



Yorkshire Forest District

Allerthorpe Forest Plan

FDP 58

2020



Forest Enterprise - Property

Forest District:	Yorkshire
Woodland or property name:	Allerthorpe
Nearest town, village or locality:	Allerthorpe
OS Grid reference:	SE 758 476
Local Authority district/unitary Authority:	East Riding of Yorkshire

Areas for approval

	Conifer	Broadleaf	Open
Lower Impact Silvicultural Systems regeneration felling	11.0		
Restocking	11.0		

1. I apply for Forest Plan approval for the property described above and in the enclosed Forest Plan.
2. I confirm that the pre consultation, 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 consultees, this is highlighted in the Consultation Record.
3. I confirm that the proposals contained in this plan comply with the UK Forestry Standard.
4. I undertake to obtain any permission necessary for the implementation of the approved Plan.

Signed

Signed

Forest Management Director

Area Field Manager

District

Area

Date

Date of Approval..... Date approval ends.....

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Allerthorpe

148.3 Hectares

Period of Plan: 2020 - 2030

1. Background

Allerthorpe Forest is part of a network of forests managed by Forestry England (FE), Yorkshire Forest District, located within the York Beat. It is situated approximately 5 km west of Pocklington.

The forest is a freehold property where the majority of conifer was planted in the 1960's and was formerly rough grazing.

2. Describing the Site

2.1 Geology and Soils (FP Map 01)

Underlying geology is sedimentary bedrock of primarily mudstone formed in the Triassic period and is overlain with superficial glacial deposits of sand silt and gravels of the Quaternary period.

The soils at Allerthorpe are predominantly podzolic ground-water gleys. Based on Forest Research Ecological Site Classification, soils are very moist soil moisture regime (SMR), though this is seasonal as they tend to dry out in summer months, and poor to medium soil nutrient regime (SNR). The difference between SMR and SNR impacts on the range of 'suitable' species that can be considered for restocking/regenerating.

2.2 Tree Species (FP Map - 02)

Over the past 13 years, species composition has changed as shown in the table below with a reduction in the proportion of pine and felled areas. Broadleaf species and open ground cover a larger area and the addition of fir and spruce has increased the range of conifer species across the forest.

Species	2020	2020	2009
	Ha	%	%
Pine	96.78	65	75
Fir	8.49	7	0
Spruce	3.14	2	0
Larch	0.56	<1	<1
Broadleaf	23.95	16	3
Felled	0	0	18
Other i.e. open, SSSI, agriculture, car parks.	15.38	10	4

2.3 Wind Damage

The Windthrow Hazard Classification ranges from 2 to 3 with almost 90% of the forest in the lower hazard 2 where thinning regimes are relatively unconstrained. The remaining area north of The Street public highway is intermediate hazard class 3 where thinning options can be more limiting and particular care needs to be taken over the timing, pattern and intensity of thinning to avoid precipitating the onset of serious windthrow. Small pockets of windblow associated with locally wet areas in the main block have been cleared over the plan period. A recent development has seen the introduction of a strip shelterwood lower impact silvicultural system (LISS) as an alternative to high forest clear fell system.

2.4 Landscape (Photographic montage)

The forest sits within the flat open farmland character type and Newton upon Derwent, Wilberfoss, Allerthorpe and Hayton Farmland local character area¹. The forest is referenced in the document with the following descriptions;

“Allerthorpe Common is an extensive area of coniferous plantation on former heathland and is the main woodland in the LCA. A small area of heathland still survives, composed of heather, cross-leaved heath, cotton grass and purple moor grass which also supports a number of reptiles and invertebrates.”

Positive landscape features include;

“Allerthorpe Common is an important feature of considerable size providing an element of diversity to the area. Trees and woodland, where present, are important landscape features contributing to ecological value as well as visual amenity.”

Over the last ten years the forest has increased its overall species and structural diversity, mainly through naturally regenerating conifer and broadleaf species across previously felled sites.

Recent strip felling as described in 2.3 is providing further structural diversity by gradually reducing the proportion of 1960's pine crops with more contemporary mixed conifer crops.

In addition, underplanting of pine stands with alternative conifer species is also adding to the forest diversity.

2.5 People and Community (FP Map - 04)

The majority of the forest is freehold which is dedicated as Open Access land through the Countryside Rights of Way Act (2000), with the exception of the agricultural field and Allerthorpe Common SSSI. In addition, the forest supports a network of forest roads, rides a public bridleway along the southern boundary and two informal car parks. The forest is a very popular destination throughout the year for walkers and dog walkers.

2.6 Natural Heritage (FP Map - 04)

Allerthorpe Forest hosts a range of flora, fauna and bio-diverse habitats. Allerthorpe Common Site of Special Scientific Interest (SSSI), cited for lowland heathland and important for ground nesting birds such as nightjar, tree pipit and whinchat details for which may be found at; <http://www.sssi.naturalengland.org.uk>. Unit 81 of the SSSI sits within the land owned and managed by Forestry England.

A number of clearings, felled as part of an earlier habitat restoration programme have subsequently regenerated with a mixture of Scots pine, birch, willow and oak. This has created a mosaic of

developing mixed woodland and open woodland habitat with varying elements of open ground supporting remnant lowland heathland ground flora. The mosaic of habitats developing across these sites provides opportunities to manage mixed woodland with variable proportions of open space. Developing and maintaining a mosaic of mixed woodland and wooded heath across this part of the forest will not be achieved over a single rotation.

The forest supports a wide range of national and regionally important bird species and lepidoptera across different habitat types (see Appendix 1):

Woodland, woodland edge/ride/glade - Willow warbler, Garden warbler, Spotted flycatcher, Starling, Willow tit, Marsh tit, Bullfinch, Yellowhammer, Lesser redpoll, Tree sparrow
Developed shrub layer - Woodcock, Dunnock, Linnet

A network of forest drains and ditches criss-cross the main block known as Allerthorpe Woods. Where these are no longer maintained, localised wet areas have developed and provide suitable habitat for birch and willow to colonise. These sites typically support a more diverse woodland structure where native broadleaf tree species, shrubs and ground flora can naturally regenerate, providing ecologically diverse habitat corridors.

2.7 Cultural Heritage (FP Map 04)

There are no scheduled monuments within the forest; however records indicate a number of Stone Age crop marks within the SSSI and the adjacent pine crop to the west.

3. Describing the Project

3.1 Project Brief

- manage natural and cultural heritage sites in accordance with their requirements as per agreed management plans and district policy,
- investigate the use of whole tree harvesting systems to silviculturally manage and improve habitat corridors and links with designated heathland sites where remnant flora of interest remains,
- consider the selection of alternative main tree species that will contribute toward a greater range of species diversity to maintain or increase timber productivity and increase resilience to plant health and biosecurity threats,
- increase the diversity of the forest age structure and landscape impact by use of appropriate silvicultural systems.

3.2 Objectives

People

- Maintain and improve the woodlands contribution to the landscape character within the East Riding of Yorkshire - Newton upon Derwent, Wilberfoss, Allerthorpe and Hayton Farmland character type. To be measured by fixed-point photography.
- Work with and provide volunteering opportunities that derive benefits to both the participants and the woodland. To be measured through FC systems.

Nature

- Improve the resilience of the natural environment to pests, diseases and wildfires and realise the potential of these woods for nature and wildlife, to be measured by Natural England and FC systems.
- Improve and maintain the cultural and heritage value of these woods, to be measured by FC systems.

Economy

- Maintain the land within our stewardship under UKWAS certification, to be measured by independent surveillance audits.
- Improve the economic resilience of these woods from a more diverse range of site appropriate conifer and broadleaf species, to be measured by FC systems.

3.3 Opportunities & Constraints

- Whole tree harvesting offers potential to commercially manage naturally regenerated mixed woodland sites toward a mosaic of habitats.

3.4 Implementation

3.4.1 Conservation

Protect and, where appropriate, enhance all known sites of archaeological and ecological importance:

Archaeological sites

All sites, regardless of their designation, will receive the same level of care during the planning and execution of forest operations. The operational planning system will ensure they are recognised and the proper measures for their protection are in place before work begins. This planning system also ensures that, where possible, opportunities to enhance the condition of archaeological interest are taken during routine forest work.

