinia caerulea*), with flushing indicated around the bog edge by the presence of both thistle (*Asteraceae*) and rush (*Juncus spp.*). Recently recorded fauna species include European hedgehog (*Erinaceus europaeus*), and various invertebrates including the turkey brown mayfly (*Paraleptophlebia submarginata*) and painted lady butterfly (*Vanessa cardui*). Less recent recordings include common snipe (*Gallinago gallinago*) and red listed species: lapwing (*Vanellus vanellus*), curlew (*Numenius arquata*), whinchat (*Saxicola rubetra*), and skylark (*Alauda arvensis*). There was a black grouse (*Tetrao tetrix*) lek approximately 2 km north of the plan area recorded in 2015. There is at least one known Eurasian badger (*Meles meles*) sett within the woodland, with trails evident across the site area. Site walkovers have also presented sightings of hunting common kestrel (*Falco tinnunculus*), red kite (*Milvus milvus*), grey heron (*Ardea cinerea*), and a family group of long-tailed tits (*Aegithalos caudatus*). The Barlay Burn drains into the Shirmers Burn which supports one of the region's healthiest Brown trout (*Salmo trutta*) populations, as well as Atlantic Salmon (*Salmo salar*) in the lower burn. Fish species may not be able to access the upper reaches of the Shirmers Burn and the Barlay Burn due to a natural waterfall barrier located at approximately NX 6711 7742. Owing to records of Water Vole (*Arvicola amphibious*) at the nearby Knowetop lochs reserve, there is a possibility that the Barlay Burn could support water vole.
Invasive species
Invasive non-native plant species (INNS) *Rhododendron ponticum* is present in woodland adjacent to northern coupes but it is not present within the plan area. Invasive plants are being monitored and will be controlled accordingly.

Description of woodlands
Grey squirrels may be present within the wider area, and FLS will support any control measures co-ordinated by the Saving Scotland's Red Squirrels group. North American Signal Crayfish are present within Shirmers Burn and the wider Loch Ken/River Dee catchment; its distribution is expected to increase.
Woodland composition
The current species composition of the Bartaggart plan area, as planted in 2014, is shown on **Map 8**. There is a wide diversity of broadleaf species and open ground (refer to **3.6 Species diversity and age structure** for woodland composition). There are no planted conifers within the boundary, however, some are present along the public road and in adjacent/nearby woodlands. Productive broadleaves cover 48 % of the plan area (Aspen, Beech and Sycamore). Planted native broadleaf woodland makes up 12 % of the plan area (Common alder, Downy birch, Grey willow, Hazel and Rowan). Birch is naturally regenerating in coupe 85005, with adjacent woodland being the likely seed source. Open ground is a significant component of the site, making up 40 % of the total area and includes 7.61 ha of restored bog (10b/9d soils).
Plant health
There are no known plant health issues at present. Tree health will be monitored during normal forest management activities.

Appendix II EIA screening opinion request form

Overleaf if required

Appendix III Consultation record

Consultee	Date contacted	Date of response	Issues raised	FLS response
Online public consultation web page	08/12/2020 (date went live)	-	There was the option to complete an online survey via the FLS Consultations web page. One response was received via the survey. Points raised: Eager to see increased biodiversity in the area and linkage of wildlife rich habitat to extend a wildlife corridor along the road Maintenance and enhancement of bog as a significant issue and disappointment in sale of adjacent land.	Protection and enhancement of all habitats, including the restored bog site, is a key objective of this plan. Refer to points **1.1** and **4.0 – Biodiversity**.
Community Council – Corsock	11/12/2020	02/02/2021	Happy with native woodland site and eager to see it managed for biodiversity and the environment with a commitment for a good portion of it to be left in perpetuity and never cut down. Recent community surveys in the Glenkens region have highlighted a community keenness for development of pathways and places for residents to access; pandemic has highlighted the need for this even more. Eager to see some form of access and pathway established at the site and would be keen to work with FLS to implement possibly via local wind farm fund schemes.	FLS welcome support for the key objective to protect and enhance habitats to benefit biodiversity and environmental quality. Refer to points **1.1** and **4.0 – Biodiversity**. Native broadleaved areas will be managed under LISS, thus promoting continuous canopy cover. Likewise, we currently predict managing the productive crop under this system in the future, with the decision to change management type taken at the next land management plan renewal (due in 2031) once the trees are better established. Refer to point **4.0 – Silviculture**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
				Access is welcomed and is possible via gates in the fence line, which will be lowered in height once the trees are fully established. Unfortunately, given the limited use of this area by members of the public and considering the limited car parking options, it is unlikely that putting formal recreation infrastructure in would be possible at this stage. Refer to point **4.0 – People** and **Appendix 1 – Public access**. Invited further discussion on partnership working with FLS Community and Communications Manager.
Dumfries & Galloway Council – Archaeology	11/12/2020	18/12/2020	The Council's Historic Environment Record notes only one site within the woodland area, elements of the farmstead of Brownhill (HER ref.MDG15900) at NX 6976 7871. Nothing is obvious on the ground but Scottish Government LIDAR data indicates the 2014 planting goes over a rectangular feature close to the roadside dyke, which may match to the building shown on the first edition Ordnance Survey map. The HER's mapping also notes a hay ree at NX 6880 7905 attached to the boundary dyke on its south-eastern side, just within the planting area, which is also shown on the first edition Ordnance Survey mapping. This area should be	Both features were ground checked: • Brownhill farmstead: There are no upstanding remains, with cut stone at ground level covered with ground vegetation. • Hay ree: There is a stone pile along the fence line, which is spaced away from the planted tree line and not attached to the dyke. Following a review by the FLS Archaeologist, it was determined that no further action is required at this time as: • neither site is upstanding • neither site is of prehistoric archaeological significance

