Forestry and Land Scotland
Coilltearachd agus Fearann Alba

Newcastleton

Land Management Plan

2020 - 2030

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.

The mark of responsible forestry

Property Details			
Property Name:	Newcastleton		
Grid Reference (main forest entrance):	NY 5037 8728	Nearest town or locality:	Newcastleton
Local Authority:		Scottish Borders	

Applicant's Details			
Title:	Mr	Forename:	John
Surname:	Ogilvie		
Position:	Planning Forester		
Contact Number:	0131 370 5276		
Email:	John.ogilvie@forestryandland.gov.scot		
Address:	Forestry and Land Scotland, Selkirk Office, Weavers Court, Forest Mill, Selkirk		
Postcode:	TD7 5NY		

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 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		**Date of Approval**	
		Date Approval Ends	

Contents

1.0 Objectives and Summary

1.1 Plan overview and objectives

Plan name	Newcastleton
Forest blocks included	Newcastleton
Size of plan area (ha)	2736
Location	See Location map (**Map 1**)

Long Term Vision
To complete restructuring of the forest to achieve a healthy and resilient forest that contributes to long term economic, social and environmental benefits.
Management Objectives
1. To develop resilience to climate change and optimise carbon capture. 2. To optimise productive potential of the land, for construction quality timber and other products for local and national markets. 3. Increase the structural diversity of the forest. 4. Manage the landscape associated with visitor zones to maintain a welcoming and accessible forest environment. 5. Continue to develop permanent woodland and other habitats for a variety of species, including red squirrel and raptors. 6. Protect the historical and archaeological heritage of the forest.
Critical Success Factors
• Achieve clearfell and thinning programme to contribute to the Region's sustainable timber production targets; • Carry out timely thinning and CCF interventions; • Successfully restock challenging sites with poor, nutrient deficient soils; • Successfully establish native broadleaves in riparian zones; • Protect broadleaves and 'soft' conifers from deer browsing damage;

1.2 Summary of planned operations

Table 1

Summary of Operations over the Plan Period	
Clear felling	431.6 ha
Thinning	291.6 ha
Restocking	570.0 ha
Afforestation	0 ha
Deforestation	0 ha
Forest roads	200 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**. 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 2**).

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	Yes / No	Note
Site of Special Scientific Interest (SSSI)	No	

National Nature Reserve (NNR)	No	
Special Protection Area (SPA)	No	
Special Area of Conservation (SAC)	No	
World Heritage Site (WHS)	No	
Scheduled Monument (SM)	Yes	Langknowe Long Cairn
National Scenic Area (NSA)	No	
National Park (NP)	No	
Deep peat soil (>50 cm thickness)	No	
Tree Preservation Order (TPO)	No	
Biosphere reserve	No	
Local Landscape Area	No	
Ancient woodland	Yes	Hillhouse Wood LEPO (not shown on ancient woodland layer)
Acid sensitive catchment	No	
Drinking Water Protected Area (Surface)	No	

3.2 Clear felling

Sites proposed for clear felling in the plan period are identified as Phase 1 and Phase 2 coupes on the Management map (**Map 3**).

Table 3

Clearfell Summary by Phase and Coupe Number				
Phase	Coupe Number	Fell Year	Gross Area (ha)	Volume (m3 OBS)
1	70002	2021/22	25.4	15219
1	70007	2020/21	32.9	11741
1	70020	2021/22	11.2	5740
1	70052	2020/21	46.3	9814
1	70062	2020/21	33.4	13808
1	70068	2021/22	17.8	5944
1	70090	2021/22	24.2	12705
1	70091	2021/22	11.7	3740
1	70095 (LISS)	2021/22	1.5	500
1	70100 (LISS)	2021/22	2.7	1400
2	70048	2026/27	6.6	1694

2	70055	2027/28	27.0	8030
2	70060	2026/27	70.4	26514
2	70065	2025/26	27.6	7706
2	70072	2027/28	39.9	17997
2	70085	2029/30	37.3	11440
2	70095 (LISS)	2026/27	1.5	500
2	70104	2029/30	14.2	3752
		Total	431.6	158244

Table 4

Clearfell by Species												
		Net Area (ha) by Main Species >20% (or MC, MB)										
Coupe Number	Fell Year	DF	EL	HL	JL	LP	NS	SP	SS	MC	MB	**Coupe Total**
70002	2021/22		0.1			0.5			23.1			**23.7**
70007	2020/21					7.9			23.9			**31.9**
70020	2020/21	0.4					5.5		4.5			**10.5**
70052	2020/21								40.2			**40.2**
70062	2020/21								28.9			**28.9**
70068	2021/22								11.9			**11.9**
70090	2021/22								23.2			**23.2**
70091	2021/22				0.5		0.2		9.4			**10.1**
70095 (LISS)	2021/22								1.5			**1.5**
70100 (LISS)	2021/22				2.7							**2.7**
70048	2026/27				0.4		0.3	0.1	1.6			**2.4**
70055	2027/28								26.2			**26.2**
70060	2026/27					1.2			62.1			**63.3**
70065	2025/26					0.2			20.5			**20.7**
70072	2027/28								39.6			**39.6**
70085	2029/30								30.8			**30.8**
70095 (LISS)	2026/27								1.5			**1.5**
70104	2029/30								12.4			**12.4**
Plan Area Total		**0.4**	**0.1**		**3.8**	**9.8**	**6.0**	**0.1**	**361.3**			**381.5**

Table 5

Scale of Proposed Felling Areas

Total Woodland Area			2736		ha					
Felling	Phase 1	%	Phase 2	%	Phase 3	%	Phase 4	%	Long Term Retention	%
Net Area (ha)	184.6	6.7	196.9	7.2	63.0	2.3	232	8.5	141.3	5.2

3.3 Thinning

Potential sites for thinning in the plan period are identified on the Thinning map (**Map 4**).

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. The thin years and net areas listed in the table are provisional and may be adjusted once pre-thinning assessment has been carried out.

Table 6

Thinning by Species												
		Net Area (ha) by Main Species >20% (or MC, MB)										
Thinning Coupe Number	Thin Year	CP	DF	EL	HL	JL	LP	NS	SP	SS	MC	MB	**Total**
70010	2029/30									26.9			**26.9**
70011	2022/23									57.8			**57.8**
70013	2023/24									22.2			**22.2**
70034	2021/22									12.1			**12.1**
70042	2024/25					4.9				17.9			**22.8**
70049	2024/25							18.0		7.6			**25.6**
70079	2027/28							5.0	10.1				**15.1**

70081	2023/24					8.1				4.0			**12.1**
70083	2021/22							4.2		16.6			**20.6**
70095 (LISS)	2021/22									6.8			**6.8**
70100 (LISS)	2021/22							4.0					**4.0**
70101 (LISS)	2021/22							1.0					**1.0**
70102 (LISS)	2023/24					1.4		1.5		0.7			**3.6**
70104	2021/22									58.4			**58.4**
Plan Area Total						**17**		**33.7**	**10.1**	**231**			**291.6**

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

Proposed restocking is shown on the Future Habitats and Species map (**Map 5**).

Table 7

Restocking							
Phase	Coupe Number	Gross Area (ha)	Proposed Restock Year	Species	Method *	Minimum stocking Density (s/ha)	Note
1	70070	21.2	2019/20	SS/LP	R	2500	Felled awaiting restock. Previous coupe no. 70069.
1	70076	13.1	2019/20	SS NS MB	R R R	2500 2500 1600	Felled awaiting restock. Previous coupe no. 70074.
1	70006	36.0	2020/21	SS/LP	R	2500	Felled awaiting restock.
1	70009	41.6	2020/21	SS/LP SP/BI MB	R R R	2500 2500 1600	Felled awaiting restock.
1	70059	18.5	2020/21	SS/AR	R	2500	Felled awaiting restock. Alder instead of Lodgepole pine as nurse species
1	70103	8.0	2021/22	SS DF/NS	R R	2500 2500	Felled awaiting restock. *Phytophthora ramorum* SPHN larch felled Dec 2018.
1	70002	25.4	2023/24	SS/LP MB	R R	2500 1600	
1	70007	32.9	2022/23	SS/LP MB	R R	2500 1600	
1	70020	11.2	2022/23	MB	R	1600	

1	70052	46.3	2022/23	SS/LP MB	R R	2500 1600	
1	70062	33.4	2022/23	SS NS SP/NS MB	R R R R	2500 2500 2500 1600	
1	70068	17.8	2023/24	SS SP NS MB	R R R R	2500 2500 2500 1600	
1	70090	24.2	2023/24	SS DF/SS MC/MB	R R R	2500 2500 1600	Rare opportunity in Newcastleton to restock with DF
1	70091	11.7	2023/24	SP/NS MB	R R	2500 2500	Main objective is biodiversity
1	70095 (LISS)	1.5	2023/24	MC MB	R R	2500 1600	
1	70100 (LISS)	2.7	2022/23	MB	R/NR	1600	Restock following felling of mature larch in Hillhouse Wood LISS coupe
2	70048	6.6	2028/29	MB	R/NR	1600	
2	70055	27.0	2029/30	SS/LP MB	R	2500 1600	
2	70060	70.4	2028/29	SS SS/LP SP/NS MB	R R R R	2500 2500 2500 1600	
2	70065	27.6	2026/27	SS MB	R R	2500 1600	
2	70072	39.9	2028/29	SS MB	R R	2500 1600	
2	70085	37.3	2031/32	SS/LP MB	R R	2500 1600	
2	70095 (LISS)	1.5	2028/29	MC MB	R R	2500 1600	
2	70104	14.2	2031/32	NS SS SP/BI	R R R	2500 2500 2500	

Total	570.0

* 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.