Ecological sites

All work sites are surveyed prior to any operations being carried out, both to audit the accuracy of information already held on record and to identify opportunities to further improve the ecological value of the woodlands. For Allerthorpe this will include:

- Increase and improve the deadwood resource as set out in - 'Deadwood - Policy, Procedures, Guidance (PPG) 51 (2018)'. Areas of high ecological value across which deadwood resources could be encouraged include; riparian zones and areas of broadleaf woodland.
- Increase the diversity of tree species and age structure that will maintain and improve favourable habitats for target species and identified habitats. This is particularly beneficial for the range of habitats and species recorded at Allerthorpe from which a selection has already been mentioned at 2.6 - Natural Heritage.

Minimum Intervention - Candidate Natural Reserve

These are sites which have the potential to deliver greatest biodiversity benefit but without the formal designation as defined by UKWAS. There are 1.08 ha of mixed broadleaf woodland within Unit 1 of Allerthorpe Common SSSI.

Invasive species

There is a small patch of *Rhododendron ponticum* in Allerthorpe Wood which will be controlled in 2020.

3.4.2 Timber Harvesting

We will continue to sustainably harvest timber from Lower Impact Silvicultural Systems (LISS) and thinning's. Where appropriate we will develop broadleaf stands to increase their contribution to timber production. These operations will be planned and controlled to ensure due regard for all other objectives of management at Allerthorpe.

3.4.3 Landscape

Allerthorpe Forest is not located within a protected landscape but is considered a positive landscape feature as set out in section 2.4.

Over time LISS with associated smaller-scale felling will contribute toward a more varied and intimate internal forest landscape, where simple and complex stand structures create a more diverse visitor experience within the forest.

On a scale of low/medium/high, within a lowland flat landscape where views are limited to edges and internal landscapes, sensitivity is considered to be low.

3.5 Plan (FP Map 05)

The design concept map shows the key factors we need to address. These are taken forward and used to form the basis of a practical plan set out in the fell and restock maps.

3.6 Areas (FP Maps 06 and 07)

3.6.1 Breakdown of felling areas within the period of the plan.

A map showing the location of felling sites can be found in the Forest Plan folder.

Felling	Area - hectares	% of total area (excl. SSSI)	Projected volume (m ³)
LISS*	11.0	7	3,850

* Allerthorpe will be managed using LISS through the Strip Shelterwood silvicultural system. During the plan period, it is proposed areas of LISS where crops are over 25 years old will receive a silvicultural intervention (thinning/regeneration felling). As a result of this intervention, the above area of woodland cover will be strip-felled and regenerated through a combination of restocking and natural regeneration.

3.6.2 Breakdown of constituent areas.

A Future Habitat and Species map showing the location and detail of the constituent areas can be found in the Forest Plan folder.

Habitat type - (based on principal species established)	Area - hectares			% age of total area		
	2020	2030	2070	2020	2030	2070
Conifer	108.97	106.77	97.24	74	72	66
Broadleaf	23.95	25.05	29.92	16	17	20
Open inc. agriculture, successional wooded heath, riparian corridors, road/ride side corridors etc	10.38	11.48	16.14	7	8	11
Lowland heathland SSSI	5.00	5.00	5.00	3	3	3

3.7 Methods / Forest Operations

3.7.1 Planning

Before any major forest operations are undertaken an "Operational Site Assessment" is completed. This document details the proposed work and outlines all known environmental, social and operational considerations. The "Operational Site Assessment" then becomes an important reference document during the planning phase, at the pre commencement meeting before scheduled works begin and for supervisory visits during the operation. The "Operational Site Assessment" is kept along with other documents relating to the operation in the main office.

For routine maintenance operations (e.g. fencing, ride mowing, survey work etc.) the Yorkshire District policy on timing of operations to minimise wildlife disturbance will be followed.

Regarding wildfire, we will follow guidance as set out in 'FC Practice Guide - Building wildfire resilience into forest management planning'. This will be applied proportionately dependant on a particular forest or woodland.

3.7.2 Standards

All operations within the forest will be carried out in accordance with the certification standard for the U.K. Woodland Assurance Standard and the U.K Forestry Standard 2017, version 4.

3.7.3 Harvesting

See 3.4.2. Forestry Commission staff will monitor work through regular site visits to ensure all guidelines and contract conditions are adhered to.

All plans are required to consider LISS in windfirm conifer plantations as opposed to traditional clearfell systems. This decision is based upon the methodology provided in FC Information Note 40 - 'Transforming Even-aged Conifer Stands to Continuous Cover Management'. Where existing coupes

are not identified for LISS management, we may consider managing these on an extended rotation basis to be thinned and monitored for future consideration for conversion to LISS.

Using the FC Forest Research Agency, Ecological Site Classification system (ESC), a range of conifer species are considered 'optimum' to 'unsuitable' for LISS where timber production is considered as an objective.

See Appendix 2 - LISS Justification.

3.7.4 Haulage

As in our other woodland blocks we will continue discussions with the relevant Highways Authority to agree haulage routes and discuss annual tonnages.

All timber traffic will be managed in line with the Road Haulage of Round Timber Code of Practice, Fourth Edition (2012), which aims to improve the safety and environmental standards of the timber haulage industry.

3.7.5 Restocking

Conifer

The areas of strip felling carried out as part of management by LISS will be established through a combination of natural regeneration and restocking using alternative productive conifer species to diversify age structure and species. The FC Forest Research Agency, Ecological Site Classification system (ESC) will aid species choice and selection. A range of timber producing conifer species as set out in Appendix 2 and Appendix 3 'Species by soil type' will help inform restocking options.

In addition to replanting, areas of LISS will be managed to encourage natural regeneration of conifer and broadleaf species.

Reference to Predominantly Mixed Conifer on the Future Habitat & Species Map (FP Map 07) will be used to describe those areas where a range of species will be planted and/or regenerated, where conifer species will comprise at least 80% of the component mix. As indicated at 3.7.1, the Operational Site Assessment will provide site-specific data on soils and other site factors that will help inform the correct choice of species on a site-by-site basis.

All sites will achieve at least conifer 2500 stems per hectare through planting, natural regeneration or a combination of both.

Broadleaf

Reference to Predominantly Mixed Broadleaf on the Future Habitat & Species Map will be used to describe those areas where a range of species will be regenerated, where broadleaf species will comprise at least 60% of the woodland component mix. Increasing proportions of broadleaf species will be allowed to colonise sites adjacent old forest drains and ditches creating a network of habitat corridors across the forest. These corridors are of a scale that does not show up on FP Map 07.

All sites will achieve at least 1100 broadleaf stems per hectare through natural regeneration.

Mixed woodland habitat

Across previously felled sites which have subsequently regenerated with varying proportions of Scots pine and native broadleaf species, it is proposed to manage this mosaic of successional habitat to maintain the mixed species composition. This will be achieved through a combination of routine selective thinning and small-scale felling operations when trees have reached a harvestable size. At the time of first thinning, higher intensity thinning will be applied adjacent to areas of semi-permanent open space where heathland ground flora is established. This will create areas of

less-dense, wider spaced trees to maintain an ecotone of wooded heath, combining elements of heathland flora with Scots pine and native broadleaf tree cover. In addition, open areas will also be created along forest roads, rides and popular footpaths to further develop a network of successional habitat throughout the forest.

Wooded heath (Successional Open)

Across previously felled sites it is proposed to develop a mosaic of successional habitat incorporating natural succession of heathland communities, Scots pine and native broadleaf species. This will create areas of wooded heath, combining elements of heathland flora with up to 25% tree cover comprised of native broadleaf species and Scots pine. Habitat networks will be maintained and established across parts of the forest that will enhance and maximise the movement of flora and fauna by increasing the permeability both within and outwith the forest area. The development of these sites will be beneficial for a range of heathland and woodland species.

3.7.6

Wildlife Management

The successful establishment of future restocking sites through planting and/or natural regeneration will require effective control of crop damaging mammals. Although Roe deer are present within the forest and surrounding farmland, good levels of natural regeneration indicate browsing pressure is low. Damage levels will continue to be monitored and will be managed in line with the Yorkshire Forest District Deer Management Strategy 2019.

4. Monitoring

See Appendix 4 - Monitoring Plan

4.1 Forest Plan

All forest plans are formally reviewed as part of a "5-year mid-term review" and the plan's aims and objectives and its success at achieving those aims and objectives. This plan will be formally reviewed in 2025 with the opportunity to share information where requested. This time period can be shortened if circumstances change significantly or if parts of the plan prove detrimental to the overall aims and objectives.

Where an amendment to the Forest Plan is required, the Forestry Commission Practice Delivery Note 01 - Tolerance Table will be applied as set out in Appendix 5.