Consultee	Date contacted	Date of response	Issues raised	FLS response
			ground-checked and any upstanding remains avoided by forestry operations.	• these areas are not likely to include significant buried archaeological deposits. All management proposals will adhere to the UKFS and any features or objects of archaeological interest coming to light as a result of ground disturbance resulting from future forestry works will be notified to the Council Archaeologist. Refer to point **4.0 – Historic Environment**, **Appendix I – Historic Environment**, and **Appendix IV**.
Dumfries & Galloway Council – Countryside Access	11/12/2020	15/12/2020	No issues from a public access perspective as there are no recorded Core Paths or Rights of Way. The land may be subject to the responsible access rights (as per Land Reform (Scotland) Act 2003) and access should be managed using the Scottish Outdoor Access Code guidance.	FLS welcomes responsible public access as per The Land Reform (Scotland) Act 2003. As responsible land owners, FLS will only restrict public access where it is absolutely necessary, and will keep disruption to a minimum. The plan area is not considered a core recreation area and there is limited availability for car parking. Informal foot access is possible via gates in the fence line and any management operations in this plan period are unlikely to impede this. Refer to point **4.0 – People** and **Appendix 1 – Public access**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
Dumfries & Galloway Council – Countryside Development	11/12/2020	08/02/2021	• Landscape: The Drumlin Pasture Landscape Character type is a particularly distinctive landform created by glacial deposition. This landscape character type only occurs in Dumfries and Galloway and therefore the LMP provides an opportunity to help strengthen and conserve its integrity. Established broadleaf woodlands are scattered through this landscape generally occupying the lower ground, between drumlins and along water courses. Where they extend over the drumlin mound they rarely occupy more than one third of its area. Over the management period it would therefore be appropriate for the commercial/native broadleaves and open space on Bartaggart Hill to be managed in a way that emphasises the natural drumlin landform - rather than reinforcing the field pattern that was created upon/across it when the land was enclosed by dykes. • Biodiversity: The concept of encouraging connectivity with adjacent woodlands and the restoration work on the blanket bog habitat is greatly welcomed. South West Scotland Environmental Information Centre (SWSEIC) have advised	The design is generally in keeping with descriptions pertinent to the Drumlin Pasture landscape character type. It is expected the angular field system (evident from a network of drystone dykes) will become increasingly softened as the woodland continues to mature. Management under a low impact silvicultural system will also encourage woodland longevity and structural diversity that is sympathetic to the wider landscape. Refer to point **4.0 – Landscape**. FLS welcome positive comment on aspirations for improved habitat connectivity and completed bog restoration operations. Maintaining and enhancing such habitats for biodiversity is an objective of this plan. Priority habitats and species will be protected in line with the UKFS and locally important flora will be retained where possible. Refer to points **1.1** and **4.0 – Biodiversity**. Records of invertebrate species at the bog site are encouraging. The bog will remain unplanted and will be regularly monitored, with positive intervention taken when/if necessary and in line with FLS peatland restoration policy. Refer to points **4.0 – Biodiversity**, **4.0 – Soils**, and **Appendix I – Biodiversity**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			that Bartaggart Moss was included as part of their 'Bugs in the Bog' project, and therefore they have a reasonable set of invertebrate records from this recording in 2014. It includes one nationally scarce beetle species. This appears to be the most important habitat within the site. There are useful links to adjacent wildlife-rich sites at Knowetop Lochs (Scottish Wildlife Trust Reserve) and the Lowes Local Wildlife Site. There is a diverse range of wildlife in these nearby habitats, with locally important plants such as Whorled Caraway in damp rush pastures. Any fragments of this habitat on site should be retained where possible. There is a diverse bird list for the area, including declining species such as Willow Tit in wet woodlands nearby at Knowetop Lochs. Water Vole have been recorded nearby at Knowetop Lochs and may be present on the Barlay Burn if suitable habitat is present.	
Galloway Fisheries Trust (GFT)	11/12/2020	04/01/2021	Have not surveyed site/populations. Shirmer's Burn is priority burn (for salmon) and sustains one of the catchment's healthiest brown trout populations. There have been habitat restoration works undertaken to	FLS welcome positive comment on bog restoration work. Continued protection and enhancement of all habitats, including the bog site, is a key objective of this plan. Refer to points **1.1**, **4.0 – Biodiversity**, and **4.0 – Soils**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			reduce livestock grazing and some tree planting. The lower burn is accessible to Atlantic salmon but there is a waterfall barrier preventing access to the Barlay Burn. Signal crayfish are assumed to continue increasing within the Shirmer's Burn and trout can continue where crayfish are present. There is public angling in the lower burn. Strongly support bog restoration work undertaken and support ongoing maintenance as it helps to regulate water flows/quality. Support the continuation of protection /enhancement of riparian areas. Support continued use of BL species only at site. Request active management is undertaken, if required, to establish good densities of riparian deciduous trees along all watercourses owing to benefits (improved habitat from woody debris cover, increasing number of vertebrates for food, bank stabilisation from tree roots, shade water cooling effect important due to climate change threat on fish populations). For this, trees must be growing close to edge of water courses.	FLS welcome positive comment on broadleaved woodland. Occurrence of naturally regenerating broadleaf species along watercourses within LISS coupes will be accepted. Refer to point **4.0 – Silviculture**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			Confirmed the waterfall barrier is likely located at NX 6711 7742.	
HES	11/12/2020	17/12/2020	Based on the information provided there are no designated features that would be impacted by the proposed forestry works, therefore offered no comment.	Although there are no designated features, undesignated features present at the site have been recorded and will be protected from disturbance during future forestry operations. Refer to point **4.0 – Historic Environment**, **Appendix I – Historic Environment**, and **Appendix IV**.
Neighbours	10/12/2020	Various	A letter drop was carried out to neighbours immediately adjacent to the block's boundary and letters were mailed to other nearby neighbours. Neighbours had the option to complete an anonymous online survey and/or email the Forest Planner. Point raised via email: • queried purpose of consultation process and how to participate in said process.	Issued clarification on consultation process and how to participate. No further comments in relation to the plan were received.
Scottish Forestry	11/12/2020	11/12/2020	Declined to comment at this stage and provided consultee list.	Acknowledged.
Scottish Water	11/12/2020	16/12/2020	Confirmed their records indicate there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, or Scottish	All operations will be planned and delivered in line with the UKFS requirements and guidelines. Refer to point **4.0 – Water**.

