Forestry and Land Scotland
Coilltearachd agus Fearann Alba

West Bold

Land Management Plan 2020-2030

V1.2

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:	West Bold		
Grid Reference (main forest entrance):	NT 3576 3672 (Plora) NT 3633 3604 (Site)	Nearest town or locality:	Walkerburn
Local Authority:		Scottish Borders	

Applicant's Details			
Title:	Mr	Forename:	Tom
Surname:	Harvey		
Position:	Planning Forester		
Contact Number:	0131 370 5286 | 07990627644		
Email:	Tom.harvey@forestryandland.gov.scot		
Address:	Forestry and Land Scotland, Ae Office, Ae Village, Parkgate, Dumfries		
Postcode:	DG1 1QB		

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

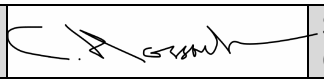
1. I apply for Land Management Plan approval for the property described above and in the enclosed Land Management Plan.

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 Issues log.

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 (pp)	 I Laidlaw
FLS Region	South	SF Conservancy	South
Date	16/12/2020	**Date of Approval**	11/1/2021
		Date Approval Ends	10/1/2031

Contents

1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	West Bold Land Management Plan
Forest blocks included	West Bold
Size of plan area (ha)	129.1 ha
Location	See Location map (**Map 1**)

Long Term Vision
The long term vision for West Bold is an integrated diverse forest connecting the Traquair and Elibank properties. The landscape and topography offer a variety of options for low impact silvicultural systems, which will work alongside the existing forest blocks timber outputs but also be sensitive to the local environment. Appropriate choice of productive and non-productive species will enhance the local area both aesthetically and for biodiversity. Retention of local landscape pasture features including veteran wood pasture and expanding the native broadleaf corridor along the central Plora Burn will assist with this long term vision.
Management Objectives
Primary objectives 1. Utilize high yielding softwood species to contribute to the surrounding FLS blocks productivity and taking advantage of good soils and shelter to increase the use of low impact silvicultural practices. 2. Mitigate and adapt to the effects of climate change with fast growing conifer species sequestering carbon and diversifying forest crop species including the use of alternative conifer and broadleaf to increase resilience to the Tweed Valley. 3. Consolidate the land holdings of Traquair and Elibank whilst being sensitive to the Tweed Valley landscape character. Secondary objectives 1. Increase biodiversity connectivity through riparian corridors and implementing retentions of existing biodiverse features and expanding where appropriate. 2. Protecting heritage features whilst looking to diversify income with conservation grazing.

Critical Success Factors
• Planting carried out sustainably of the establishment plan meeting the stocking density requirements • Protection of soft conifers and broadleaves from browsing damage • Completion of road and track construction ready for establishment operations

1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling	0 ha
Thinning	0 ha
Restocking	0 ha
Afforestation	57.6 ha
Deforestation	0 ha
Forest roads	1692.7 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 an issues log is presented in **Appendix III**. The consultation process incorporated letter drops, use of the FLS website, an interactive online survey form and on the 15th August at Alexandria Park an information event was set up by the local Community Council that FLS attended to explain the plans to the public. **Appendix IV** shows feedback from the local Community Council and other stakeholders.

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

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	Details and location	Management description /comments
Site of Special Scientific Interest (SSSI)	No	Not within plan area.	Although not within the plan boundary Plora Wood is <0.5km from the site, the river Tweed is also connected to the site through internal burns (Plora and Bold).
National Nature Reserve (NNR)	No		
Special Protection Area (SPA)	No		
Special Area of Conservation (SAC)	No	Not within plan area.	Although not within the plan boundary the river Tweed is connected to the site through internal burns (Plora and Bold). See table 6 for management prescription.
World Heritage Site (WHS)	No		
Scheduled Monument (SM)	Yes	Earthworks & Enclosures (Canmore 53123 – NT 36230 36378) Plora Tower (Canmore 53101 – NT 36091 36293) 20 m buffer applied to both features however, closest planting is 100 m and 70 m respectively. See	See table 6 for management prescriptions.

		Appendix I for full description.	
National Scenic Area (NSA)	No		
National Park (NP)	No		
Deep peat soil (>50 cm thickness)	No		
Tree Preservation Order (TPO)	No		
Local Nature Conservation Site	Yes	Located along Bold and Glenmead burn. Present within plan area at NT 371 351	Bold Burn/Glenmead burn is a provisional local biodiversity site (pLBS). See table 6 for management prescriptions.
Biosphere reserve	No		
Local Landscape Area	Yes	Area of great landscape value. See Appendix I for full landscape description	See table 6 for management prescriptions.
Ancient woodland	No	Not within plan area.	Plora Wood is <0.5km from the site. See table 6 for management prescriptions.
Acid sensitive catchment	No		
Drinking Water Protected Area (Surface)	No		

The Key Features map (**Map 2**) shows the location of all designated areas and significant features.

3.2 Clear felling

Within the lifespan of this Land Management Plan there is no clear felling.

3.3 Thinning

To achieve an effective Low Impact Silviculture System (LISS) thinning will be required within phase 4. These areas can be identified within the thinning map (**map 5**)**.** This covers an area of 40.2 ha.
Thinning would normally be carried out at, or below, the level of marginal thinning intensity (i.e. removing no more than 70% of the maximum mean annual increment (MAI), or Yield Class (YC), per year). Higher intensities (no more than 140 % of maximum MAI, or YC, per year) may be applied where thinning has been delayed, larger tree sizes are being sought or as part of a LISS prescription.
In all cases work plans will define the detailed thinning prescription before work is carried out and operations will be monitored by checking pre and post thinning basal areas for the key crop components.

A detailed description of future interventions can be found within table 6 of section 4.0 of this LMP.

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 Afforestation

Proposed afforestation is shown on the Future Habitats and Species map (**Map 6**).