Table 8

Plan area by Species						
Species	**Current**		**Year 10**		**Year 20**	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sitka spruce	1613	59	1550	57	1470	54
Other conifers	374	14	432	16	506	18
Native broadleaves	154	6	187	7	207	8
Other broadleaves	2	<1	2	<1	2	<1
Open ground	591	22	563	21	550	20
Total	**2736**		**2736**		**2736**	

Chart 1

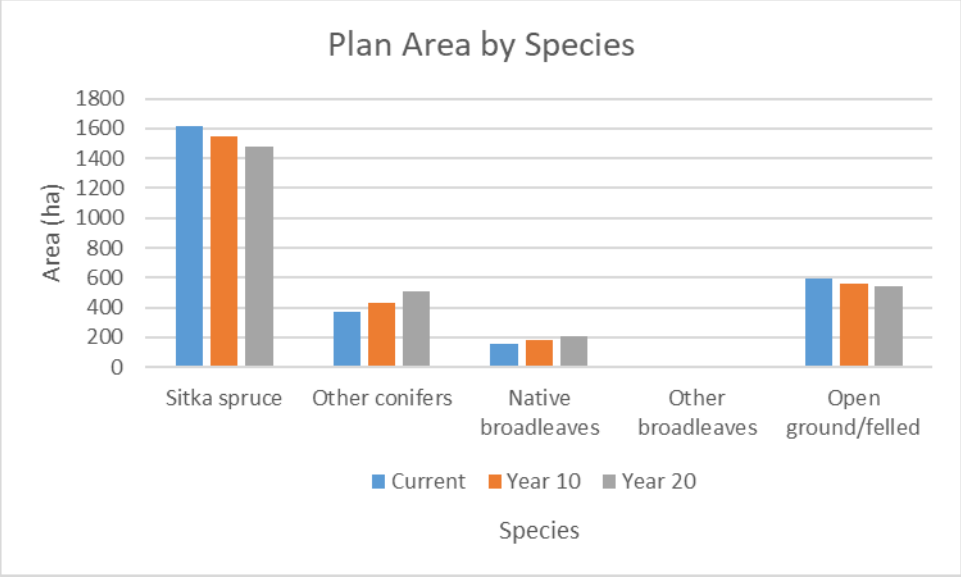
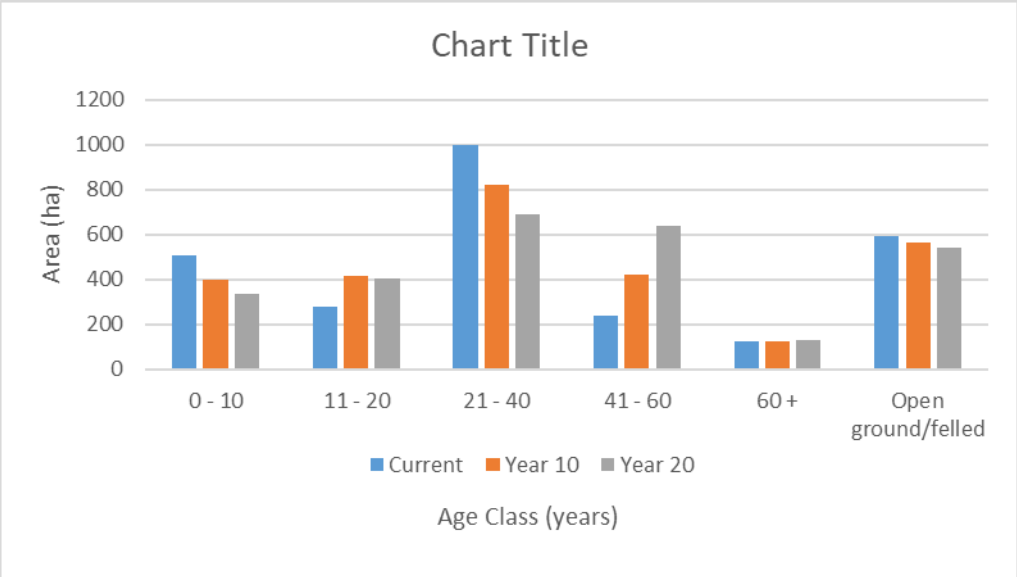


Table 9

Plan area by Age						
Age class (years)	**Current**		**Year 10**		**Year 20**	
	Area (ha)	%	Area (ha)	%	Area (ha)	%

0 – 10	507	19	396	14	334	12
11 – 20	278	10	413	15	405	15
21 – 40	999	37	821	30	690	25
41 – 60	236	9	421	15	638	23
60+	125	5	121	4	127	5
Open ground/felled	591	22	563	21	543	20
Total	**2736**		**2736**		**2736**	

Chart 2



3.7 Road Operations and Quarries

Planned new roads, road upgrades, and timber haulage routes are shown on the Road Operations and Timber Haulage map (**Map 6**).

Table 10

Forest Road Upgrades, New Roads				
Phase	Name / Number	Length (m)	Year	Operation
1	N301f - N301k	3000	2020/21	Upgrade (re-surface)
1	N302c	1000	2020/21 & 2021/22	Upgrade*
1	N312c	1400	2020/21	Upgrade (re-surface)
1	N316a – N316c	4400	2020/21	Upgrade (re-surface)*
1	N324	350	2024/25	Upgrade (re-build)*

1	N331	1300	2024/25	Upgrade*
1	N332	800	2024/25	Upgrade*
1	N339c	100	2020/21	New road/harvesting facility
2	N313d	2400	2025/26	Upgrade (re-build)*
2	N318 – N318a	1820	2026/27	Upgrade (re-build)*
2	Gall Sike	100	2025/26	New road/harvesting facility

* will require roadside tree felling 3m either side

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 11

EIA projects in the plan area		
Type of project	Yes / No	Note
Afforestation	No	
Deforestation	No	
Forest roads	Yes	Two new short sections of forest road (100m each)
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

Silviculture
Clear felling
Most of Newcastleton Forest will continue to be managed using clearfell and restock. The soils and climatic conditions, in particular high exposure (DAMS >16), are such that lower impact management systems are not appropriate. Coupes for clearfelling during the plan period (refer to **Map 4**): **70002 Shiel Burn** (2021/22) Mature Sitka spruce and Sitka spruce/Lodgepole pine on peaty surface water gleys, with several pockets of windblow (10-15%). To be restocked primarily with Sitka

spruce/Lodgepole pine, Lodgepole pine as a nurse species on the nutrient poor site. Native broadleaves to be planted along Hog Sike and Shiel Burn.

70007 Watch Knowe (2020/21)
Mature Sitka spruce and Sitka spruce/Lodgepole pine on a mosaic of different bog types and peaty surface water gleys, with some windblow along the southern edge (5-10%). A significant area of Sphagnum bog (~5Ha) will not be restocked, and bog restoration will be considered following felling. The remainder of the coupe will be restocked with Sitka spruce/Lodgepole pine, with an area of native broadleaves along the Shiel Burn and Coutstane Linns riparian areas on the northern and southern coupe boundaries respectively.

70020 Little Harden Burn (2020/21)
Primarily mature Norway spruce, with some Sitka spruce and Douglas fir, on ironpan and surface water gleys, with a pocket of windblow (~1 Ha) in the south west corner. 100m new forest road will be required in the northern tip of the coupe to gain access across the Harden Burn and enable timber stacking and loading. To be restocked with native broadleaves, with habitat creation and biodiversity as the future objectives. Note the heritage feature (sheep enclosure) within the coupe.