4.2 UKWAS Compliance Table

	Forest Plan Area (ha)	Forest Plan Percentage	Forest District Area (ha)	Forest District Percentage
Total Area	148.3	100	20,971	100
Total Wooded area	140.9	95	16,484	78
Natural Reserves - Plantation (1%)	Nil	Nil	170	1
Natural Reserves - Semi-natural (5%)	Nil	Nil	85	6
Long-term Retentions and Low Impact Silvicultural Systems (>1%)	Nil	Nil	7,049	42
Area of conservation value(15%)including designations; SSSI's, PAWS, ASNW, NR, LTR, LISS	148.3	98	8,666	41

5. Determination of Impact Significance and Mitigation

5.1 Native Woodland

Threats to our native woodlands can be immediate and absolute (e.g. loss to infrastructure or development) or slower and subtler (e.g. shading from conifer species or invasive species such as Rhododendron). There are also more widespread environmental changes, such as diffuse pollution and climate change, which may threaten in the long term. (www.forestry.gov.uk/keepersoftime) Major threats to native woodland are:

- Climate change and fragmentation
- Excessive browsing and grazing by deer & livestock
- Inadequate or inappropriate management
- Invasive and problem species
- Diffuse pollution
- Loss

Through this plan, we will continue to apply local and national policy and best practice guidance for the management and development of our existing and new native woodlands.

5.2 Flora

Heathland is a UKBAP Priority Habitat

Within woods, concentrate on open space habitat expansion and management, developing heathland, neutral grassland and acid mires.

(G. Peterken - Native Woodland Development in the North York Moors and Howardian Hills)

This plan will continue the management and development of heathland where this will improve habitat networks across Allerthorpe forest. Maintaining a mixed resource of temporary and permanent open space will provide potential habitat for Nightjar, Tree pipit, Woodcock and other priority flora and fauna species within the forest area.

5.3 Other Objectives

Concentrate on developing habitat-rich riparian corridors with marshes, meadows, woodlands, trees in farmlands. These would pass through both woodland and farmland.

(G. Peterken - Native Woodland Development in the North York Moors and Howardian Hills)

We will continue to apply local and national policy and best practice guidance to the management of riparian corridors across Allerthorpe. This will improve and enhance the habitat network within the woodlands and benefit a range of species. Continuing development of both species and structural diversity will benefit habitats for priority woodland bird species throughout the woodland (Appendix 2 - Priority woodland bird species).

Appendix 2 - Priority woodland bird and lepidoptera species

Bird Species ¹	Forest location	Habitat enhancement
Woodcock Dunnock Linnet	Developed shrub layer	Continue selective thinning and strip-shelterwood felling as part of LISS management, this will allow the development of shrub layer structure and increased structural and species diversity. Expand diverse riparian woodland habitat, create and maintain successional woodland (birch and oak)/scrub habitat and standing deadwood.
Willow warbler Garden warbler Spotted flycatcher Starling Willow tit Marsh tit Bullfinch Yellowhammer Lesser redpoll Tree sparrow	Woodland edge, ride, glade	Continue selective thinning and strip-shelterwood felling as part of LISS management, this will allow the development of shrub layer structure and increased structural and species diversity. Expand diverse riparian woodland habitat, create and maintain successional woodland (birch and oak)/scrub habitat and standing deadwood.

Lepidoptera ²	Forest location	Habitat enhancement
<i>Amphisbatis incongruella</i> <i>Phiaris schulziana</i> <i>Ancylis uncella</i> <i>Ancylis unguicella</i> <i>Diacrisia sannio</i>	Heathland/wooded heath with heather and bilberry	<p>Continue sequential strip-felling, thinning and vegetation management that will help to maintain a mosaic of woodland habitats, open structure woodland/wooded heath, wide rides and forest road verges.</p> <p>Identify opportunities to increase connectivity between these habitats.</p>
<i>Apotomis semifasciana</i> <i>Brachylomia viminalis</i> <i>Clostera pigra</i> <i>Hydriomena ruberata</i> <i>Synanthedon formicaeformis</i>	Wet woodland, predominantly <i>salix</i> species	
<i>Lobesia reliquana</i> <i>Parornix loganella</i> <i>Cyclophora albipunctata</i> <i>Enargia paleacea</i> <i>Synanthedon culiciformis</i>	Birch, oak woodland	
<i>Cydia coniferana</i> <i>Pseudococcyx turionella</i>	Scots pine woodland	
<i>Trifurcula immundella</i> <i>Anarsia spartiella</i> <i>Phyllonorycter scopariella</i>	Heathland with broom, gorse	

Lepidoptera ²	Forest location	Habitat enhancement
<p><i>Taleporia tubulosa</i> <i>Infurcitinea argentimaculella</i> <i>Deltote uncula</i> <i>Dypterygia scabriuscula</i> <i>Eriogaster lanestris</i> <i>Idaea emarginata</i> <i>Idaea sylvestraria</i> <i>Photedes fluxa</i> <i>Phytometra viridaria</i> <i>Psyche casta</i> <i>Scythris inspersella</i> <i>Grapholita lunulana</i> <i>Agrotis vestigialis</i> <i>Cybosia mesomella</i></p>	<p>Host plants</p> <p>Lichens & detritus Lichens Grasses, sedges, rushes Dock, sorrel, knotgrass Hawthorn, blackthorn mainly Bedstraws, field bindweed Not known Wood small reed Common & heath milkwort Leaf litter & detritus Willowherbs, esp rosebay Vetches Herbaceous plants Algae & lichens on woody plants</p>	<p>Continue sequential strip-felling, thinning and vegetation management that will help to maintain a mosaic of woodland habitats, open structure woodland/wooded heath, wide rides and forest road verges.</p> <p>Identify opportunities to increase connectivity between these habitats.</p>

¹ Source - BTO Bird Atlas and Breeding Bird Survey data for NZ80 grid square.

The Breeding Bird Survey is run by the British Trust for Ornithology (BTO) and is jointly funded by the BTO, the Joint Nature Conservation Committee (JNCC) (on behalf of the statutory nature conservation bodies: Department of Agriculture, Environment and Rural Affairs - Northern Ireland, Natural England, Natural Resources Wales and Scottish Natural Heritage), and the Royal Society for the Protection of Birds (RSPB).

² Source - Butterfly Conservation Group
(micro moths)

Appendix 3 - LISS justification

Site Appraisal

Site Factor	Suitability Score	Comment
Wind Hazard Classification: Majority of the forest is WHC 2	1	ESC indicates rooting depth of 80cm for soil type.
Soil fertility: Podzolic ground-water gley	1	Competing ground vegetation is generally that associated with poor sites although localised areas of bramble indicate increased fertility.
Current species suitability: CP SP, Silver birch	(very moist SMR/poor SNR) 1 - Very suitable 2 - Suitable	Scots pine and Silver birch are well suited to the site and already regenerates within current stand structures where light levels allow and across adjacent clear fell sites.

With a combined score ranging between 3 and 4, initial analysis indicates the whole of Allerthorpe achieve a Good site ranking for transformation to LISS.

Stand Appraisal

Stand form - Overall stand form for Scots pine and Corsican pine is good with low levels of Dothistroma infection.

Thinning history - Regular thinning has been carried out across all 1st rotation stands resulting in good crown development. Currently there is good evidence that pine and birch are capable of developing through natural regeneration across sites.

Access - This is not a limiting factor as good infrastructure exists across the majority of the productive coniferous areas.

On the basis of the above information, we will consider LISS across pine stands with the aim of increasing species diversity through enrichment planting using a wide-range of conifer species identified as Very Suitable/Suitable on the site suitability report overleaf, aiming for a simple stand structure.

We will adopt a Strip Shelterwood system, where strips will aim to be between 20 to 25 m wide.

Some areas of high forest/clearfell coupes will be managed on an extended rotation basis and will be monitored for development of natural regeneration. Where appropriate these will be considered for developing toward LISS management as set out above.

The Forest Research ESC table below supports the range of target species considered for natural regeneration and those identified as very suitable (dark green) and suitable (light green) where enrichment planting will increase species diversity. For Sneaton, enrichment planting could consider the introduction of Macedonian pine, Norway and Sitka spruce, Western and Japanese red cedar, European silver and Grand fir, Hybrid larch, Coast redwood, Lawson's and Leyland cypress, Aspen, Red, Italian and Common alder, Hornbeam.

Future wildlife management issues may arise where deer browsing could impact across strips as more palatable species are introduced. Temporary deer fencing, site monitoring and adherence to the District Deer Management strategy will help inform future management.