Table 1, Table displaying the afforestation proposals for the West Bold Land Management Plan

Afforestation							
Phase	Coupe Number	Gross Area (ha)	Proposed Restock Year	Species	Method *	Minimum stocking Density (s/ha)	Note
1	84002	14.7	2022/23	Alder (CAR) Downy birch (PBI) Goat willow (GWL) Sessile oak (SOK)	P	1600 s/ha	Intimate mixture To reflect a W7 NVC Woodland
1	84003	6.5	2022/23	Norway spruce (NS) Beech (BE) European silver fir (ESF)	P	2750 s/ha at year 1 to achieve 2500 s/ha at year 5	In intimate mixture suited to soil and planted at 60% 30% 10% respectively. Future beat ups to utilise ESF.
1	84004	15.6	2022/23	Sitka spruce (SS) Douglas fir (DF)	P	2750 s/ha at year 1 to achieve 2500 s/ha at year 5	In an even intimate mixture planted (50/50)
1	84005	17.9	2022/23	Sitka spruce (SS)	P	2750 s/ha at year 1 to	In an even intimate mixture

				Douglas fir (DF)		achieve 2500 s/ha at year 5	planted (50/50)
1	84006	2.9	2022/23	Downy birch (PBI) Alder (CAR) Pedunculate oak (POK) Rowan (ROW)	P	1100 s/ha	Intimate mixture To reflect a W4 NVC Woodland

Total	57.6

* plant (P) / replant (R) / natural regeneration (NR) / plant alternative area (ALT) / no restocking (None)

3.6 Species diversity and age structure

The following tables show how the proposed management of the forest will help to maintain or establish a diverse species composition and age-class structure, as recommended in the UK Forestry Standard. Given the site is being established within the same planting year the next 20 years in regards to age will result in an even aged crop. It is anticipated that this will gradually change with the introduction of future thinning interventions increasing light levels for natural regeneration to form the lower age class structure.

Table 2, Table displaying the increase in species diversity through the life of the West Bold Land Management Plan

Plan area by Species						
Species	**Current**		**Year 10**		**Year 20**	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka spruce	0	0%	16.8	13%	16.8	13%
Other conifers	0	0%	21.3	16.5%	21.3	16.5%
Native broadleaves	6.9	5.3%	24.5	19%	24.5	19%
Other broadleaves	0	0%	1.9	1.5%	1.9	1.5%
Open ground	122.2	94.7%	64.6	50%	64.6	50%
Total	**129.1**	**100**	**129.1**	**100**	**129.1**	**100**

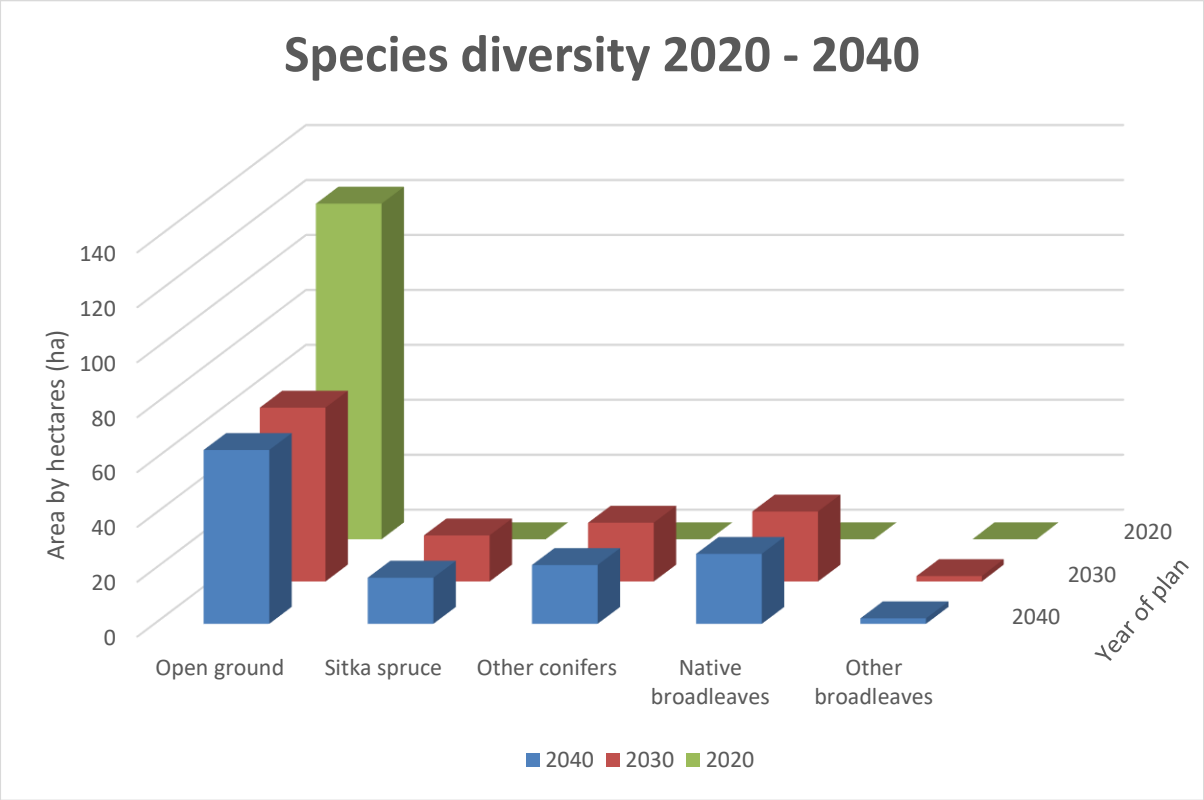


Figure 1, 3D bar chart displaying the increase in species diversity through the life of the West Bold Land Management Plan

Table 3, Table displaying the age class structure throughout the life of the plan

Plan area by Age						
Age class (years)	**Current**		**Year 10**		**Year 20**	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
0 – 10	0	0	57.6	44.6%	0	0
11 – 20	0	0	0	0	57.6	44.6%
21 – 40	0	0	0	0	0	0
41 – 60	0	0	0	0	0	0
60+	6.9	5.3%	6.9	5.3%	6.9	5.3%
Open ground	122.2	94.7%	64.6	50%	64.6	50%
Total	**129.1**	**100**	**129.1**	**100**	**129.1**	**100**