70052 Gowd Moss (2020/21)
Mature Sitka spruce including some over 80 years old, on a mosaic of peaty surface water gley and bog, with surface water gley adjacent to the Tweeden Burn. The older Sitka spruce was previously earmarked as long term retention. There are a few taller trees, but most of the stand of trees appears to be of lower ecological value, and likely to blow over if exposed, due to poor, wet soils and tall thin trees. To be restocked with Sitka spruce/Lodgepole pine and native broadleaves along the Tweeden Burn riparian corridor. Given the boggy nature of some of the coupe, the suitability of restocking all of the site with conifers will be reviewed following clearfell, and consideration given to broadleaf bog edge woodland.

70062 Yearning Sike (2020/21)
Mature Sitka spruce on surface water gley and peaty surface water gley, with large areas of windblow (~20%), some having been on the ground for several years. To be restocked with Sitka spruce, Scots pine/Norway spruce and native broadleaves, with habitat enhancement and conservation of biodiversity as important objectives. Scots pine and Norway spruce should be planted in groups rather than intimate mixture to ensure both species are successfully established. This links with the Kershope Burn riparian corridor, a key part of the forest riparian habitat network.

70068 Muckle Punder Cleuch (2021/22)
Mature Sitka spruce on mainly peaty surface water gley and surface water gley, and small areas of bog and ironpan. To be restocked with Sitka spruce, Scots pine and native

broadleaves. Habitat enhancement and biodiversity are future objectives, so a final stocking density of 2,500 stems/ha is not expected in the SP. This also ties in with the Kershope Burn riparian corridor.

70090 The Linns (2021/22)
Mature Sitka spruce with considerable areas of windblow, some already cleared, on a mosaic of brown earths, surface water gley and peaty surface water gley. To be restocked with Douglas fir/Norway spruce on the better brown earth, otherwise pure Norway spruce, and native broadleaves in the Newstell Sike riparian area on the eastern coupe boundary.

70091 The Border Stane (2021/22)
Mature Sitka spruce with small pockets of Norway spruce and Japanese larch, and significant patches of windblow throughout, on surface water gley. To be restocked with Scots pine/Norway spruce and native broadleaves along the Tweeden Burn riparian corridor. *While the Scots pine/NS should be planted at normal productive stocking density, habitat enhancement and conservation of biodiversity are the main objectives.*

70048 Gall Sike (2026/27)
Approximately 50% mature Sitka spruce on both sides of Gall Sike, along with a mixture of Norway spruce, Scots pine, Japanese larch and broadleaves. The intention is to fell as much of the Sitka as is accessible, given the steepness of the sike in places, along with any larch (risk of future infection with *Phytophthora ramorum*), but leave a small proportion of Norway and pine (providing it is safe to do so – tall trees next to the shared boundary will be felled). A new harvesting facility will be required for access from the minor public road, and for stacking and loading timber. The extent and composition of existing broadleaves will be assessed following felling, and as far as possible restocking will be through natural regeneration. The sike is close to surviving ASNW just outside the forest boundary.

70055 Deep Sike (2027/28)
Mature Sitka spruce on a mosaic of peaty surface water gley and bog, with one notable area of windblow (~5%). To be restocked with Sitka spruce/Lodgepole pine (Lodgepole as a nurse species) and native broadleaves in the riparian area zone of Deep Sike and Muckle Hind Becks.

70060 Havering Sike (2026/27)
Mature Sitka spruce on a mosaic of peaty surface water gley and flushed and unflushed bog, with small pockets of windblow. To be restocked with Sitka spruce, Sitka/Lodgepole pine, Scots pine/Norway spruce and native broadleaves. Habitat enhancement and conservation of biodiversity are important objectives along the Kershope Burn riparian corridor, a key part of the wider forest habitat network.

70065 Cock Kaim (2025/26)
Mature Sitka spruce on predominantly peaty surface water gley and some surface water gley. This coupe has been reduced in size to allow for a more extensive buffer around the older (P1953) stand of Sitka/Norway spruce that is designated as long term. To be restocked mainly with Sitka spruce and Sitka spruce/Lodgepole pine.

70072 Birny Sike (2027/28)
Mature Sitka spruce on a mosaic of peaty surface water gleys and flushed/unflushed bog. To be restocked with Sitka spruce and Sitka/Lodgepole pine.

70085 Blinkbonny Height (2029/30)
Mature (by time of felling) Sitka spruce on unflushed blanket bog/podzolic peaty surface water gley, that was thinned in 2016/17. This felling year will be before the point of maximum mean annual increment, but it is necessary to start felling and restructuring this relatively young part of the forest. To be restocked with Sitka spruce.

70104 Castle Hill (2029/30)
A mixed age coupe of Sitka spruce, the main component P1988, but ranging from P1974 to P1995, on a mosaic of brown earth and surface water gley soils with smaller areas of peaty surface water gley and ironpan. The crop was thinned in 2016/17 and is due to be thinned again in 2021/22. To be restocked with Norway spruce, Sitka spruce and Scots pine/birch (on the ironpan).

<u>Coupes already felled, to be restocked</u>:

70006 (Wilson's Pike)
Previous crop of mature Sitka Spruce/Lodgepole Pine, on mainly blanket bog and peaty surface water gley, felled in 2017. To be restocked with Sitka Spruce/Lodgepole Pine.

70009 (Hunter's Hill)
Previous crop of Sitka spruce/Lodgepole pine, on mainly blanket bog and peaty surface water gley with some ironpan, felled in 2018. To be restocked with Sitka Spruce/Lodgepole Pine, Scots Pine/Birch and native broadleaves. Main objective of SP/BI and NMB is habitat enhancement, and as such final productive stocking of 2500/ha is not expected.

70059 (Yellow Sike)
Previous crop of Sitka spruce/Lodgepole pine, on blanket bog, felled in 2019. To be restocked with Sitka spruce/alder, the alder replacing Lodgepole as a nitrogen-fixing nurse species. This less usual option is being undertaken as something of a trial. As well as acting as a nurse to the Sitka, leaf litter from alder help improve longer term soil sustainability.

70070 Coal Sike (previously 70069)
Previous crop of Sitka spruce, on blanket bog and peaty surface water gley, felled in 2016. To be restocked with Sitka spruce/Lodgepole pine.

70076 Birny Sike (previously 70074)
Previous crop of Sitka spruce, on peaty surface water gley and surface water gley, felled in 2016. To be restocked with Sitka spruce, Norway spruce and native broadleaves. The latter part of habitat improvement along the main Tweeden Burn riparian corridor.

Thinning

Exposed sites (DAMS>16), wet, peaty and often poorly drained soils, and poor growth of the current crop lead to much of Newcastleton (~50%) being unsuitable for thinning. In some potentially suitable stands, the thinning window has also been missed.
Thinning will be carried out where feasible, and it ties in with management objectives

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. The thin years and net areas listed in the table are provisional and may be adjusted once pre-thinning assessment has been carried out.

Map 4 shows all potential thinning coupes, but the final thinning area for each coupe may be reduced once the stands have been assessed, and some coupes may be judged not yet ready for a first thin.

LISS

Previous forest design plans were aspirational in identifying substantial areas to be managed using lower impact silvicultural systems (LISS), mainly continuous cover forestry (CCF) systems, focusing on the main threshold and recreational areas. While some of these areas have been thinned in the past, many have not, and combined with unsuitable soils and more exposed sites, CCF aspirations have been considerably reduced.
There are notable stands of previously thinned Norway spruce that provide habitat and food source for red squirrels as well as potential raptor nesting sites. Ground conditions and risk of windblow from further thinning have led the decision to retain these long term retentions, but no longer consider for any form of CCF.

70095
This coupe is mainly of previously thinned P1988 Sitka spruce, but includes some small stands of mature larch and larch/spruce. The intention is to continue thinning and fell small areas along the lines of group selection. Group felling will be between 0.05 – 0.25 ha, with the intention of taking approximately six groups at each intervention, when the

rest of the matrix is thinned, at five year intervals. There will therefore be two felling/thinning interventions during the ten year plan period, so a maximum 1.5 ha felling at each intervention, plus thinning of the rest of the matrix (as dictated by pre-thinning survey). These maximum felling areas are included in Table 3 (Clearfell Summary).
Natural regeneration is the preferred method of restocking, but in the southern part of the coupe, rather than wait for natural regeneration of Sitka spruce, the gaps will be planted with Norway spruce/Douglas fir and native broadleaves , the latter to provide a buffer for the adjacent natural reserve.

70100

This coupe incorporates Hillhouse Wood, an area of long established woodland of plantation origin (LEPO -see fuller description in Appendix 1 Biodiversity section). The objective is to maintain the character and biological interest within the woodland, through LISS. The plan is to thin Norway spruce from close to the cleuchs (burns) over the next two thinnings, to promote ground flora development. Ideally larch should gradually be thinned to promote recruitment of beech regeneration and provide sufficient light for under-planted native broadleaves in between the cleuchs. However, with the very real threat of infection by *Phytophthora ramorum,* all of the larch will be felled at the next thinning. This effectively means a small clearfell of 2.7 ha larch within the LISS coupe, as shown in Tables 3 and 4.
Restocking the gap left by the larch and enrichment planting elsewhere (near the cleuchs) will include suitable native species such as hazel, wych elm and goat willow.