Adjustments	Eastings(m)	Northings(m)	Site Grid Reference	Climate Scenario	Site Class	Filter	Brash	Drainage	Fertiliser
Site defaults	475700	447600	SE757476	Medium-High 2080 (A1b/3q0) AWC method	Very warm - Sheltered - Slightly dry	All species	Brash present aged less than 18 months	No drainage installed	No fertiliser



















Site Description

The site has a very warm, sheltered and slightly dry climate. The soils are very moist moisture status and poor nutrient status. The analysis assumes that site management (e.g. LISS), the use of deep rooting species and/or soil properties will help mitigate climatic moisture deficits. Brash will be redistributed evenly across the site to provide nutrients and avoid uneven growth. The site DAMS score has been reduced due to either a) an intention to underplant species with the benefit of shelter from established trees or b) local observations of additional shelter/less exposure.

Modifications	Accumulated Temperature(AT) ?	Continentality(CT) ?	Exposure(DAMS) ?	Moisture Deficit (MD) ?	Soil Moisture Regime (SMR) ?	Soil Nutrient Regime(SNR) ?
None	2757	8	12	253	3(Very moist)	2(Poor)
Brash						0.5
DAMS Modifier			-2			
Final	2757	8	10	253	3(Very moist)	2.5(Medium)











Suitability key  Very Suitable (0.75-1.00)  Suitable (0.50-0.74)  Marginal (0.30-0.49)
 Unsuitable (0.0-0.29)

[species name] = species with pest/disease constraint

Common name	Species Code	Suitability		YC	Lim	AT	CT	DAMS	MD	SMR	SNR	Suit.	AT
		Ecological	Timber										
Corsican pine	[CP]	0.75	0.75	15	SMR	1	1	1	0.87	0.75	0.96		
Lodgepole pine	[LP]	0.72	0.62	9	AT5	0.72	1	1	0.87	1	0.96		
Macedonian pine	MCP	0.87	0.84	12	AT5	0.87	1	1	0.99	1	0.96		
Maritime pine	MAP	0.35	0.35	5	SMR	1	0.86	1	0.8	0.35	0.96		
Monterey/Radiata pine	RAP	0.58	0.55	11	SMR	0.95	0.95	1	0.88	0.58	0.96		
Scots pine	SP	0.63	0.63	9	SMR	1	1	1	0.68	0.63	0.96		
Weymouth pine	WEP	0	0	0	SMR	0.66	1	1	0.51	0	0.87		
Norway spruce	NS	0.54	0.5	12	AT5	0.54	1	1	0.93	0.91	0.92		
Oriental spruce	ORS	0.6	0.6	13	SMR	1	1	0.98	1	0.6	0.85		

Common name	Species Code	Suitability		YC	Lim	AT	CT	DAMS	MD	SMR	SNR	Suit.	AT	
		Ecological	Timber											
Serbian spruce	OMS	0.67	0.51	11	AT5	0.67	1	0.94	0.88	0.8	0.75			
Sitka spruce	SS	0.59	0.38	11	MD	0.64	0.96	1	0.59	0.94	0.88			
Sitka spruce (Imp.)	Imp.SS	0.59	0.38	12	MD	0.64	0.96	1	0.59	0.94	0.88			
Douglas fir	DF	0	0	0	SMR	0.85	1	1	0.54	0	0.9			
Hybrid larch	[HL]	0.65	0.65	10	SMR	1	1	1	0.9	0.65	0.99			
Japanese larch	[JL]	0.67	0.67	9	MD	1	0.97	1	0.67	0.71	1			
European larch	[EL]	0.19	0.19	2	SMR	1	1	0.92	0.87	0.19	0.91			
Western red cedar	RC	0.92	0.92	22	SNR	1	0.95	0.97	1	0.99	0.92			
Japanese red cedar	JCR	0.66	0.57	14	MD	0.86	0.99	0.91	0.66	1	0.93			
European silver fir	ESF	0.63	0.45	10	AT5	0.63	0.95	0.99	0.8	0.71	0.87			
Grand fir	GF	0.6	0.56	17	SMR	0.94	0.92	0.94	0.87	0.6	0.92			
Noble Fir	NF	0	0	0	AT5	0	0.87	1	0	0.65	0.94			
Nordmann fir	NMF	0.65	0.45	10	SMR	0.68	1	1	1	0.65	0.82			
Pacific fir	RF	0.53	0.46	12	AT5	0.53	0.85	1	0.87	0.87	1			
Leyland cypress	LEC	0.56	0.33	8	AT5	0.56	0.99	0.99	0.89	0.6	0.89			
Western hemlock	WH	0.36	0.19	5	AT5	0.36	0.82	0.99	0.54	0.63	1			
Giant redwood	WSQ	0	0	0	SMR	0.66	1	0.96	0.64	0	0.76			
Coast redwood	RSQ	0.74	0.74	22	SNR	1	0.87	1	0.97	1	0.74			
Lawson's cypress	LC	0.85	0.85	20	SNR	1	1	0.98	0.89	0.99	0.85			
Downy birch	PBI	0.26	0.18	1	AT5	0.26	0.87	1	0.72	1	0.97			
Silver birch	SBI	0.53	0.3	3	AT5	0.53	1	1	0.56	0.59	0.95			
Big leaf maple	AMA	0.65	0.48	6	SMR	0.74	0.66	0.99	1	0.65	0.86			
Norway maple	NOM	0.61	0.43	5	AT5	0.61	1	1	1	0.7	0.84			

Common name	Species Code	Suitability		YC	Lim	AT	CT	DAMS	MD	SMR	SNR	Suit.	AT	
		Ecological	Timber											
Sycamore	SY	0.65	0.48	6	SMR	0.73	1	1	1	0.65	0.76			
Beech	BE	0.31	0.13	1	SMR	0.44	1	1	0.93	0.31	0.87			
Roble beech	RON	0.43	0.19	4	AT5	0.43	0.89	1	0.57	0.45	0.97			
Ash	[AH]	0.33	0.23	3	SNR	0.69	1	1	0.81	0.76	0.33			
Pedunculate oak	POK	0.83	0.71	6	SNR	0.85	1	1	1	0.97	0.83			
Red oak	ROK	0.61	0.57	5	SMR	0.94	1	0.97	0.68	0.61	0.84			
Sessile oak	SOK	0.47	0.4	3	SMR	0.86	1	1	1	0.47	0.92			
Aspen	ASP	0.56	0.33	4	AT5	0.56	1	1	0.59	1	0.81			
Black poplar	BPO	0.28	0.22	3	SNR	0.77	1	1	0.69	1	0.28			
Rauli beech	RAN	0	0	0	SMR	0.57	1	1	0.6	0	1			
Common alder	CAR	0.73	0.56	7	SNR	0.76	1	0.99	1	1	0.73			
Red alder	RAR	0.58	0.5	6	AT5	0.58	0.86	1	0.93	1	1			
Grey alder	GAR	0.45	0.25	3	AT5	0.45	1	1	0.55	1	1			
Italian alder	IAR	0.65	0.53	6	CT	0.82	0.65	1	0.85	0.93	1			
Shining gum	ENI	0.59	0.42	15	SMR	0.71	1	1	0.89	0.59	1			
Cider gum	EGU	0.46	0.31	9	AT5	0.46	1	1	0.69	0.92	0.96			
Rowan	ROW	0.6	0.42	2	SMR	0.7	1	1	0.68	0.6	0.91			
True service tree	TST	0	0	0	SMR	1	1	0.98	0.32	0	0.97			
Wild service tree	WST	0.26	0.24	2	SMR	0.9	1	1	0.88	0.26	0.92			
Black walnut	JNI	0	0	0	SMR	1	1	1	0.55	0	0.89			
Common walnut	JRE	0.1	0.1	1	SMR	1	0.99	0.92	0.84	0.1	0.33			
Hornbeam	HBM	0.75	0.75	8	SMR	1	1	1	0.93	0.75	0.87			
Small-leaved lime	SLI	0.64	0.49	5	SNR	0.77	1	1	1	0.7	0.64			

Common name	Species Code	Suitability		YC	Lim	AT	CT	DAMS	MD	SMR	SNR	Suit.	AT
		Ecological	Timber										
Wych elm	WEM	0.33	0.28	3	SNR	0.83	1	0.91	0.95	1	0.33		
Wild cherry	WCH	0.7	0.52	6	SMR	0.74	1	1	1	0.7	0.82		
Sweet chestnut	SC	0	0	0	SMR	1	1	1	0.53	0	0.93		
White willow	WWL	0.62	0.5	4	SNR	0.81	1	1	0.72	1	0.62		
Holly	HOL	0.5	0.42	2	SMR	0.86	1	1	1	0.5	0.83		