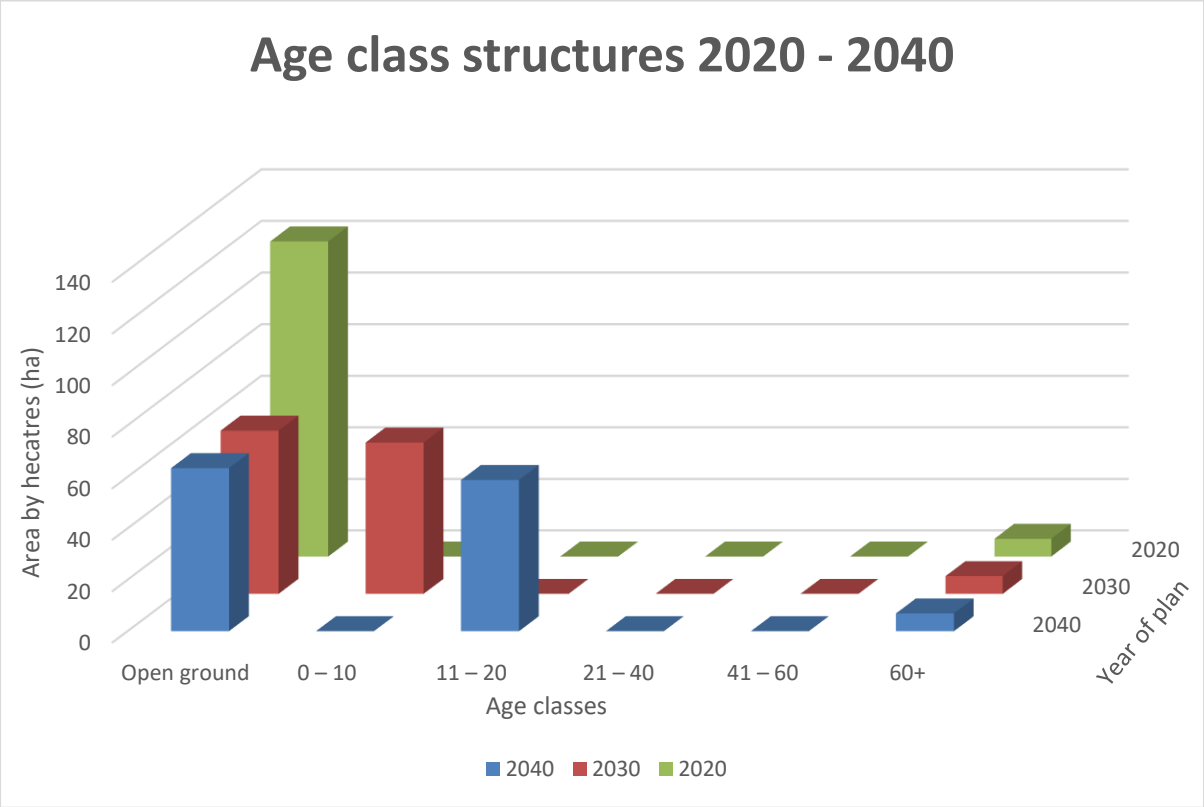


Figure 2, 3D bar chart displaying the age class structure throughout the life of the plan

3.7 Road Operations and Quarries

Planned new roads, road realignments, road upgrades, new quarrying, and timber haulage routes are shown on the Road Operations and Timber Haulage map (**Map 7**).

Table 4, Table displaying future roading operations

Forest Road Upgrades, Realignments, New Roads and New Quarrying				
Phase	Name / Number	Length (m)	Year	Operation
1	T53c	673.64	21/22	Creation of road to access Plora Burn block (Management coupe 84004)
3/4	T53d	788.7	35/36	Upgrade establishment track to forest road spec for thinnings (Management coupe 84003/4)
1	T53f	230.34	21/22	Creation of road to access Glenmead block (Management coupe 84005)

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 5, Table displaying EIA projects requiring assessment

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation	Yes	Total area being planted: 57.6 ha
Deforestation	No	
Forest roads	Yes	Total length: 1692.7 m
Forestry quarries	No	

3.9 Tolerance table

Working tolerances agreed with Scottish Forestry are shown in **Appendix IV**.

4.0 Management Proposals – guidance and context

Table 6, Detailed management proposals

Silviculture
Clear felling
No clear felling within lifetime of plan.
Thinning
The compartments **84003/4/5** totalling 40.2 ha have been identified for future thinnings. Interventions will be carried out in either late phase 4 or early phase 5 depending on if tree height/age has reached the threshold to begin the interventions (detailed in table 6.1 below). To minimise environmental disturbance and increase operational efficiency an average between either the age or height factors should be used to thin all coupes within the same operation (ie. age=18 years | average height 15 m).

Table 6.1, Thresholds for first thinning interventions

Management coupe	Primary Species mapped	Crop age of first intervention	Crop average height (m) of first intervention
84003	NS at YC 24	21	18
84004/5	SS at YC 24 DF at YC 22	18 16	14 13

Given the sheltered nature and optimal soils and species choice (see table 6.2) within the productive areas LISS operations will be utilised therefore a slightly higher intensity of volume removed ([V removed] ≥ 1.1 x MTI) will be favoured for the first 3 interventions given that these interventions are either 5 years apart from each other or when the average crop height has gained a further 3 metres; whichever occurs first. Later interventions will gradually decrease to meet the MTI and then work below to deliver a light thinning ([V removed] ≤ 0.7-0.9 x MTI)
See **map 5** for reference to the thinning area locations.

Low Impact Silviculture/Continuous Cover Forestry

It is anticipated that a uniform shelterwood Continuous Cover Forestry (CCF) system will be employed across all the productive areas (**84003/4/5**), furthermore the sites productivity and species choice being site suited will likely produce a successful restocking of natural regeneration in the future reducing the requirement for ground preparation and full restock planting.
Beyond the life of this LMP it is anticipated that seed trees will be selected from the best formed trees, thinnings would favour trees around these to promote crown development and seed production. All species utilised within the design produce seed around October-November therefore the latter thinning interventions should if possible be timed around this. Monitoring of regeneration and canopy cover will inform future interventions. This management type will work in with the majority of other CCF stands within the Traquair and Elibank blocks being located within easy access and similarly located on the lower slopes.
See **map 4** for location of LISS areas.