70101

This small coupe is a mixture of P1998 NS, broadleaves and open ground, and has a mountain bike route going through it. The Norway spruce is distributed in several smaller groups with big gaps in between, and therefore numerous edge trees. The objective is to develop a stable and well-spaced stand that provides an attractive setting for the mountain bike route. Through a shelterwood silvicultural system, the stand will gradually be opened up to enable Norway spruce natural regeneration supplemented by underplanting with other suitable conifer and broadleaf species.

70102

This is a stand of well thinned P1944 Norway spruce, with limited natural regeneration, and an adjacent stand of well thinned P1944 Japanese larch with patches of advanced Japanese larch regeneration and Sitka spruce. The objective is to continue to develop attractive mature, open stands of Norway spruce and Japanese larch, enhancing the visitor experience along main forest trails and to produce high quality timber. Over time, through a uniform shelterwood silvicultural system, the existing natural regeneration will be supplemented by other suitable conifers including Norway spruce (ideally from natural regeneration) and Douglas fir. Non-Sitka conifers will be favoured in subsequent respacing and thinning. If the current larch succumbs to *Phytophthora ramorum* it is most likely that it will require immediate clearfell.

Long term retentions / minimum intervention / natural reserves

Long term retention (LTR)

70035 is a long term Forest Research (FR) experimental site with several stands of unthinned P90 SS. Once FR have concluded their experiment this will be clearfelled and restocked with a diverse range of species.

70049 is a very diverse coupe including a range of species of different ages, including pre-Forestry Commission P1875 Norway spruce/Scots pine, P1944 Norway spruce/Sitka spruce, P1984 Norway spruce/Douglas fir/Japanese larch and numerous younger stands of coniders and broadleaves. The older stands have been well-thinned and there are patches of advanced natural reneration. They appear stable, sitting predominantly on brown earth soils, and there is scope to develop these stands using continuous cover silvicultural systems.

70051 is an extensive area (57 ha) of mainly mature NS (P37), with large pockets of windblow. Historically this area has been thinned, but with soft, wet ground conditions a lack of brash and a high risk of further windblow, no further thinning will be carried out. With much of the Sitka-dominated forest now felled and into a second rotation, this is a valuable mature stand of Norway, in particular for red squirrels, and will be retained for as long as it is sufficiently stable.

70071 & 70074 are older conifer stands, with large areas of SS over 70 and 80 years old. As above, these will be retained for as long as they remain sufficiently stable. Largely unthinned, options for continuous cover management are limited.

70066 has been expanded to offer some protection from windthrow to a core stand P53 SS/NS that includes some of the tallest and broadest trees in Newcastleton. This stand has the potential to develop old growth characteristics and will be considered for future minimum intervention and possibly natural reserve.

70098 is a well thinned and fairly stand of P1921 Japanese larch and Sitka spruce on steep ground at the forest edge. Adjacent to natural reserve and minimum intervention coupes, there is potential for this to be managed as minimum intervention too. There is currently a risk of infection of the larch by *Phytophthora ramorum*.

Minimum intervention (MI)

This is the most appropriate type of management for the main riparian corridors where native broadleaves are well enough established, or where further natural regeneration is expected with minimal management input. It is also appropriate for established stands of SP/NS where conservation of biodiversity is the main objective and trees are established at sufficient stocking levels and well-spaced. Many of these areas are smaller parts of other, mainly clearfell, management coupes, but some MI coupes have been specifically designated. In time, the number and size of specific MI coupes will increase. MI also

provides an important buffer between designated natural reserves and adjacent coupes. Management in MI areas will be restricted to tree safety work close to paths and public access, tree felling resulting from statutory plant health notices, and removal of excessive invasive non-native species.

Natural Reserves (NR)
70096 is the main NR, including a section of Clintheuch Linns, a steep sided gorge, and mature conifers either side of it. It is not possible to exclude all management from this area due to the proximity of a forest road and recreation routes, and the NR also includes mature larch that may be at risk from infection by *Phytophthora ramorum* and therefore potential statutory plant health notice resulting in felling.

70116 is a smaller NR of just over 3 ha with a mixture of P1927 SS and NS, along with more recent natural regeneration of SS and some broadleaves. There is potential for a larger NR in the future, linking up with nearby MI coupes 70114 and 70115,

Tree species choice

Species choice in much of the forest is limited by soil types and climatic conditions. Guided by the principles of Ecological Site Classification (ESC), and in line with management objectives, conifer and broadleaf species diversification will be developed as far as possible.

Timber production is an important LMP objective, and Sitka spruce remains the most suitable species to achieve this across most of the forest, with the current 59% decreasing to 57% by Year 10 of this plan and to 54% by Year 20. Lodgepole pine will be planted in intimate mixture with Sitka spruce over large parts of the forest to help compensate for nutrient-poor peaty soils. On one site, coupe 70059, alder will be tried as an alternative nurse species.

Given the limited opportunities to diversify conifer species, where soils and other site conditions allow, notably on relatively sheltered brown earths, surface water gleys (where drainage is not an issue) and patches of ironpan soils, suitable alternative species will be planted including Douglas fir, Norway spruce, Scots pine and Noble fir.

In the previous plan larch was an important species for achieving a degree of conifer species diversification, and providing landscape benefits. With the continuing threat of *Phytophthora ramorum*, larch will not be an option for the foreseeable future, so additional areas of Norway spruce and Scots pine in particular are planned to compensate. Birch will be included in mixture with Scots pine where additional landscape benefit is sought, as well as providing additional biodiversity benefit.

The approach to native broadleaves is covered in the section on native woodland below. There are no proposals to restock with non-native broadleaves.

Natural regeneration
Clearfell coupes will be assessed for signs of natural regeneration ahead of felling and where there is encouraging evidence, this will be factored into restock proposals. Where management through continuous cover forestry is planned, and the current species is desired in the next crop, natural regeneration will be encouraged. In riparian areas, where native broadleaves are established through planting or previous natural regeneration, it is expected that this will provide the seed source for further expansion of native woodland. Excessive natural regeneration of non-native conifers can pose a threat to this habitat and this will be monitored.
New planting
n/a
Protection
In common with most forests in the region, there is a high level of browsing pressure from roe deer in Newcastleton. A variety of factors currently present challenges to achieving deer cull targets. • The main road network runs south-west to north-east with few links, making access for stalking difficult; • Across the national border in Kershope Forest, Forestry England have lower impact targets and do not carry out night shooting, so deer cross the border in significant number. • Areas with recreation facilities and higher visitor numbers make stalking more difficult. There is little scope to significantly increase the forest road infrastructure, but the opportunity will be taken to improve access for deer management at the time of restocking. In the forest design, where possible, areas of 'soft' conifers and broadleaves will be established on easily defendable and consolidated sites. Where economies of scale permit, deer fencing will be considered.
Road operations
Table 10 and **Map 6** refer. Newcastleton has a substantial road network with minimal need for new roads, but during the plan period several roads will require major upgrading. No new quarries or expansion of existing quarries is proposed in this plan period. Swarf Quarry is the main active quarry for the supply of stone for forest roads works in Newcastleton Forest, and blasting will be carried out periodically during the plan period

to obtain stone. All quarrying works will be carried out in accordance with the Quarry Regulations 1999 and Explosives Regulations 2014.

Haulage of timber and stone is carried out following industry best practice for timber transport, and issues addressed through the local Timber Transport Forum (Appendix III Consultation Record, Point 4 refers).

Biodiversity

Designated sites

There are no designated sites for nature conservation.

Native woodland

Native woodland (mainly native mixed broadleaves in the sub compartment database) currently occupies around 6% of the forest, and by the end of the plan period (Year 10) is expected to reach 7%. The focus of native woodland expansion will continue to be along the main riparian corridors of Kershope Burn and Tweeden Burn, as well as Priesthill Burn, Harden Burn and burns feeding into Boghall Burn in the north of the forest.

Although sites vary locally, the main riparian corridors are dominated by typical surface water gleys. Choice of tree species in these areas will be guided (but not bound) by the following NVC woodland types:
W7 (alder-ash woodland with yellow pimpernel) – alder, downy birch, goat willow, oak (pedunculated and sessile), rowan, holly, bird cherry, grey sallow, hazel, hawthorn.
W9 (Upland mixed broadleaved woodland with dog's mercury) – downy birch, rowan, oak (pedunculate and sessile), wych elm, alder, holly, aspen, bird cherry, hazel.
Ash is notably missing from both due to on-going issues with Chalara ash dieback.
On peatier sites including peaty surface water gley, options are more limited in line with:
W4 (birch woodland with purple moor grass) – downy birch, goat willow, alder, grey sallow, eared willow, bay willow.