Appendix 3 - Restock species by soil type

Site type		Species														
Upland sites	Lowland sites	SP	LP	MCP	DF	ESF	GF	WH	WRC	Ley/Law C	Coast R	Giant R	HL	SS	NS	Oriental S
Gley						y		y	y	y				Y	Y	y
Iron pan/podzol		Y	y	y	y	y	y				y	y	y		y	y
BE/intergrade		Y		y	Y	y	y	y	y	y	y	y	y	y	Y	y
Calcareous				y		y			y	y						y
	Gley					y		y	y	y	y	y		Y	Y	y
	Podzol	Y	y	y	y	y	y	y	y	y		y	y		y	y
	BE/intergrade	Y		y	Y	y	y		y	y	y	y		y	Y	y

BOLD CAPITAL (Y)/BOLD INFILL COLOUR	Cat A Major species - currently widely used with no supply problems and should continue to play an important role
Bold, lower case italics (y), pastel infill colour	Cat B Minor species - Species that either currently play a minor role but have demonstrated their suitability being part of a species range to diversify our forests. Climate change may increase or reduce their use
Normal lower case (y), pastel infill colour	Cat C Secondary species - Species with little information on forest performance but possible choice based on Arboreta. Use on small-scale experimental basis for now but may increase if favourable results

[source data](http://www.forestry.gov.uk/fr/treespecies) http://www.forestry.gov.uk/fr/treespecies

Refer to cell comments for specific species notes

No planting where >1m peat depth

Pacific coast associated forest cover - consider in mixtures as part of management by LISS					
DF	GF	WH	Law C	Coast R	ESF

Objective	Method
People	
Maintain and improve the woodlands contribution to the landscape character within the Newton upon Derwent, Wilberfoss, Allerthorpe and Hayton Farmland local character area.	Fixed-point photography
Work with and provide volunteering opportunities that derive benefits to both the participants and the woodland.	Input data and analyse results through RazorsEdge secure database.
Nature	
Improve the resilience of the natural environment to pests, diseases and wildfires and realise the potential of these woods for nature and wildlife.	Update Forester Web GIS; subcompartment database, Conservation module.
	Review sample of Operational Site Assessments.
Expand, improve and maintain the cultural and heritage value of these woods.	Review sample of Operational Site Assessments.
Economy	
Maintain the land within our stewardship under UKWAS certification.	Independent surveillance audit across the organisation.
	Independent surveillance audit across the District.
Improve the economic resilience of these woods from a more diverse range of site appropriate conifer and broadleaf species.	Update Forester Web GIS; subcompartment database, Operational Thinning Layer, Management Coupe Layer.
Site-specific	
Restock & Future Habitat Coupes - Productive mixed conifer sites. Establish at least 2500 conifer stems per ha by planting and natural regeneration by year 5 since date of initial planting (allowing 2 years fallow for <i>hylobius</i>).	On-site stocking density plot surveys.
Restock & Future Habitat Coupes - Mixed broadleaf habitat. Establish at least 1100 broadleaf stems per ha through natural regeneration by year 5 since date of felling.	On-site stocking density plot surveys.
Restock & Future Habitat Coupes - Mixed woodland habitat. Establish at least 1100 broadleaf and/or conifer stems per ha through natural regeneration by year 5 since date of felling.	On-site stocking density plot surveys.

Restock & Future Habitat Coupes - Wooded heath habitat. Establish tree crown cover of at least 20% of the ground as per Action Note 93 - Definition of woodland and trees, with overall composition 60% broadleaf and 40% conifer species.	Fixed point photography and on-site stocking density plot surveys.
LISS coupes - Productive mixed conifer sites. Establish at least 2500 conifer stems per ha by year 5 after final removal overstorey.	On-site stocking density plot surveys.
Wildlife management - Identify problem sites where mammal damage is affecting crop establishment or degrading woodland flora.	On-site stocking density plot surveys. Damage, Impact and Activity Assessments as set out in YFD Deer Management Strategy.
Plan specific	
Forest Plan mid-term review. Review the plan's aims and objectives and the progress of their implementation.	Apply a variety of measures as described in the above table.

Forest Monitoring Plan	
Frequency/Timings	Actions
Year 0 baseline, 5-year review, 10-year review.	Review visual impact of coupes within the landscape and adjust future coupe shape if necessary.
Quarterly	Review activity across the forest and wider District to measure activity and to provide insight into gaps and future opportunities through volunteering.
As recordable changes occur within the forest environment. At time of Year 0 plan renewal, 5-year review, 10-year review.	Measure changes in diversity across species, age structure, conservation siting's/records and broad habitat types; conifer, broadleaf, open. Ensure positive change through increasing diversity occurs over the lifetime of the plan.
Annually	Provide feedback where management is not compliant with recommendations.
Annually	Provide feedback where management is not compliant with recommendations.

Annually	Implement corrective actions as required.
As per audit sample.	Implement corrective actions as required.
As recordable changes occur within the forest environment and End Of Year updates. Year 0 plan renewal, 5-year review, 10-year review.	Review long-term changes in productive capacity through the Production Forecast at the point of plan renewal and across the wider District.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4.	Carry out beating up where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 5 final year assessment.	Carry out enrichment planting where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 5 final year assessment.	Carry out enrichment planting where stocking density falls below prescribed number of trees/ha to achieve full stocking.

Review every 5 years.	Carry out vegetation management where tree canopy cover starts to exceed 25% by area.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4.	Carry out enrichment planting where stocking density falls below prescribed number of trees/ha to achieve full stocking.
Beat-up surveys between years 1 to 4. Year 5 stocking assessment, internal guidance OGB4. Year 9 final assessment.	Target deer control in line with District strategy.
2025	Modify the plans aims and/or objectives where these are no longer compatible with National or District Policy. Significant plan changes will require consultation and formal amendment from the Forestry Commission.

Appendix 5 Agreed Tolerance Table for Yorkshire Forest District, England

	Adjustment to felling coupe boundaries	Swapping of felling coupes	Adjustment to felling operation	Clearance of standing trees associated with wind-blown areas	Timing of restocking - including natural regeneration	Species choice	Tree health
Formal approval by area team required	>25% of the coupe area	Where changes to the felling sequence is likely to result in a significant breach ¹ of the UKFS adjacency rules	Thinning to selective felling or clear felling	Clearance of >1 Ha or 10% of the area (whichever is less) in sensitive ² areas, >5 ha or 25% of the area (whichever is less) in non-sensitive areas	Where this is > 4 planting seasons from the date of felling	From mixed, predominantly Broadleaves to evergreen conifer	Where no SPHN issued and felling required
Written approval only required from area team, ³	Between 10-25% of the coupe area	Where changes to the felling sequence is likely to result in a minor breach ⁴ of the UKFS adjacency rules			Where this is at least 2 but no more than 4 planting seasons from the date of felling	Deciduous conifers to evergreen	Thinning >50% but < 65%
Formal approval by area team <u>not required</u> ⁵	< 10% of the coupe area	Where changes to the felling sequence does not result in a breach of the UKFS adjacency rules.	Clear felling to selective felling or thinning	Clearance of <1 Ha or 10% of the area (whichever is greater) in sensitive areas, <5 ha or 25% of the area (whichever is greater) in non-sensitive areas	Where this is < 2 planting seasons from the date of felling	Any other changes	Where SPHN is issued or thinning up to 50%

¹ Greater than 20% of the coupe boundary

² Definition of sensitive areas is as per the EIA guidance

³ Approval letter retained for compliance inspection purposes

⁴ 20% or less of the coupe boundary

⁵ District team must retain all relevant documentation for compliance inspections