Long term retentions / minimum intervention / natural reserves

The steep banking on the west side of Shiel Craig along with the existing pockets of developed woodland along the Plora Burn will be retained as areas of Minimum intervention.

84002

This area once planted will be managed as minimum intervention with the purpose of expanding the existing pocket of semi natural woodland located in 84010. The species mixture will be a reflection of the riparian woodland it connects. Once established there may be natural regeneration of exotic conifer seed from 84004 encroaching within the boundary of the native woodland, if this is the case removal of the non-native element will be required.
The long term vision for this area will be the introduction of a traditional breed of cattle to graze this area once the area is established to create a natural complex mosaic of tree

regeneration through light poaching and suppression of rank vegetation. This vision will need to be assessed further down the life cycle of this woodland for practical viability.

84006

A mixture of birch (W4) assemblage to expand the provisional local biodiversity site will also incorporate a corridor of open space around the Glenmead Burn to add a further diversity of habitat. This area will also incorporate the existing hedgerow which will be allowed to grow on and provide further refuge and food source for local fauna.

84007/9

The roadside tree line will be kept and monitored for hazardous trees. The veteran trees within the archaeological area will also be monitored for hazardous limbs impacting on the archaeology and access through the farm track.

84010

The steepness and shallowness of the soils associated with the Shiel Craig banking makes this area particularly challenging to manage however, it is already developing evidence of natural succession from the gorse into a birch/hawthorn scrub. Seedlings around the edges and within openings within the gorse are protected from browsing from the surrounding dense scrub. This area will be monitored for future regeneration and successional status.

The semi-natural woodland and veteran trees that follow the Bold Burn will also be under minimum intervention these offer a corridor of connectivity between the broadleaf area within the Traquair block and are extremely valuable for wildlife.

See **map 4** for location of minimum intervention areas

Tree species choice

All species have been chosen with due consideration to being site suited and climate adaptable table 6.2 details the species utilised and suitability level as recorded by the Ecological Site Classification decision support tool (2020)

Table 6.2, Tree species choice

Common name	***Scientific name***	***Compartment***	***ESC Suitabillity****	***YC****	***Area***	***% of forest area***	***Comments***
Sitka spruce	*Picea sitchensis*	84004/5	VS	24 | 28	16.76	29%	In groups to match site conditions 50% | 50%
Douglas fir	*Pseudotsuga menziesii*	84004/5	S | VS	16 | 22	16.76	29%	
Norway spruce	*Picea abies*	84003	VS	24	3.92	6.8%	In groups to match site conditions 60% | 30% | 10%

beech	*Fagus sylvatica*	84003	VS	8 | 10	1.96	3.4%	
silver fir	*Abies alba*	84003	VS	19	0.65	1.1%	
downy birch	*Betula pubescens*	84006	VS	7	1.13	2%	NVC W4 composition - In groups to match site conditions 40%|20%|20%|20 %
alder	*Alnus glutinosa*		VS	9 | 10	0.57	1%	
pedunculate oak	*Quercus robur*		S | VS	5 | 7	0.57	1%	
rowan	*Sorbus aucuparia*		VS	4	0.57	1%	
alder	*Alnus glutinosa*	84002	VS	10 | 12	5.9	10.3%	NVC W7 composition - In groups to match site conditions 40%|20%|20%|20 %
downy birch	*Betula pubescens*		VS	6	2.94	5.1%	
sessile oak	*Quercus patraea*		VS	5 | 6	2.94	5.1%	
goat willow	*Salix caprea*		VS	7 | 8	2.94	5.1%	

*First value indicates results under the baseline 1960-1990 climate scenario
*Second value indicates results under the Medium-High 2050 climate scenario
*Single values represent no change in suitability/YC between the two climate scenarios

All species are either Very Suitable (VS) or Suitable (S) to site under current climate scenarios with all species moving to very suitable by 2050. Productive areas have all built in resilience by utilizing more than one species should a pest or disease affect one area of the crop.

To calculate diversity within the species being planted a diversity scale was used; A Shannon Index value of 2 was calculated within the species being planted on the site. Typical values are generally between 1.5 and 3.5 in most ecological studies, the index is rarely greater than 4. The Shannon index increases as both the richness and the evenness of the community increase.

Planting the species mixtures will take into account the sites micro-environment with micro-topography and aspect (mounds, frost hollows) along with soils (primarily brown earths and gleys) being used to identified best location for each individual species.

Table 6.3 below details the spacing and stocking density required for initial planting between productive and non-productive areas.

Table 6.3, Planting spacing and density specification

Species category	Initial spacing	Desired stems/ ha at year 1	Desired stems/ ha at year 5
Productive	1.9	2750	2500
Non-productive	2.5	1600	1600

See **map 6** for layout of the species existing on site and those proposed for planting.
See **map 9** for soils
See **map 10** for the Detailed Aspect Method Scores (DAMS)
See **map 13** for planting in context with site constraints

Natural regeneration

Natural regeneration has been identified within the Plora Burn riparian area and it would be expected that the native woodland area being planted would eventually receive seed from the neighbouring trees to boost tree numbers nearby the burn. Natural regeneration/succession has also been observed within the Shiel Craig steep banking, likely survived by the protection of the surrounding gorse and the steepness of the terrain, it is anticipated that this will continue.
Outside of the lifespan of this LMP natural regeneration will be a key component within the CCF areas as detailed above.

Protection

Herbivore browsing is a significant threat to the woodland creation scheme, deer control will be required in the long term however, for establishment, physical protection measures will be required which will likely require temporary fencing. Fencing would be utilised up until the entirety of the crop has been established. An indicative fencing map is available as **map 11** and shows where gates and stiles would be located to maintain operational and public access. Due consideration for badgers would be in place with badger gates being located at suitable intervals throughout the fence-line.
If a fence-line is deemed necessary at the time of establishment but significantly varies from that shown in map 11 a formal amendment will be made to Scottish Forestry.

Road operations

Two roads will be required to access the West Bold site for establishment and future operations. T53c (673.6 m) will gain access from the Traquair block and will require a roading corridor through a P2014 crop of Sitka spruce, gaining access through this route affords the use of road year round in the future as it would be outwith agreed buffer limits to a schedule 1 listed species of conservation. T53d (788.7 m) is proposed to initially be an establishment track utilising the existing farm track to limit potential impact on landscape and be upgraded in phase 4 to allow for first interventions, once the surrounding crop has grown to act as a screen. Initial construction of T53c will be out with the breeding season to limit any impacts operations may cause.