PAWS

There are no PAWS sites in Newcastleton Forest.

Protected and priority habitats and species

There are various small areas of wetland (bog and mire) habitat distributed throughout the forest, on rides, coupes edges and unplanted riparian areas. These will be left unplanted, but no other specific management is proposed. Opportunities to improve the condition of the small areas of raised bog at Stell Knowe, Swarf Moss will be considered, but no adjacent felling is planned in this plan period so opportunities will be limited. These are small scale and not priority sites.

Prior to forest operations, sites will be checked for the presence of protected and important species to ensure that these species are adequately protected, licences are in

place where necessary, and appropriate mitigation measures are taken. Several species are highlighted in Appendix 1 (Description of Woodlands), including badgers, red squirrels and various raptors.

Conservation efforts will focus on improving the riparian habitat network, through the on-going process of forest restructuring (mainly clearfell and restocking). An increasing area of connected native woodland and open ground will provide habitat opportunities for a variety of flora and fauna. Increasingly these areas will be managed as minimum intervention. Within the forested area, natural reserves and long term retentions will provide more mature woodland, with some stands developing 'old growth' characteristics. Well thinned areas will provide opportunities for raptors to nest, and improve ground vegetation conditions for other wildlife. More areas of Scots pine and/or Norway spruce will be planted to provide future habitat for red squirrels in particular, and where possible these will be thinned to develop stand stability, healthy coning crowns and more open woodland.

Open ground

Open ground and felled areas currently account for 22% of the forest, with no significant change over the plan period.

Dead wood

Opportunities for retaining and creating deadwood will be identified during the work planning phase of all felling and thinning operations, favouring areas with the highest deadwood ecological potential.
In Newcastleton these areas are within natural reserves, long established woodland of plantation origin (LEPO), minimum intervention areas and main riparian areas with native woodland.

Invasive species

Trapping of grey squirrels will continue to be supported on the edge of the forest which lies within Teviot and Rule Priority Area for Red Squirrel Conservation (PARC).

Historic Environment

Designated sites

Refer to **Map 11** and **Appendix V**.

Our key priorities for archaeology and the historic environment are to undertake conservation management, condition monitoring and archaeological recording at significant historic assets; and to seek opportunities to work in partnership to help to deliver Our Place in Time: the historic environment strategy for Scotland (2014) and Scotland's Archaeology Strategy (2015). Significant archaeological sites will be protected and managed following the UK Forestry Standard (2017) and the FCS policy document Scotland's Woodlands and the Historic Environment (2008). Harvesting coupes, access roads and fence lines will be surveyed prior to any work being undertaken in order to

ensure that upstanding historic environment features can be marked and avoided. At establishment and restocking, work prescriptions remove relevant historic environment features from ground disturbing operations and replanting. Where appropriate, significant historic assets are recorded by archaeological measured survey. Opportunities to enhance the setting of important sites and landscapes will be considered on a case-by-case basis (such as the views to and from a significant designated site).

The Regional Historic Asset Management Plan includes conservation management intentions for designated historic assets on Scotland's national forests and land. Details of all known historic environment features are held within the Forester Web Heritage Data and included within work plans for specific operations to ensure damage is avoided. Significant historic environment features will be depicted on all relevant operational maps.

The only designated site in Newcastleton Forest is Langknowe SAM. The unplanted buffer zone left after adjacent felling and restocking will be kept clear. Sitka spruce regeneration poses the main threat: this will be monitored annually and pulled out as and when necessary. There are no plans currently to develop interpretation at this site.

Other features

There are numerous unscheduled features throughout the forest, in particular stock enclosures. These will be protected during forest operations and an appropriate buffer maintained around the features when restocking.

Landscape

Newcastleton Forest fits in well in the surrounding landscape, and most of the forest has a low profile as seen from the village and immediate area. The on-going restructuring, primarily through clearfell and restock, will continue to diversify the forest structure. Thinning and management with low impact silvicultural systems will help develop an attractive forest environment close to the core recreational area.

People

Neighbours and local community

There is a strong sense of community in and around Newcastleton village, with several representative organisations including Newcastleton & District Community Council and Newcastleton & District Community Trust.
Tourism is a vital element to the local economy, and the forest is seen as an important asset for drawing walkers, mountain bikers, horse riders, etc. to the area, many of whom are likely to stay, eat and shop locally. The 7 Stanes mountain bike route, starting and finishing in the village, is of particular importance. See also the Pubic Access section below.

Newcastleton is vulnerable to flooding from the Liddel Water, so the local community has a close interest in any activities upstream that may influence the flooding risk, including forest management. It is important that forest operations are carried out as sensitively as possible in line with Forests and Water Guidelines, to minimise the risk of any negative downstream impact. See also the section on Flooding below.

Public access

Map 12 - Access & Recreation

FLS will continue to collaborate with the local community and neighbours to promote formal recreation and informal access in the forest, and to enhance the overall visitor experience. Connectivity with the village will be an important aspect of this.

Formal recreation infrastructure will be maintained to a high standard, appropriate to the type of facility. As resources allow, FLS will aim to refresh and improve the existing 7 Stanes mountain bike routes. On-going management of the forest will lead to a more diverse forest environment, and provide an attractive backdrop and setting for public access and recreation.

Formal paths and trails, including the Public Right of Way on Priest Hill, and National Cycle Route 10 along the Kershope Burn, will be protected as far as possible during forest operations, and any necessary remedial work carried out as a matter of priority. FLS will only restrict public access where it is absolutely necessary, to keep the public and workers safe, and will keep disruption to a minimum. Where necessary, diversions will be put in place, and routes only temporarily closed if no alternative options are available.

Unauthorised access by motorised vehicles is a problem in the forest, in common with most FLS forests. FLS will continue to monitor this and will aim to reduce unauthorised access by encouraging staff, contractors, hauliers and other authorised forest users with vehicles to keep forest gates and barriers locked, or at least closed while forest operations are taking place in the forest.

Soils

Ground preparation

Appropriate ground preparation will be essential to successfully establish restock crops. The choice of ground cultivation will consider short term benefits form establishment, as well as longer term effects on tree stability, future forest operations and the environment.

Deep peats

Sites with deep peats will be reviewed on a site by site basis. In line with FCS (now Scottish Forestry) Practice Guide on Deciding Future Management Options for Afforested Deep Peatland and associated FLS Policy, options to restock with conifers (most likely Sitka spruce/Lodgepole pine), peatland edge woodland (native broadleaves – most likely willow and birch) or bog restoration will be considered.

Water

Drinking water

Known water supply points and pipelines are recorded as a layer in our Forester Web GIS and are shown on Map 10 Water Supplies. These will be highlighted during the work planning process and identified on the ground to ensure they are protected during forest operations. Households connected to these supplies will be contacted prior to work commencing. Guidance on protecting private water supplies during forest activities will be followed (available via the Forestry and Water Scotland Initiative: www.forestrywaterscotland.com). PWS are generally already in fairly open areas, often with non-productive broadleaves, but further buffering of water supplies with open ground and/or native broadleaves will be considered as and when associated coupes come up for felling and restocking.
Thinning operations are planned in coupe 70079 in the 10-year plan period, and will take into consideration the PWS at Scotch Kershope.

Newcastleton Spring Public Water Catchment is also shown on Map 10. This is a Scottish Water (SW) asset, feeding Newcastleton Water Treatment Works. In addition to meeting the UK Forest Standard and Forests and Water Guidelines, the following guidance will be taken into account when planning forestry activities:

1. SW/FCS Guidance on Forestry Activities near Scottish Water Assets (also available via the Forestry and Water Scotland Initiative, as above)
2. SW List of precautions to protect drinking water and SW assets during forestry activities (available via SW Sustainable Land Management website: https://www.scottishwater.co.uk/SLM)

Thinning operations are planned within part of the catchment during the 10-year plan period, and SW will be contacted well in advance of this work taking place, to agree suitable risk assessment and methods of work.

Watercourse condition

According to the most recent SEPA survey of water quality in 2014, the main water courses in Newcastleton, Kershope Burn and Tweeden Burn, are both in overall good condition (as is Liddel Water).

Riparian woodland that acts as a buffer for water courses will be enhanced through further planting and natural regeneration of site suitable native broadleaves (see section on native woodland above). This will help protect water quality as well as aiding sediment removal and erosion control, moderation of shade and water temperature, maintenance of habitat structural diversity and ecological integrity, and enhancement of landscape quality.

To help maintain this status, all management operations will be carried out in accordance with Forests and Water requirements of the UK Forest Standard.