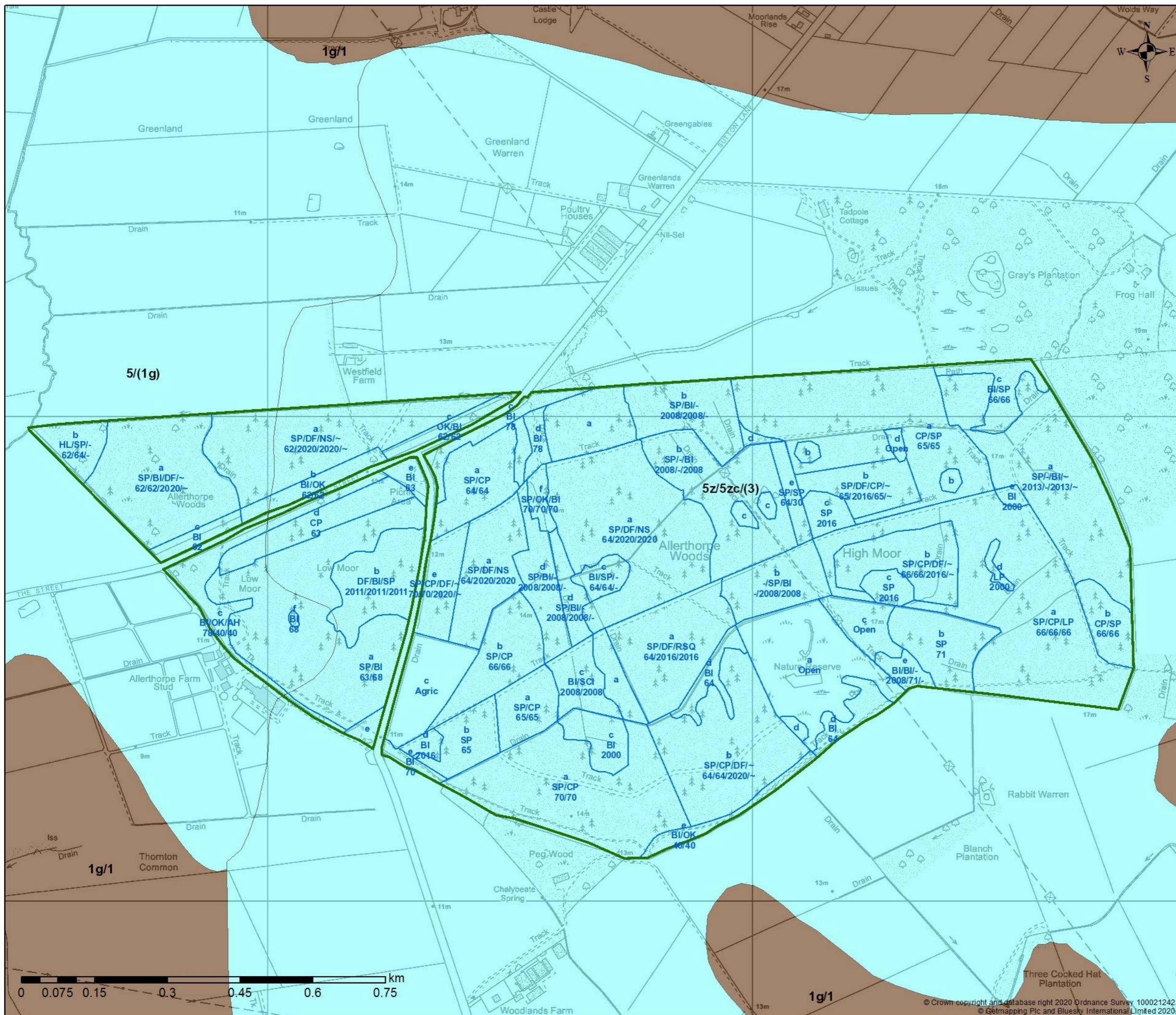
Blocks

□ Blocks

Sub-compartments

□ Sub-compartments

■ Typical ground-water gley



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



Blocks

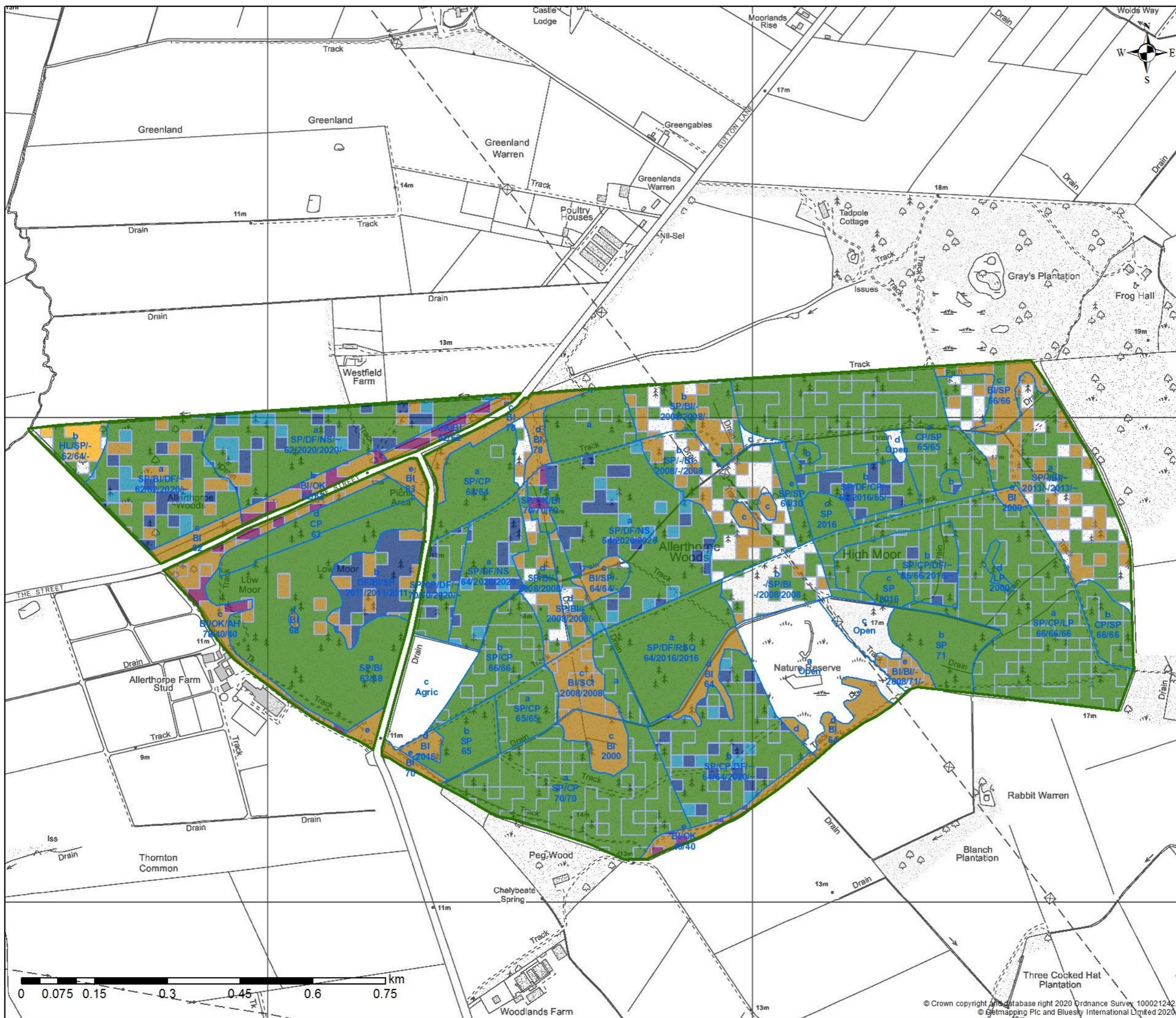
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Sub-compartments

Sub-compartments

Component Visualisation (Species)

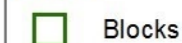
- Larches
- Oaks
- Other Broadleaves
- Other Conifers
- Pines
- Spruces
- Other i.e. permanent open space, successional open space, agriculture



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Blocks



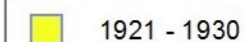
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Sub-compartments



Sub-compartments

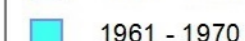
Component Visualisation (Planting Year)