T53f (230.3 m) will gain access from the Elibank Block which will largely follow a roading corridor of natural regeneration requiring cut to allow access for materials and construction.

Forest and Water Guidelines will be followed during construction with use of environmental precautions to minimise erosion and sediment entering watercourses

Material sourced for these operations would be sourced from the Traquair forest quarry.

Both these new roads will give access for the initial establishment phases and subsequent thinning interventions and felling operations throughout the management of the crop. The timber from thinnings and fellings would be hauled utilising the existing forest road network within the adjacent blocks and use of the existing approved timber transport route to bring timber to the market.

See **map 7** for roading operations and timber haulage detail

Biodiversity

Designated sites

Management coupe **84006** is within a designated provisional local biodiversity site. This area will be enhanced with site matched native woodland (W4 birch woodland) and also have an open element around the Glenmead Burn to accommodate for a local adder population.

Although not within the plan area the Plora Wood Site of Special Scientific Interest (SSSI) is less than 0.5 km of the site, no planting is close to this area and will be retained as pasture.

Both the Bold burn and Plora burn eventually flow into the Tweed River; a Special area of Conservation (SAC) and a SSSI. All areas within the plan where either burn flows through have been enhanced with native broadleaf to benefit biodiversity, water quality and act as environmental buffers for any operations occurring above.
See **map 2** for the locations of these designations.

Native woodland

Native woodland will increase to 19% with the addition of the afforestation. All native woodland being planted has been assessed according to its National Vegetation Classification and site suitability whilst also considering a degree of diversity to add further resilience to the site.
Specifically within management coupe **84002** species will be matched to mirror the adjacent semi-natural alder-birch woodland and within all non-productive native woodland planting regular monitoring will ensure these areas are maintained in good condition.

See **map 2**, **map 6** and **map 8** for location of existing and future native woodland

PAWS

No PAWS are present.

Protected and priority habitats and species

Map 8 shows the habitats identified through the open habitat survey carried out on site. Of the identified UKBAP priority habitats present the Lowland Dry Acid Grassland present in compartment **84001** was of high value and displayed indicators suggesting pasture of

great antiquity. This area shall remain under the current grazing regime being grazed organically placing limitations on stocking densities, chemical usage and artificial fertiliser application. This will also retain rank/rough grazing habitat suitable for curlew and meadow pipit.

No floristic rich GWDTE have been recorded on site, this is due to the vegetation present evidencing the acidic end of these habitats. The flushes will however be left open with an appropriate buffer to maintain ground water quality.

Retaining 50% of the site as open will allow for sufficient habitat to be retained for the bird species noted in the bird report and summarised in **Appendix VII**

Open ground

84001 | 84008
The bulk of the open ground area is associated with the entirety of Shiel craig and the frontage roadside fields, this alongside the area containing the archaeology will also be maintained as open pasture. All of these areas are suitable for retention of the current organic pasture utilising cattle and sheep and will be managed via a lease to a local farmer.

84005
The Glenmead fields being planted will have an open buffer along the neighbouring march so to eliminate encroachment of tree limbs onto the neighbouring field
The retained open ground comprises 50% of the site.

See **map 6** for open ground location.

Dead wood

Given the site is primarily a woodland creation scheme quantities of deadwood are below the guidelines however, this will increase through the life of the woodland being planted.

The small area of remnant wood pasture hosts some veteran trees that display a variety of deadwood habitat types from standing, insitu and fallen. Monitoring of these trees will take place to ensure large dead wood does not impact upon and damage the underlying archaeology in that area.

Invasive species

None present on site.

Historic Environment

Designated sites

Plora Craig tower and the associated structures (detailed below in **Appendix I** and a summary of survey findings available in **Appendix VI**). The current grazing regime is likely keeping the bracken levels in check and assisting with keeping the archaeological remains visually accessible. The remaining trees should be monitored for wind blow, as this could

be damaging to the underlying archaeology. However, the site is sheltered, and the trees seem to be dying in situ.

No planting or operational access will be located around the statutory monuments (SM) or within their allocated buffers. Historic Environment Scotland are considering reviewing these buffers with the likelihood these will move slightly north but remain the same area in size, this would therefore move the designated area further away from the proposed planting. Once the review has taken place our records will be updated accordingly.

Map 2 shows the current location of SM features

Other features

All non-statutory historic features such as the D-Shaped iron age fort and the dyking will have an appropriate buffer away from planting or reside within retained managed open areas.
Locally the D-shaped fort is significant to the community therefore maintaining this in a managed open area will preserve the site and also the site-lines between this feature and the lower SM sites which gives visitors an appreciation of the proximity and intervisibility between the two sites.

Landscape

West Bold is a significant feature in the local landscape, and sits within two SNH landscape character types (LCT); Southern Uplands with Scattered Forest (93) & Upland Valley with woodland (116). It also lies wholly within the Scottish Borders Councils Local Landscape Designation; Special Landscape Area (2) (SLA2) – Tweed Valley.

The boundary of the LCT's can be seen in **map 2**. Within the North of the site which is categorised as LCT 116, no planting will be carried out in this area, this maintains the elements of being broad and open in places but in a wider setting maintains the open hillsides and pastoral farmland as stated within SLA2: Tweed Valley.

The upper hillsides and southern end of the site are within LCT 93 this is maintained by the retention of the rolling landform and also is integrated within the locally prominent scattered large areas of forestry namely; Traquair and Elibank.

Locally West Bold provides an important visual landscape break between the two forest blocks and maintains the connection to pastoral farming heritage associated with the area.

A hard un-organic edge is locally visible within the north edge of the site marching onto the Traquair block. This area will be assessed and remedied within the relevant Traquair LMP however, it is likely this will be mitigated with restructuring and use of broadleaves.