Flooding
Newcastleton Village has been identified as an Objective Target Area (OTA) in SEPA's Solway Flood Risk Management Strategy. OTAs are key flood locations across Scotland where assets are vulnerable to flooding. The village and immediate surrounding area have also been identified as a Potentially Vulnerable Area (PVA 14/03), as detailed in Dumfries & Galloway Council's Solway Local Flood Risk Management Plan. Natural flood management (NFM) is not included in the Solway Local Flood Risk Management Plan 2016-2022, but the Natural Flood Risk Management and River Basin Management Plan report (2018), identified potential NFM measures within the wider catchment. These are very broad and focus on the Liddel water and its main tributaries in the lower lying areas, i.e. below the established plantation forests. There are limited opportunities in Newcastleton Forest for NFM measures that would have a significant effect downstream. 35% of the Liddel drainage area is forested and Newcastleton Forest occupies less than 5% of this. In any given year during the LMP period only 200 Ha or 7% of the forest (1% of the total catchment area) will either be felled awaiting restocking, or young crop less than 10 years old. Felling is phased and this will ensure that the evapotranspiration benefits of tree canopy, in relation to flooding, will remain throughout the plan period. Through careful phasing of felling coupes and following best practise in line with Forests and Water Guidelines, the forest will continue to provide the evapotranspiration benefits of tree canopy, and potentially negative impacts will be avoided. Enhancement of riparian areas through native broadleaf planting will contribute positively to water management in the forest.

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Appendix I: Description of Woodlands

Topography and Landscape	Most of Newcastleton Forest falls within Landscape Character Type (LCT) 96: Southern Uplands with Forest – Borders. This is characterised by large scale rolling landform with higher dome or cone-shaped summits, dominated by coniferous forest cover. Priest Hill and the threshold at Florida fall within LCT 113: Upland Valley with Pastoral Floor. This is characterised by flat valley bottom pastures, strongly enclosed by steep valley sides merging with heather and forest covered uplands Despite its size, the forest fits in well with the wider landscape , and little of it is visible from the village of Newcastleton.
Geology and Soils	**Map 8 - Soils** The underlying geology is predominantly of sedimentary bedrock, largely sandstone and argillaceous rocks (Border Group). Peaty surface water gleys are the dominant soils in the forest, with surface water gleys more evident in the riparian areas along the main watercourses, and sizeable patches of unflushed blanket bog areas on higher ground. There are smaller areas of ironpans and brown earths in

	the north western part of the forest, in particular on Priest Hill, where there are also some uncharacteristic sandy soils.
Climate	Climate conditions are variable, covering a broad spectrum from warm, moist and sheltered to cool, wet and severely exposed. There is an clear gradient progressively becoming cooler, wetter and more exposed as altitude is gained heading from south west to north east. Average accumulated temperature (day degrees above 5°C): 969 – 1493 Average moisture deficit (evaporation – precipitation): 56 – 136mm
Hydrology	Newcastleton sits within the Solway Catchment, part of the Solway-Tweed River Basin District. There many burns and minor water courses in the forest that flow into the Liddel Water, either side of Newcastleton Village, and ultimately drain into the Solway via the River Esk. The main burns within the forest are the Kershope Burn which marks the boundary with Kershope Forest, and the Tweeden Burn which runs through the centre of the forest (NE – SW) and has the most extensive catchment within the forest. Newcastleton Village has been designated a Potentially Vulnerable Area (PVA 14/03) in SEPA's Solway Flood Risk Management Strategy and Dumfries & Galloway Council's Solway Local Flood Risk Management Plan.
Windthrow	**Map 9 – DAMS** Average DAMS ranges from 11 in more sheltered lower slopes and gullies to 19 on exposed higher ridges
Adjacent land use	The forest is completely flanked on its south eastern side by Kershope Forest, part of the much larger, and predominantly coniferous, Kielder Forest. On its northern flank is a large area of privately owned coniferous plantation. The remaining neighbouring land is primarily agricultural (rough grazing).
Public access	**Map 12 - Access & Recreation** Newcastleton is one of the 7 Stanes mountain bike (MTB) centres, with the main route starting and finishing in the village centre. The MTB routes run through some of the more diverse and attractive parts of the forest in the west. National Cycle Route 10 follows the Kershope Burn almost the length of the forest boundary

	Formal FLS waymarked walking trails are located at Priest Hill, with parking available at the Priest Hill car park. The Paths Around Newcastleton booklet includes four routes through the forest. The booklet is available locally or via Scottish Borders Council website: https://www.scotborders.gov.uk/downloads/file/676/newcastleton There is also a longer distance route, the Cross Border Trail, that links with Kielder Forest. There is one Public Right of Way across Priest Hill and no core paths Rock UK's Whithaugh Park residential centre is located close to Priest Hill and runs various outdoor activities in the forest including mountain biking and orienteering. In keeping with the Scottish Outdoor Access Code, private vehicles are not as a general rule permitted to access the forest. Forest gates and barriers should be kept closed at all times.
Historic environment	**Map 11 – Heritage Features and Appendix V** The only scheduled ancient monument (SAM) is Langknowe, a long cairn measuring about 175 ft long with a maximum width of 45 ft and greatest height, 5 ft. One excavated burial cist lies 60ft from the N end measuring 1ft 7ins wide by 3ft long. More cists or a chamber are reported. The buffer area around the SAM has been left unplanted. There are numerous other unscheduled sites throughout the forest, mainly small stock enclosures and old roads. Some of these are recorded from 1st Edition OS map, with no evidence found on the ground.
Biodiversity	The forest and surrounding area is home to a variety of species including red squirrel, various raptors, waders, badgers, otters and butterflies. Efforts to conserve biodiversity have focused on enhancing the riparian habitat network. Whilst Newcastleton is no longer considered a 'core red squirrel area', or a 'red squirrel stronghold', it is in the Teviot and Rule Priority Area for Red Squirrel Conservation (PARC). Grey squirrel control is carried out within the forest from March to August and is coordinated by Saving Scotland's Red Squirrels. There are no ancient woodland sites in Newcastleton, although there are some sites close to the forest boundary, notably Tweeden Plantation east of Hillhouse Wood on the western edge of the forest , and an area of woodland around Whitehaugh Park, east of Priest Hill.

	Hillhouse Wood, while missing from the Scottish Ancient Woodland Inventory, should be considered as Long-Established of Plantation Origin (LEPO). Survey by Richard Thompson, FLS Native Woodland Ecologist, highlighted a rich and diverse ground flora, including bluebells, opposite-leaved golden saxifrage, greater stitchwort, dog's mercury, enchanter's nightshade, herb-robert, figwort and primrose. Two natural reserves were confirmed in a national review of natural reserves in 2016. The first is The Linns, a steep sided gulley with a rich flora including rare lichens and bryophytes. The second is a small mature stand with some of the oldest SS and NS (P28/P27) in Newcastleton, close to the Kershope Burn.
Invasive species	There are no reports of invasive non-native plants in Newcastleton Forest. Grey squirrel is the main animal species of concern (see Biodiversity section above).
Woodland composition	Newcastleton Forest comprises 2376 Ha of predominantly upland conifer forest located in the very South of the Scottish Borders, immediately east of Newcastleton village and adjacent to Kershope and Lewisburn Forests in Northumberland. The earliest planting dates back to the 1920s. Further planting was carried out in most decades, the forest gradually expanding north and east. Priest Hill, just to the north east of Newcastleton village, was the most recent addition, planted in 1990. Forest restructuring has been underway for the last 20 years, largely through a clearfell system, and is progressing well. Hillhouse Wood, a notable area of LEPO (see above) evident on OS First Edition maps, is composed of a stand of 1930's Japanese larch and Norway spruce as well as c. 1900 beech, with an understorey of beech seedlings and a few Norway spruce seedlings. There is evidence of ASNW cores running down the watercourses. Current species composition and age distribution is shown on **Map 7**.
Plant health	*Phytophthora ramorum* was confirmed on the side branch of a single mature Japanese larch, and all the surrounding larch within a 250m buffer zone subsequently felled. The remaining larch remains vulnerable to infection.

	Dendroctonus micans (great spruce bark beetle) has been confirmed on several mature spruce trees in recent years, and *Rhizophagus grandis*, a host-specific predatory beetle, has been released to control the spread of this pest.