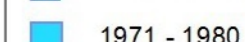
1921 - 1930



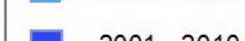
1931 - 1940



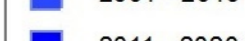
1961 - 1970



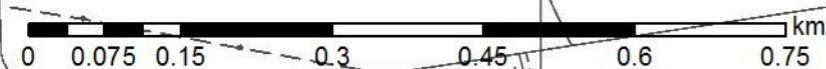
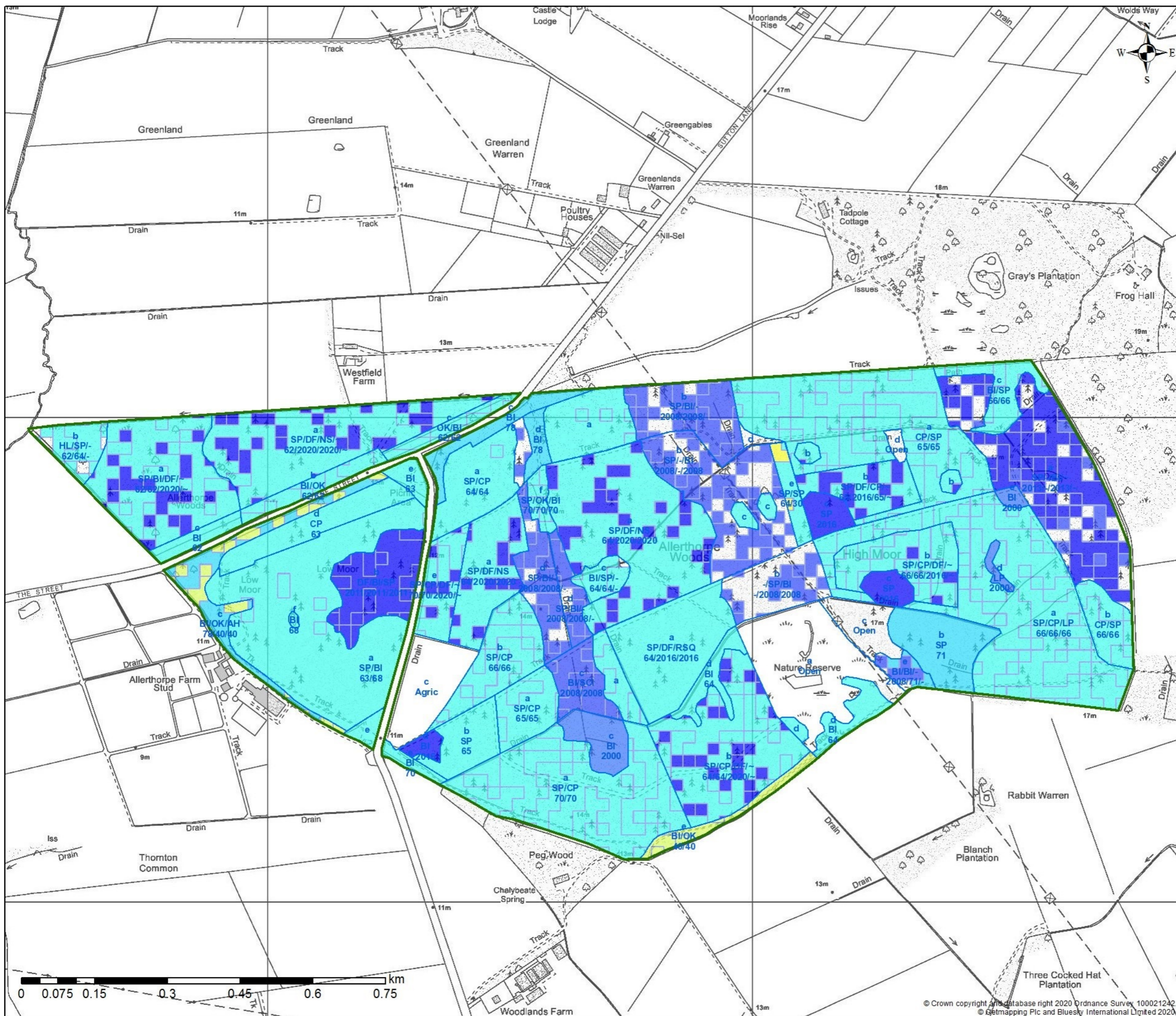
1971 - 1980



2001 - 2010



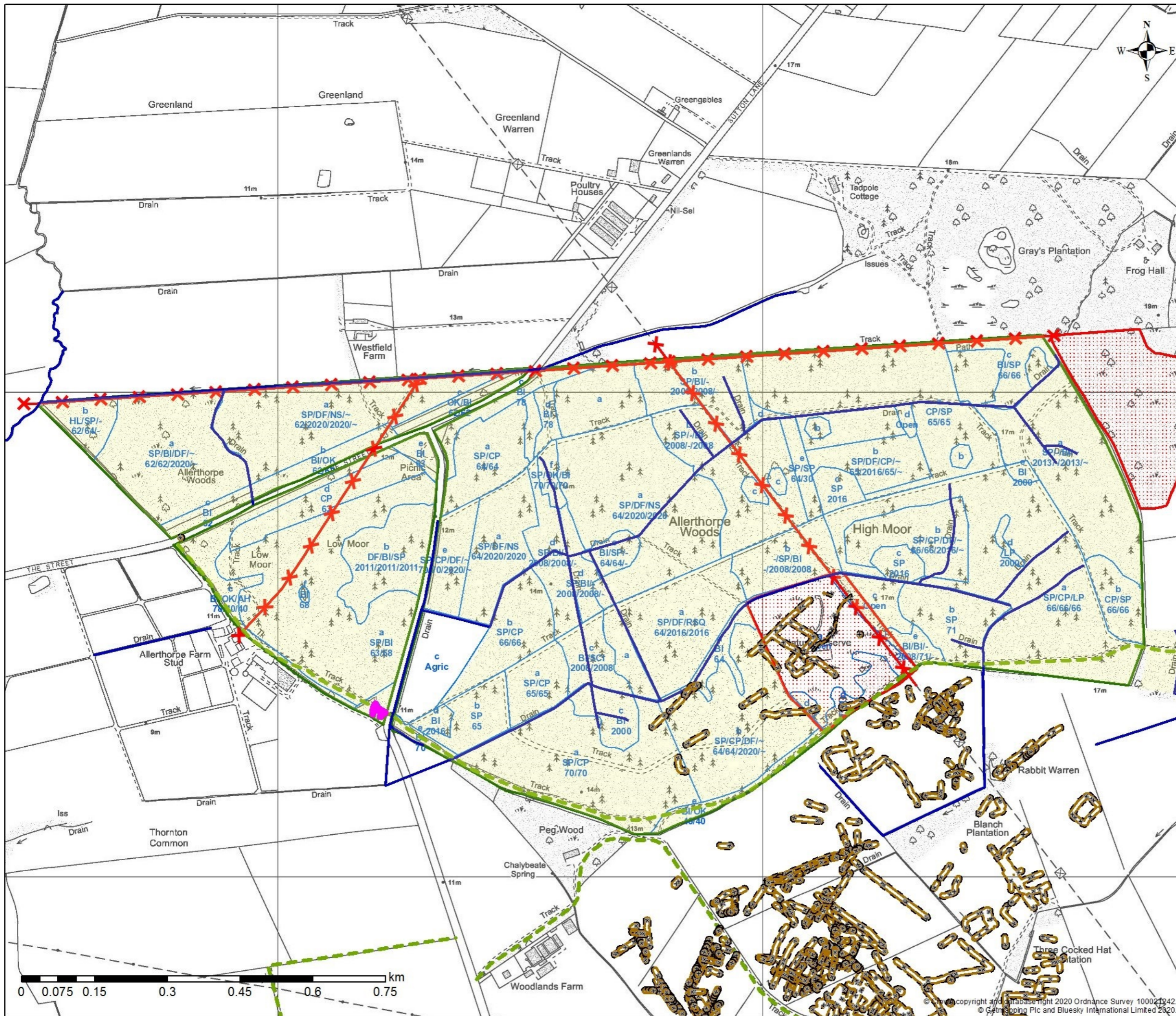
2011 - 2020



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Promoting Sustainable Forest Management



-  Blocks
-  Sub-compartments
-  Sites of Special Scientific Interest
-  Watercourses
-  CRoW 2000 Open Access Land
-  Car Park
-  Public Rights of Way (Eng.)
-  Heritage
-  Overhead powerline



Allerthorpe Forest provides a positive landscape contribution where landscape character is strongly influenced by the surrounding flat and level agricultural fields.

- * Maintaining a broadleaf-dominant corridor along the council road will provide a visual contrast to the conifer forest when viewed along this route.
- * Lower impact silvicultural system management will contribute toward the development of a more diverse forest habitat.