There are a number of key external viewpoints that have informed the design of the

woodland. Four key viewpoints all located from in and around the local village of Walkerburn (shown on **Map 3**) have been used to illustrate the LMP management proposals (3D visualisations are shown in **Appendix VIII**). These were selected on the degree of visibility and the significance of the views. **Maps 12.1 -12.4** display 'viewshed imagery' which visualises the extent of visibility within these viewpoints.

People

Neighbours and local community

There is a strong affinity between the land and the local community. Despite COVID-19 related restrictions neighbours and local community were engaged with through letter drops, online FLS website updates, interactive online surveys, update emails and general emailed correspondence. This was concluded with an outdoor info event hosted by the community council which FLS attended, this gave opportunity to display the final proposals and take on any further comments.
The issues log can be found in **Appendix III**, this details all the comments including opportunities and constraints highlighted from the internal and external consultation period. **Appendix IV** evidences the communications received from local politicians and the local council.

Public access

It is possible that with the afforestation informal public access may increase through the site, especially given the level s of recreation in adjacent forest blocks. However, West Bold will be maintained as a quieter area of the Tweed Valley and as such informal bike trails will be discouraged and closed if created.

There are two existing tracks (both can be seen on **map 2**) within the site and these will remain unplanted to give public walking access through the site. The establishment track/future road (T52d) will be aligned with the southern section of the existing farm track which will give public an alternative access point into the Traquair block and give opportunities to form a looped walk in the future.

Should fencing be utilised to protect the establishment phase of this LMP **map 11** shows an indication of where access will be maintained and what type (vehicular/pedestrian).

Soils

Ground preparation

The primary soil types being planted within the site are brown earths and surface water gleys. **Map 9** shows the distribution of all soil types present and table 7 – Geology and soils section gives written detail.

The choice of ground preparation will consider the cultivation requirements of the soils present, the short term benefits for tree establishment, as well as the longer term side effects on tree stability, future forest operations and the environment. There will be a preference for the least intensive technique- within the brown earths this is likely to be

continuous mounding or inverted mounded and the gleyed areas are likely to be inverted mounding. It is anticipated that drainage will not be required during ground preparation. Any ground preparation will be carried out-with sensitive breeding seasons to reduce impact on surrounding conservation buffers.
Deep peats
There are no deep peats within the plan area.
Water
Drinking water
Two water drinking supplies were identified outside of the plan area to the south east of the site however, both of these are redundant and no longer in use.
Watercourse condition
See site description below in table 7 for water course condition however it is anticipated that with expansion of the broadleaf elements within this design, water quality in the long term will be improved. All establishment operations will adhere to the 'Forests and Water' requirements and guidelines in the UKFS and incorporate the necessary buffer zones along with preventative siltation techniques as required.
Flooding
The use of a variety of tree species incorporating diverse underground rooting structures will aid with water run-off, improve stability of slopes and also in the case of the broadleaf areas act as a natural riparian 'soak-away' buffer. Tweed is large at this point so any improvements to runoff on this small area of land will likely be minimal however, as noted below in table 7's hydrology section the SEPA Flood Risk Management map shows the Plora burn, Bold Burn and the River Tweed at this point at a high to medium likelihood of flooding so any reduction in water flow will be of benefit.

For enquiries about this plan please contact:

Tom Harvey | Planning Forester

Forestry and Land Scotland, South Region (East), Ae Office, Parkgate, DG1 1QB

t: +44 (0) 131 370 5286 **|** m: 07990627644**|** e: tom.harvey@forestryandland.gov.scot

Appendix I: Description of site

Table 7, Description of site

Topography and Landscape	West Bold is situated opposite the small village of Walkerburn and lies between two Forestry and Land Scotland (FLS) properties; Traquair and Elibank in the Tweed Valley Forest Park (TVFP) within the Scottish Borders. The site rises to 330 m (a.s.l.) on the lower slopes of Bold Rig and drops to 130 m (a.s.l.) where the site meets the valley bottom. Two streams flow through the site south-north; Plora burn, adjacent to the steep bluff of Shiel Craig and Bold burn which forms the eastern boundary; both of these feed into the River Tweed. The local landscape is made up of rolling hills and smooth slopes predominantly managed as productive coniferous forestry alongside open areas of pasture and falls entirely within the local Special Landscape Area (2) (SLA2) – Tweed Valley. The Tweed Valley is characterised by its' meandering river valley of which in this area is broad and open. The area also is represented by SNH landscape types; Southern Uplands with Scattered Forest & Upland Valley with woodland These along with other land based designations are detailed on **map 2**.
Geology and Soils	The underline geology consists of bed rock comprising mainly wacke sandstone, siltstone and mudstone in variable proportions. An overlay of superficial glacial deposits run consistently with both the Plora and Bold burns. The soils reflect this although with the past agricultural management of the site the soils have been altered to varying degrees. Within the most dominant soil type; the free draining brown earths there is evidence of previous shallow cultivation on the lower slopes resulting in the removal of upper stones and the creation of a plough pan. The steeper slopes tend to be shallower and retain the stoniness. Surface water gleys, primarily located on lower gentler slopes below the natural seepage boundaries draining the upper brown earth soil types. There is also a minor component of ranker soils primarily associated with the Shiel Craig slopes which has some deeper soils however the steepness gives way to rocky outcrops and scree. Across the site Soil Moisture Regimes (SMR) vary from very moist to fresh and Soil Nutrient Regime (SNR) values vary from poor to rich. See **map 9** for soils distribution.