Appendix II: EIA screening opinion request form

Overleaf if required

Appendix III: Consultation record

Consultee	Date contacted	Date of response	Issues raised	FES (now FLS) response
FDP Consultation Event - 1st March 2017 Drop-in session held at the Buccleuch Centre, Newcastleton, 3pm – 8pm				
Newcastleton & District Community Council			1. Requested that FES protect the original red sandstone sheep dip trough at Priest Hill (opposite side of forest road from the village water supply). It was identified by a local historian.	1. Noted and to followed up by the Delivery Team
Newcastleton & District Community Council			2. With regard to the proposed windfarm development in Newcastleton Forest, requested that stone extraction happens from Swarf Quarry via Dykecrofts, through Newcastleton Village and back into Florida, to minimise impact on MTB trails (as promised during the windfarm scoping exercise). Trail closures would have a massively negative impact on the village economy/well-being.	2. The proposed windfarm development is at an early stage (pre-planning), and if it is eventually approved works are unlikely to start for several years. The request is noted and FES will ensure that any future Agreement with the windfarm developer will aim to minimise disruption to the trails in the forest.

			3. Also requested improved signage for the Cross-Border trails, as people are getting lost.	3. Noted and to be followed up by the Recreation (now Visitor Services) Team.
Newcastleton Community Council monthly meeting in Newcastleton Village Hall - 14th March 2017 Presentation given by FES staff on FES, Dumfries & Borders FD and Newcastleton LMP, highlighting the main issues (opportunities and constraints) as seen by FD staff, followed by questions/comments from attendees.				
			Several general issues/concerns were raised: 4. Timber transport issues – there is still a perception that timber lorries frequently drive through the village too fast, and lack courtesy on the local roads (sometimes travelling in convoy). Timber lorries are also seen as causing significant damage to minor roads. 5. Flooding in the village – while acknowledging that forestry is one of many factors potentially influencing flooding, concerns were expressed that poor practice was having a negative impact. A specific example outside the National Forest Estate was given. 6. Importance of the forest and its trails for the local economy –	4. Acknowledging the community concerns, it was explained that once timber lorries are on the public road FLS has no direct responsibility for them. The responsibility for safe and considerate driving on public roads lies with the drivers and haulage companies. Nearly all timber is sold as 'standing' or 'at roadside' in the forest, and its onward movement is the responsibility of the timber buyer. The requirement for good practice in timber haulage is included in sales contracts between FLS and timber buyers. The Industry best practice is contained in the following documents, which can be found at the Forest Industry Safety Accord (FISA) website https://www.ukfisa.com/safety-information/safety-library/haulage.html • The Forest Haulage Safety Manual (2018) • Road Haulage of Round Timber Code of Practice (2012) Timber transport as a whole, including agreements regarding public roads, is covered by local timber transport forums. Amongst their objectives is

			concerns regarding long periods when trails are closed or significantly diverted during forest operations, including roads works, and the subsequent impact on visitor experiences (and therefore impact on local accommodation providers, cafes, etc. if visitors are put off)	provision of a forum for discussion of local community concerns about timber haulage. https://timbertransportforum.org.uk/groups/borders 5. Local flooding issues were acknowledged, but it was explained that providing good forestry practice is followed, in accordance with Forests and Water Guidelines, well managed forests should on balance contribute positively to water management within the catchment. This is covered in the Flooding Section of the LMP (4.0 Management Proposals – guidance and context). 6. Every effort will be taken to minimise disruption during forest operations but it was emphasised that Newcastleton is a working forest producing valuable timber. Work carried out aims to improve the forest environment around recreation trails (the 'welcome' and 'interactive' visitor zones), and the on-going felling and restocking is helping develop a more diverse forest in terms of age structure and species diversity.
Forestry Panel Meeting / Newcastleton LMP Scoping Meeting – 21st June 2017 Indoor presentation focusing on the draft LMP Analysis and Concept, and discussion on major themes, followed by a visit to several sites in the forest. The following organisations were represented at the meeting: FCS, South Scotland Conservancy Ettrick & Yarrow CC Newcastleton & District CC				

Newcastleton Community Trust Upper Liddesdale & Hermitage CC Upper Teviotdale & Borthwick Water CC Confor Scottish Borders Council Historic Environment Scotland SEPA SNH RSPB				
			The main issues discussed in the meeting were those already picked up at the community council meeting on 14th March, especially timber transport. 7. During the site visits there was considerable interest in continuing to expand native broadleaf woodland within the riparian habitat network, and some concerns were expressed that past attempts in some riparian areas had been unsuccessful. 8. There was also discussion regarding conifer species choice, with a keenness to see more diversification where possible. It was acknowledged that the soils and site conditions in	7. The focus for expanding native broadleaf woodland will continue to be along the main riparian corridors including Kershope Burn, Tweeden Burn and tributaries. It was acknowledged that in some parts of the forest previous attempts at establishing broadleaf woodland had been disappointing. Moving forward FLS will target planting more carefully in more consolidated groups where it is more accessible so easier to protect, monitor and maintain during establishment. 8. It is challenging to establish anything productive other than Sitka spruce in Newcastleton, but Ecological Site Classification (ESC) and local knowledge will be applied to identify potential sites for alternative conifers that meet LMP objectives where at all possible. This is likely to be mainly Norway spruce and Scots pine, but there are small areas where Douglas fir and other minor species will be suitable. Larch is not an option for the

			Newcastleton are generally unfavourable for most species.	foreseeable future due to the threat of *Phytophthora ramorum*.
Rock UK, Whitehaugh Farm	26th July 2017		A general discussion about the forest and proposals for Priest Hill. The main interest is access from Whitehaugh Farm, and the trails in the forest. Rock UK are keen to improve the informal trail (different from the existing MTB trails) that link Whitehaugh Farm with Priest Hill.	Some of Priest Hill will continue to be thinned and windblown trees removed, but it is no longer considered suitable for conversion to continuous cover forestry (as proposed in the previous plan). It will be divided into several smaller clearfell coupes, but no felling is proposed for the next 10 years. Discussions on the link trail and wider recreation network were referred to the Visitor Services Team.
Scottish Borders Council, Flood and Coastal Management Team	4th March 2020	6th March 2020	Requested information on Natural Flood Management (NFM) Study in Liddel Water catchment. NFM report sent by SBC, indicating that for potential NFM measures the focus is very away from the main afforested areas, and more on lower lying land closer to the Liddel Water and its main tributaries.	Refer to Flooding in Section 4 of the main text.
Scottish Water	20th May 2020	26th May 2020	Requested information on Newcastleton Spring Public Water Supply, and feedback on LMP proposals. Key points from Scottish Water: 1. A review of our records indicates that the proposed activity falls partly within a drinking water catchment where a Scottish Water abstraction is	Refer to Drinking Water in Section 4 of the main text and Map 10.

			located. Scottish Water abstractions are designated as Drinking Water Protected Areas (DWPA) under Article 7 of the Water Framework Directive. Newcastleton springs supply Newcastleton Water Treatment Works (WTW) and it is essential that water quality and water quantity in the area are protected. In the event of an incident occurring that could affect Scottish Water we should be notified without delay using the Customer Helpline number 0800 0778 778. 2. In addition to meeting the UK Forestry Standard (UKFS) and Forests and Water Guidelines, we would request that the "Guidance on Forestry Activities Near SW Assets" is taken into account. Scottish Water have also produced a list of precautions for a range of activities. This details protection measures to be taken within a DWPA, the wider drinking water catchment and if there are assets in the area. Please note that site specific risks and mitigation measures will require to be assessed and implemented. These documents and other supporting information can	

			be found on the activities within our catchments page of our website at www.scottishwater.co.uk/slm. As you state in your e-mail, Scottish Water should be consulted prior to any planned work commencing. 3. A review of our records indicates that there are raw water mains in the vicinity. This should be confirmed however through obtaining plans from our Asset Plan Providers, listed in the SW list of precautions for assets, which can be found on the activities within our catchments page of our website at www.scottishwater.co.uk/slm. In the event that asset conflicts are identified then early contact should be made with the Highway Authorities and Utilities Committee (HAUC) at Hauc.diversions@scottishwater.co.uk. It should be noted that the proposals will be required to comply with Sewers for Scotland and Water for Scotland 4th Editions 2018, including provision of appropriate clearance distances from Scottish Water assets.	

Appendix IV: 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*

Table of Working Tolerances Specific to Larch

	Adjustment to felling period	Adjustment to felling coupe boundaries	Timing of restocking	Changes to species	Changes to road lines
FC Approval not normally required	Fell date for all larch can be moved and also directly associated other species	Larch areas can be treated as approved coupes. Other conifers directly associated with larch being felled, may also be removed up to an equivalent of 20% of the area occupied by the larch or 5 ha, whichever is greater	To be undertaken within the overall plan approval period.	Replacement as per the agreed restock plan, but where this is not specified or is larch this may be replaced with either another diverse conifer (not SS) or Broadleaves.	
Approval normally by exchange of letters and map. **In some circumstances Approval by formal plan amendment may be required**		Removal of areas of other species in excess of the limits identified above.	Restocking proposals outwith the plan approval period.	Restocking proposals for other species which do not meet the tolerances identified above.	New road lines or tracks directly necessary to allow the extraction of larch material.