Consultee	Date contacted	Date of response	Issues raised	FLS response
			Water Assets in the area that may be affected by the proposed activity.	
West of Scotland Archaeology Service (WOSAS)	11/12/2020	18/01/2021	May not be able to provide comment due to current Covid-19 restrictions and workload. No comment is not to be understood as support for the proposal.	Acknowledged. No further comment received.
NatureScot	11/12/2020	No response	-	-
SEPA	11/12/2020	No response	-	-
Butterfly Conservation Scotland	11/12/2020	No response	-	-
Community Council – Balmaclellan	11/12/2020	No response	-	-
Community Council – New Galloway	11/12/2020	No response	-	-
Community Council – St John's Town of Dalry	11/12/2020	No response	-	-

Consultee	Date contacted	Date of response	Issues raised	FLS response
Confederation of Forest Industries (CONFOR)	11/12/2020	No response	-	-
Czernin-Kinksy (nearby land owner/manager)	11/12/2020	No response	-	-
Dumfries & Galloway Council – Roads	11/12/2020	No response	-	-
Dumfries & Galloway Council – Flood Risk	11/12/2020	No response	-	-
Galloway & Southern Ayrshire Biosphere	11/12/2020	No response	-	-
Galloway Glens Landscape: Loch Ken Partnership	11/12/2020	No response	-	-
IUCN Otter Specialist Group	11/12/2020	No response	-	-

Consultee	Date contacted	Date of response	Issues raised	FLS response
Loch Ken Trust	11/12/2020	No response	-	-
NatureScot	11/12/2020	No response	-	-
Royal Society for the Protection of Birds (RSPB)	11/12/2020	No response	-	-
Saving Scotland's Red Squirrels	11/12/2020	No response	-	-
Scottish Wildlife Trust	11/12/2020	No response	-	-
Tilhill Forestry (nearby land owner/manager)	11/12/2020	No response	-	-
Premier Woodlands (nearby land owner/manager)	11/12/2020	No response	-	-

Appendix IV Historic Environment records

Designation	Name	Feature Description	Site Description	Grid Reference	Importance	Area (ha)
Undesignated	Brownhill farmstead	Building	Elements of a farmhouse, ancillary farm buildings and associated well flanking the road south of Brown Hill (HER ref. MDG15900). No obvious signs on the ground; it is evidenced using Scottish Government LIDAR data. Depicted on the first edition OS map but not recent editions.	NX 69767871	Not significant	0.19 (Based on First edition OS map)
Undesignated	Hay ree	Fodder store	A building or enclosure used to prepare and store dry cattle feed such as hay. Adjoins and/or near the boundary dyke on the north-western side of Bartaggart Hill. Depicted on the first edition OS map but not recent editions.	NX 68807905	Not significant	0.02 (Based on First edition OS map)
Undesignated	Several drystane dykes	Wall	A series of dykes make up the block boundary and intersect coupes.	Various	Not significant	-