Climate	The site has a cool, sheltered and wet climate. The climate station based at Galashiels- 13 km from West Bold, the summer and winter temperature and precipitation averages are 10.3 °C & 59.5 mm and 5.8 °C and 75.2 mm respectively. The ecological Site Classification gives the accumulated temperature (day degrees above 5 °C) ranging from 1106-1278 (cool – warm) and a moisture deficit range of 30-100 (wet - moist). Based on data from the UK climate projections (2009) this area is likely to have warmer drier summers with warmer wetter winters exhibiting a 2-3 °C increase in summer and winter temperatures and 20% reduction of precipitation in the summer and 20-30% increase in winter precipitation.
Hydrology	**Map 2** shows all water courses. There are 2 water supply points outside of the plan area to the south east of the site however, both are decommissioned and not in use. Two streams running south-north flow through the West Bold site and into the River Tweed. Plora burn, sourced from the Cheese Well spring on the Southern upland Way also receives catchment from Bold Rigg and Plora rig. Bold Burn, gets fed from the Glenbenna, Glenmead and Minchmoor burns. Although only flowing through the south eastern section of West Bold. Bold Burn is a local conservation site. The SEPA water classification hub gives a good overall condition status for the River Tweed at this point. However, the SEPA Flood Risk Management map shows the Plora burn, Bold Burn and the River Tweed at this point at a high to medium likelihood of flooding. Flushes are present throughout the site namely within the west of site draining into the Plora Burn. Some of these run through UKBAP habitat although none of the flushes have been reported as being botanically rich.
Windthrow	West Bold has a predominantly north facing aspect and therefore is out of the dominant south westerly winds and together with the Detailed Aspect Method of Scoring (DAMS) ranging from 11-12, West Bold is relatively sheltered. This lends the site to being at low risk from wind throw. See **map 10** for DAMS scores across the site.

Adjacent land use	Neighbouring land on the eastern, southern and western boundary is owned and managed by FLS, this comprises two blocks; Traquair to the west and Elibank to the east. Both areas Land Management Plans are currently under review with the current objectives at the time of writing as: Primary Objectives 1. To maintain a multi-purpose and multi-benefit forest for the local and national economy. 2. To plan and design resilient and healthy forests. 3. To enhance landscaping in visitor zones. Secondary Objectives 1. To care for priority open habitats and species. 2. To consider peak flows and water quality management. These two FLS blocks share similar management within the surrounding area to West Bold. The lower slopes and dominant frontage to the two blocks are primarily managed as either long term retentions, minimum intervention or under a low impact silvicultural system namely; group selection. The higher slopes, hill tops and less dominant areas toward the back of sites are primarily managed under a patch clear fell system. Current species neighbouring the site are primarily consistent with larch, spruce, pine and Douglas fir. Alongside the productive forestry component of the adjacent forests an extensive area of broadleaf and juniper are managed as a connective riparian habitat along the Plora Burn. The site also neighbours land owned by Glenmead Farm where the pasture is currently primarily grazed with sheep.
Public access	There are no formal public access routes currently within the site. There is however potential of informal access along an existing farm track, and a track along the Glenmead burn. There is also some minor evidence of informal access along Shiel Craig. See **map 2** for current access
Historic environment	West Bold has two scheduled monuments; Plora Craig tower and the associated structures north east of. This monument compromises the remains of a tower house with associated out-buildings and terraces on sloping ground above the Plora Burn. The buildings occupied two sides of a courtyard, with the tower on the NW side. This is built into the hill side and is reduced to a grass covered stony bank. The SE wall is missing. There are three terraces running along the slope on which the tower stands. There are scattered mature ash and Scots pine on the slope, some of which are standing dead. A veteran sweet chestnut survives outside to the NE of the scheduled area, above the track. There is a light infestation

	of bracken across the area, becoming denser further up the hill, and also concentrated on the banks of the built structures. Some 50m SW of the courtyard are the remains of a large corn drying kiln, with level platform to its rear. The kiln is built into the slope. The SE boundary of the scheduled area is marked by the access track, at the foot of the terraced slope. There is a cattle feeding area below the track, with the result that there is light poaching in the scheduled area in its immediate vicinity. However, this is probably helping to keep the bracken in check. Above Shiel Craig there also resides an unscheduled monument of regional importance; A fort, D-shaped in plan measuring 220ft by about 140 ft. The Interior is damaged by quarrying, cultivation and stone robbing. The Scoop at the end may also have been a house platform. Throughout the site there are dry stone dykes of varying quality forming previous and current stock boundaries. Ridge and furrow remains have been noted on site however these do not display sufficient quality in terms of preservation to warrant open space. Various other features of low significance were also recorded during the survey, these and the above are summarized in **Appendix VI.** **Map 2** shows the scheduled and significant non-scheduled sites associated with the site.
Biodiversity	Faunal and floral surveys have taken place within the West Bold site. As of 2017 there were a number of red listed species of conservation concern identified namely; Curlew, Chaffinch, Pied Wagtail, Meadow Pipit, Grey Wagtail, Goosander, Wood Pigeon, Jackdaw, Oyster Catcher, Mistle Thrush, Song Thrush and Starling. Mammals on site likely include badger with records indicating their presence through foraging activity evidence, it is likely there are setts within the steep whin bank of Shiel Craig. The site contains contrasting terrestrial habitats with substantial areas of improved and semi-improved neutral grassland. There is an important fragment (given the paucity of this habitat in the Borders) of semi-natural oak/birch woodland (W11-Quercus petraea-Betula pubescens-Oxalis acetosella) running upstream along with Plora burn within the site and a connecting riparian alder community (W7-Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum) further enhancing this downstream. The Plora burn gully also is home to a locally rare spleenwort. The steep whin bank of Shiel Craig is a rich habitat of successional birch and hawthorn scrub habitat to many of the faunal species listed above. Also, of arboreal note on site is the remnant wood pasture consisting mainly of ash but also including Scots pine and a