Appendix V: Historic Environment records

Refer to **Map 12**

Designation	HES Ref	Name	Feature Description	Grid Reference	Importance	Area (ha)
Scheduled Monument	SM2154	Long Knowe, long cairn	A long cairn measuring about 175 ft long with a maximum width of 45 ft and greatest height, 5 ft. One excavated burial cist lies 60ft from the N end measuring 1ft 7ins wide by 3ft long. More cists or a chamber are reported.	NY527862	National	0.17
Undesignated		HLA Relict Area	18th Century-Present Rectilinear Fields and Farms	NY 509891	Uncategorised	1.07
Undesignated		KERSHOPE BURN	STOCK ENCLOSURE (sheepfold)	NY 527856	Local	0.1
Undesignated		SHIEL BURN	STOCK ENCLOSURE (circular sheepfold)	NY 543902	Local	0.03
Undesignated		KERSEHOPE BURN	CAIRNFIELD, HUT CIRCLE(S), RIG AND FURROW (hut circles, cairn field and rig and furrow)	NY 507843	Regional	4
Undesignated		NEWSTEAD	LIME KILN	NY 506894	Regional	0.01
Undesignated		HLA Relict Area	Later Prehistoric Settlement and Agriculture	NY 501885	Uncategorised	1.68
Undesignated		HLA Relict Area	Later Prehistoric Settlement and Agriculture	NY 505888	Uncategorised	1.53
Undesignated		SHIEL BURN	STOCK ENCLOSURE (circular sheepfold)	NY 542900	Local	0.02
Undesignated		WHITHAUGH BURN	STOCK ENCLOSURE (square sheepfold marked on 1st Edition OS map)	NY 505881	Local	0.01
Undesignated		ROBIN'S RIG	STOCK ENCLOSURE (circular sheepfold)	NY 534861	Local	0.05
Undesignated		PRIEST HILL	STOCK ENCLOSURE (circular sheepfold)	NY 506883	Local	0.01
Undesignated		HARDEN BURN	STOCK ENCLOSURE (square sheepfold with a small pen on NE side)	NY 523896	Local	0.08
Undesignated		TWEEDEN BURN	STOCK ENCLOSURE (rectangular sheepfold attached to N side of field wall)	NY 521872	Local	0.02
Undesignated		HLA Relict Area	18th Century-Present Rectilinear Fields and Farms	NY504880	Uncategorised	3.39
Undesignated		HLA Relict Area	18th Century-Present Rectilinear Fields and Farms	NY 511891	Uncategorised	3.22
Undesignated		HLA Relict Area	No information available	NY 506879	Uncategorised	3.98
Undesignated		HLA Relict Area	18th Century-Present Traditional Peat Cutting	NY 511876	Uncategorised	2.09

Undesignated		HLA Relict Area	18th Century-Present Rectilinear Fields and Farms/Medieval/Post-medieval Sheep Enclosures	NY 499880	Uncategorised	1.19
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 500862	Uncategorised	41.37
Undesignated		HLA Relict Area	19th-20th Century Smallholdings	NY 524873	Uncategorised	4.45
Undesignated		HLA Relict Area	18th-19th Century Plantation Enclosure	NY 502867	Uncategorised	10.14
Undesignated		PRIEST HILL	EARTHWORK, SETTLEMENT	NY 505888	Regional	0.71
Undesignated		HARDEN HILL	STOCK ENCLOSURE	NY 531887	Local	0.04
Undesignated		YELLOW SIKE	STOCK ENCLOSURE	NY 531883	Local	0.02
Undesignated		DEEP SIKE	STOCK ENCLOSURE	NY 534882	Local	0.03
Undesignated		HEN SIKE	STOCK ENCLOSURE	NY 536882	Local	0.02
Undesignated		STELL KNOWE	STOCK ENCLOSURE	NY 519878	Local	0.05
Undesignated		BELLSHIELS	ROAD (line of a road marked on the 1st Edition OS map)	NY 496884	Local	0.84
Undesignated		WHITHAUGH BURN	STOCK ENCLOSURE	NY 498880	Local	0.82
Undesignated		POTTERLAMPORT'	TOWER HOUSE (POSSIBLE)	NY 510880	Uncategorised	
Undesignated		PEACHHILL SYKE	STOCK ENCLOSURE	NY 512887	Local	0.03
Undesignated		OLD ROADS IN LIDESDALE	ROAD	NY 550900	Local	
Undesignated		GOOSE RIG	STANDING STONE (SITE OF)	NY 546889	Regional	0.02
Undesignated		POUTERLAMPERT SIKE	FARMSTEAD	NY 513883	Regional	0.02
Undesignated		WILL'S WELL	WELL	NY 508882	Regional	0.01
Undesignated		SWARF MOSS	STOCK ENCLOSURE	NY 515877	Local	0.02
Undesignated		HILLHOUSE TOWER	TOWER HOUSE (site of)	NY 505870	Uncategorised	1
Undesignated		YETHOUSE HILL TO SCOTCH CRAIG	ROAD (line of a road marked on the 1st Edition OS map)	NY 506870	Local	1.06
Undesignated		THWARTER GILL HEAD	STOCK ENCLOSURE	NY 516856	Local	0.38
Undesignated		MUCKLE THWARTERGILL	STOCK ENCLOSURE	NY 516855	Local	0.02
Undesignated		MUCKLE THWARTERGILL	CAIRNFIELD, FIELD SYSTEM	NY 517850	Local	0.1
Undesignated		SCOTCH KERSHOPE	ENCLOSURES	NY 523850	Local	0.36
Undesignated		KERSEHOPE BURN	CAIRNFIELD, FIELD SYSTEM	NY 509847	Regional	6.56
Undesignated		QUEEN'S SIKE	STOCK ENCLOSURE	NY 558893	Local	0.03

Undesignated		HARDEN BURN	STOCK ENCLOSURE	NY 521900	Local	0.02
Undesignated		CLINTWOOD CASTLE	ENCLOSURE, HOARD (POSSIBLE), SOCKETED AXEHEAD (BRONZE), SWORD (BRONZE)	NY 530900	Uncategorised	
Undesignated		SHIEL BURN	SETTLEMENT (located to 100m square)	NY 541901	Uncategorised	
Undesignated		KERSHOPE BURN	STOCK ENCLOSURE	NY 564889	Local	0.02
Undesignated		HAVERING SIKE	STOCK ENCLOSURE	NY 558879	Local	0.02
Undesignated		HARDEN BURN	STOCK ENCLOSURE	NY 527899	Local	0.06
Undesignated		BELLSHIEL	FARMSTEAD	NY 509891	Regional	0.37
Undesignated		HEN KNOWE	STOCK ENCLOSURE	NY 538883	Local	0.03
Undesignated		MUCKLE HIND BECK	ENCLOSURE, SHEEPFOLD, STRUCTURE, WALL	NY 535876	Local	0.03
Undesignated		LITTLE HIND BECKS	ENCLOSURE, SHEEPFOLD, STRUCTURE, WALL	NY 532873	Local	0.02
Undesignated		KERSHOPE BURN	ENCLOSURE, SHEEPFOLD, STRUCTURE, WALL	NY 548866	Regional	0.77
Undesignated		ROTTEN SIKE	STOCK ENCLOSURE	NY 523878	Local	0.04
Undesignated		HIND BURN	STOCK ENCLOSURE	NY 525873	Local	0.2
Undesignated		PRIESTHILL BURN	STOCK ENCLOSURE	NY 518887	Local	0.1
Undesignated		TWEEDENHEAD TO SCOTCH KERSHOPE	ROAD (line of a road marked on the 1st Edition OS map)	NY 523872	Local	1.3
Undesignated		BESSIE'S BOG	STOCK ENCLOSURE	NY 512866	Local	0.01
Undesignated		NEWSTELL SIKE	STOCK ENCLOSURE	NY 513861	Local	0.05
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 524852	Uncategorised	3.66
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 498876	Uncategorised	2.04
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 514900	Uncategorised	8.3
Undesignated		HLA Relict Area	18th-19th Century Plantation Enclosure	NY 500876	Uncategorised	5.89
Undesignated		HLA Relict Area	18th Century-Present Opencast/Mining/Quarry Site	NY 495879	Uncategorised	3.17
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 518894	Uncategorised	4.11
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 520906	Uncategorised	6.77
Undesignated		HLA Relict Area	Medieval/Post-medieval Settlement and Agriculture	NY 534908	Uncategorised	45.93
Undesignated		HLA Relict Area	Medieval Assart	NY 502860	Uncategorised	0.25
Undesignated		HLA Relict Area	Medieval Assart	NY 512896	Uncategorised	34.55

Undesignated		HLA Relict Area	Post-medieval Turf Stripping	NY 499846	National	299.53