	single large grand specimen of sweet chestnut. The age class can all be described as mature to ancient and exhibit various dead wood features that are likely host to valuable biodiversity. Various priority habitats have also been observed on site including: Lowland Dry Acid Grassland – All consisting of the NVC U4 community (Festuca ovina-Agrostis capillaris-Galium saxatile), one area of exceptional conservation note is the area around the archaeology and wood pasture, this particular area is home to well-developed meadow ant hills which indicate pastures of good quality. Purple-moor Grass & rush Pasture – This habitat is represented on site mostly by M23a (Juncus acutiflorus-Galium palustre) and infrequently comprised of M25b (Molinia caerulea-Potentilla erecta). The M23a is relatively species poor with low herb content thought to be a result of the acidity of the grassland at this particular site. See **Appendix VII** for a summary of the bird survey. See map 8 for current habitat composition.
Invasive species	No known invasive species are present on site.
Current land use	According to the James Hutton Institute Land Capability for Agriculture (JHI LCA 250K) the site is roughly a 50/50 split between these two classes: 4.2 - Land in these classes is capable of being used to grow a moderate range of crops including cereals (primarily barley), forage crops and grass. Grass becomes predominant in the rotation in Class 4.2. 5.3 - Land in this class has the potential for use as improved grassland. Historically most of the land would have been improved either mechanically or with more intensive grazing. Currently the West Bold site is leased by FLS to a local grazier. The land is currently grazed under an organic farm pasture regime which places limitations on stocking densities and includes sheep at approximately 7 ewes/ha and summer grazing of cattle in addition to that.
Plant health	No plant health issues have been recorded within the West Bold site however, the site lies within the *Phytophthora ramorum* Risk Zone 2, with Risk Zone 1 being greatest at risk and Risk Zone 3 being the least. Within the adjacent FLS block Traquair there have been two Statutory Plant Health Notices both felled and compliant as of 2018. There are currently no formal records of *Dendroctonus micans* however, minor populations have been observed in the local area. Other plant health issues of note are *Hymenoscyphus fraxineus* (previously known as *Charlara fraxinea*) which is evident along the Glenbenna FLS entrance of Elibank. Also, although no presence recorded at the time of writing, the juniper located along the Plora Burn has been monitored for *Phytophthora austrocedre.*

Appendix II: EIA screening opinion request form

See attached document: Appendix II Screening Opinion Request West Bold 2020

Appendix III: Issues Log

See attached document: Appendix III West Bold Issues Log

Appendix IV: Consultation Feedback

See attached document: Appendix IV Consultation Feedback

Appendix V: Tolerance table

	Maps Required (Y/N)	Adjustment to felling period *	Adjustment to felling coupe boundaries **	Timing of Restocking	Changes to Restocking species	Changes to road lines	Designed open ground ** ***	Windblow Clearance ****
FC Approval normally not required	N	• Fell date can be moved within 5 year period where separation or other constraints are met.	• Up to 10% of coupe area.	• Up to 3 planting seasons after felling.	• Change within species group e.g. evergreen conifers or broadleaves.		• Increase by up to 5% of coupe area	
Approval by exchange of letters and map	Y	• Advance felling of Phase 2 coupe into Phase 1	• Up to 15% of coupe area	• Between 3 and 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.		• Additional felling of trees not agreed in plan. • Departures of > 60m in either direction from centre line of road	• Increase by up to 10% of coupe area • Any reduction in open space of coupe area by planting.	• Up to 5ha
Approval by formal plan amendment may be required	Y	• Felling delayed into second or later 5 year period. • Advance felling (phase 3 or beyond) into current or 2nd 5 year period.	• More than 15% of coupe area.	• More than 5 planting seasons after felling, subject to the wider forest and habitat structure not being significantly compromised.	• Change from specified native species. • Change Between species group.	• As above, depending on sensitivity.	• In excess of 10% of coupe area. • Colonisation of open space agreed as critical.	• More than 5ha.

NOTES:

* Felling sequence must not compromise UKFS, in particular felling coupe adjacency

** *No more than 1ha, without consultation with FCS, where the location is defined as 'sensitive' within the Environmental Impact Assessment (Forestry) 1999 Regulations (EIA)*

*** *Tolerance subject to an overriding maximum 20% open space*

**** *Where windblow occurs FCS should be informed of extent prior to clearance and consulted on where clearance of any standing trees is required*

Appendix VI: Historic Environment records

Summary of findings during the West Bold Archaeology survey 2013 – Full survey submitted to Scottish Forestry

Site Type	Site name	Importance	Significance
Tower House; Garden; Farmstead; Corn kiln	Plora Burn	Regional	High
Sheepfold x 4	-	Local	Low
Mill Dam	-	Local	Low
Sheep Shelter	-	Local	Low
Field Systems	Plora Craig	Local	Low
Earthworks; enclosures	Plora Craig	Regional	High
Fort	West Bold/ Bold Rig	Regional	Moderate
Burnt Mound x2	West Bold	Local	Moderate
Cultivation remains; rig and furrow	Plora Burn	Local	Moderate
Village/settlement	Plora Craig/West Bold	Local	Moderate
Rectangular structure/enclosure	-	Local	Moderate
Modern small concrete block	-	Local	Low
Small section stone wall x 2	-	Local	Low
Stone wall	-	Local	Low
Stone/turf walling	-	Local	Low
Area of rig and furrow	-	Local	Moderate
Former field boundary/division x2	-	Local	Low/Moderate

Appendix VII: Biodiversity records

Bird survey findings summary 2017 - Full survey submitted to Scottish Forestry

Species Name	Local Abundance	Breeding Evidence	S/W/R	Status	LMP Consideration
Curlew	**M**	P,H	R	**R**	**YES**
Chaffinch	H	P+FF	R	G	
Pied Wagtail	**M**	H,NE	R/S	**R**	**YES**
Meadow Pipit	**H**	H,S,P	R	**R**	**YES**
Grey Wagtail	**M**		S/R	**R**	**YES**
Goosander	M	H	R	G	
Wood Pigeon	H	H,NE	R	G	
Jackdaw	H	H,P	R	G	
Oyster Catcher	M	P+A	R	A	
Mistle Thrush	**L**	H	R,S	**R**	**YES**
Song Thrush	**M**	NE,FF	R	**R**	**YES**
Starling	**M**	H	R	**R**	**YES**
Blackbird	H	H,S	R	G	
Robin	H	H	R	G	
Blue Tit	H	H	R	G	
Great Tit	H	H	R	G	
Wren	H	H	R	G	
Chiffchaff	H	H,S	S	G	
Pheasant	H	H	R	G	

Local Abundance South EastScotland - High, Medium, Low.

Summer (S) Winter (**W**) migrant, **R**esident all year.

Red letters denotes breeding bird relevant to FDP.

See breeding evidence codes below

P – Pair observed in suitable nesting habitat in breeding season

H – Species observed in suitable nesting habitat in breeding season

FF – Adult carrying faecal sac or food for young

NE – Nest containing eggs

A – Agitated behaviour or anxiety calls from adults, suggesting probable presence of young nearby

S – Singing male present (or breeding calls heard)

Appendix VIII: 3D Visualisations

See attached documents: Appendix VIII West Bold 3D Visualizations