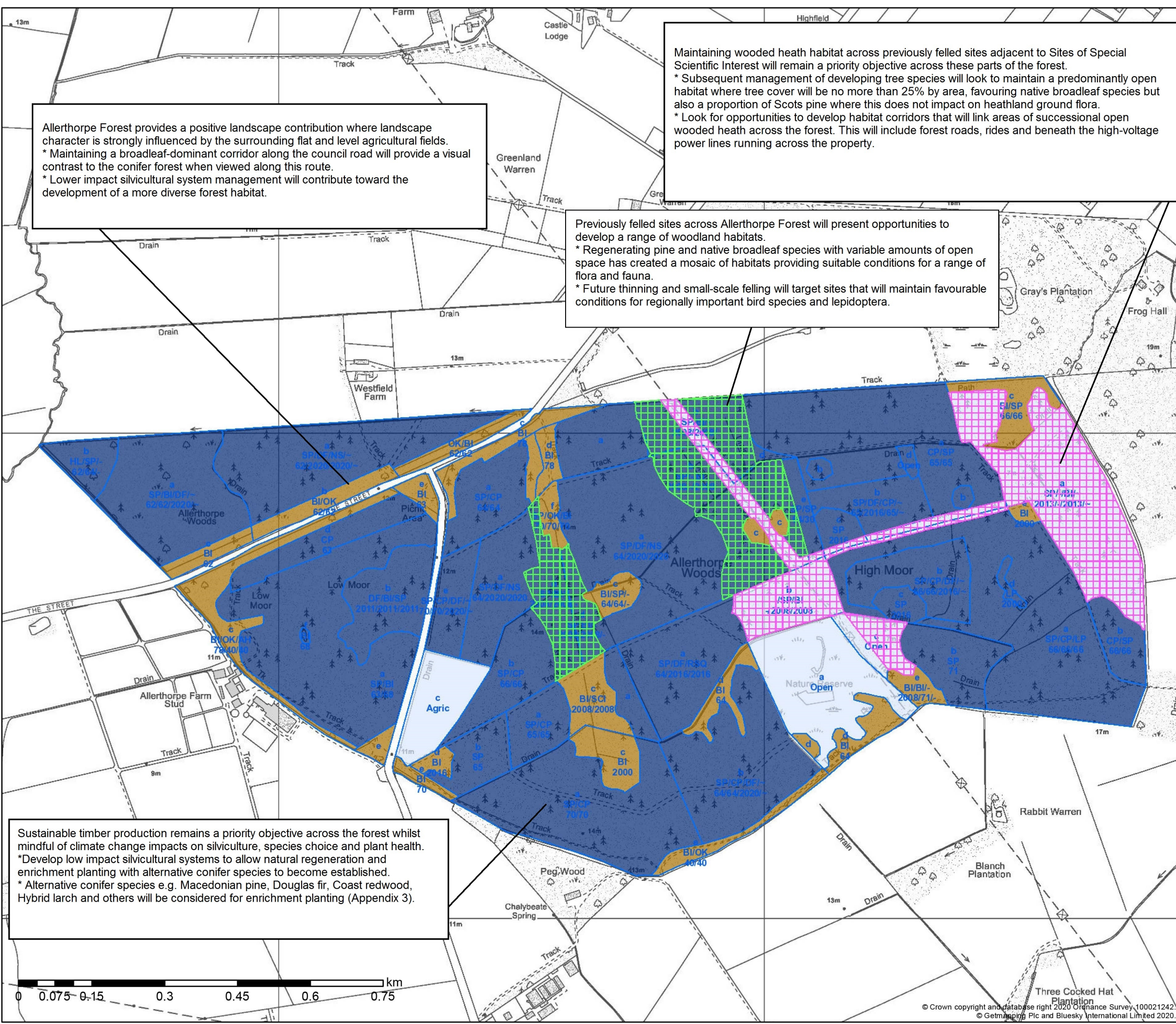
Maintaining wooded heath habitat across previously felled sites adjacent to Sites of Special Scientific Interest will remain a priority objective across these parts of the forest.

- * Subsequent management of developing tree species will look to maintain a predominantly open habitat where tree cover will be no more than 25% by area, favouring native broadleaf species but also a proportion of Scots pine where this does not impact on heathland ground flora.
- * Look for opportunities to develop habitat corridors that will link areas of successional open wooded heath across the forest. This will include forest roads, rides and beneath the high-voltage power lines running across the property.

Previously felled sites across Allerthorpe Forest will present opportunities to develop a range of woodland habitats.

- * Regenerating pine and native broadleaf species with variable amounts of open space has created a mosaic of habitats providing suitable conditions for a range of flora and fauna.
- * Future thinning and small-scale felling will target sites that will maintain favourable conditions for regionally important bird species and lepidoptera.

- Wooded heath - Successional Open
 - Mixed Woodland habitat
- Sub-compartments**
- Sub-compartments
 - Other Broadleaves
 - Other Conifers
 - Open, Agriculture



Sustainable timber production remains a priority objective across the forest whilst mindful of climate change impacts on silviculture, species choice and plant health.

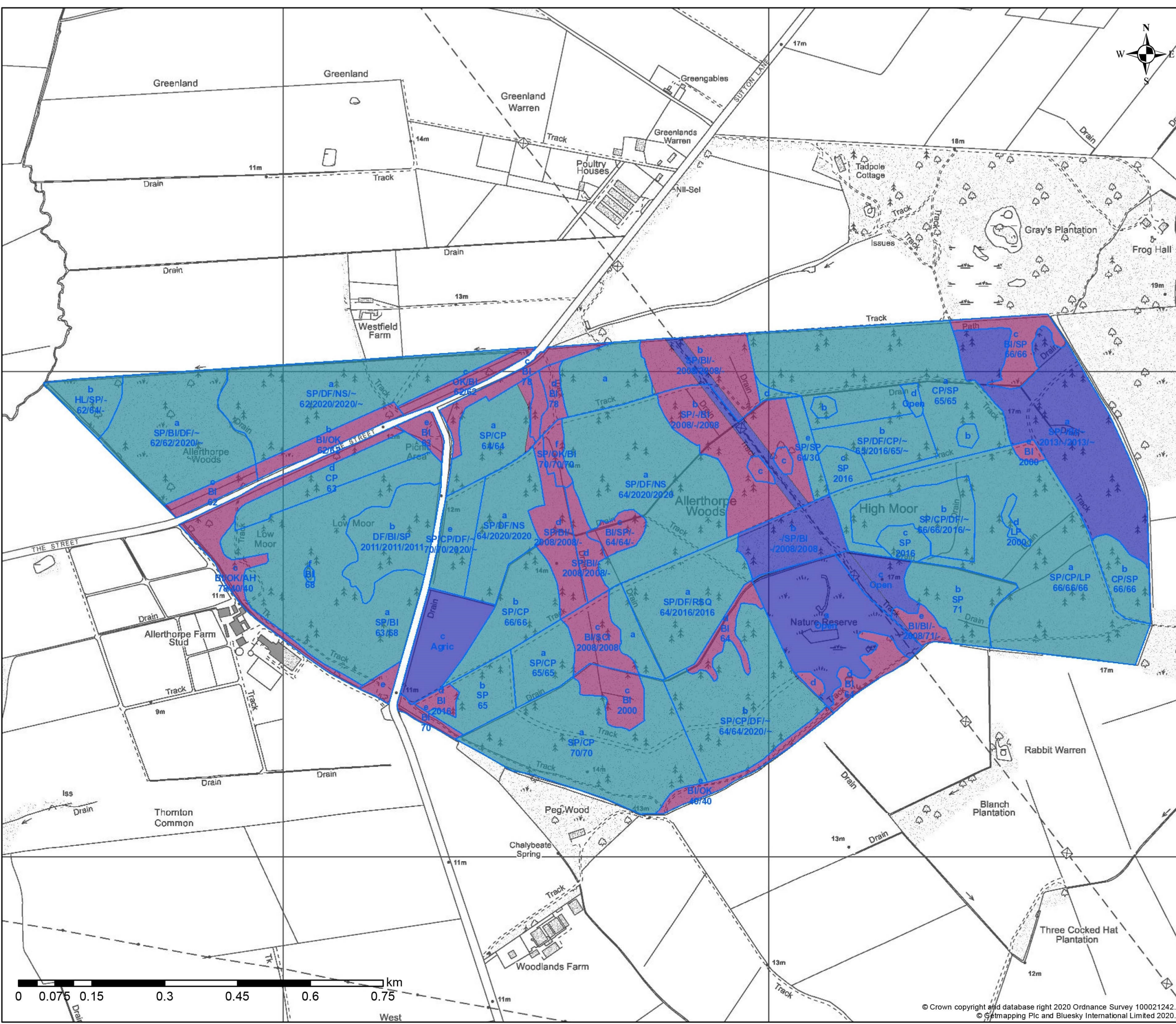
- * Develop low impact silvicultural systems to allow natural regeneration and enrichment planting with alternative conifer species to become established.
- * Alternative conifer species e.g. Macedonian pine, Douglas fir, Coast redwood, Hybrid larch and others will be considered for enrichment planting (Appendix 3).

Sub-compartments

□ Sub-compartments

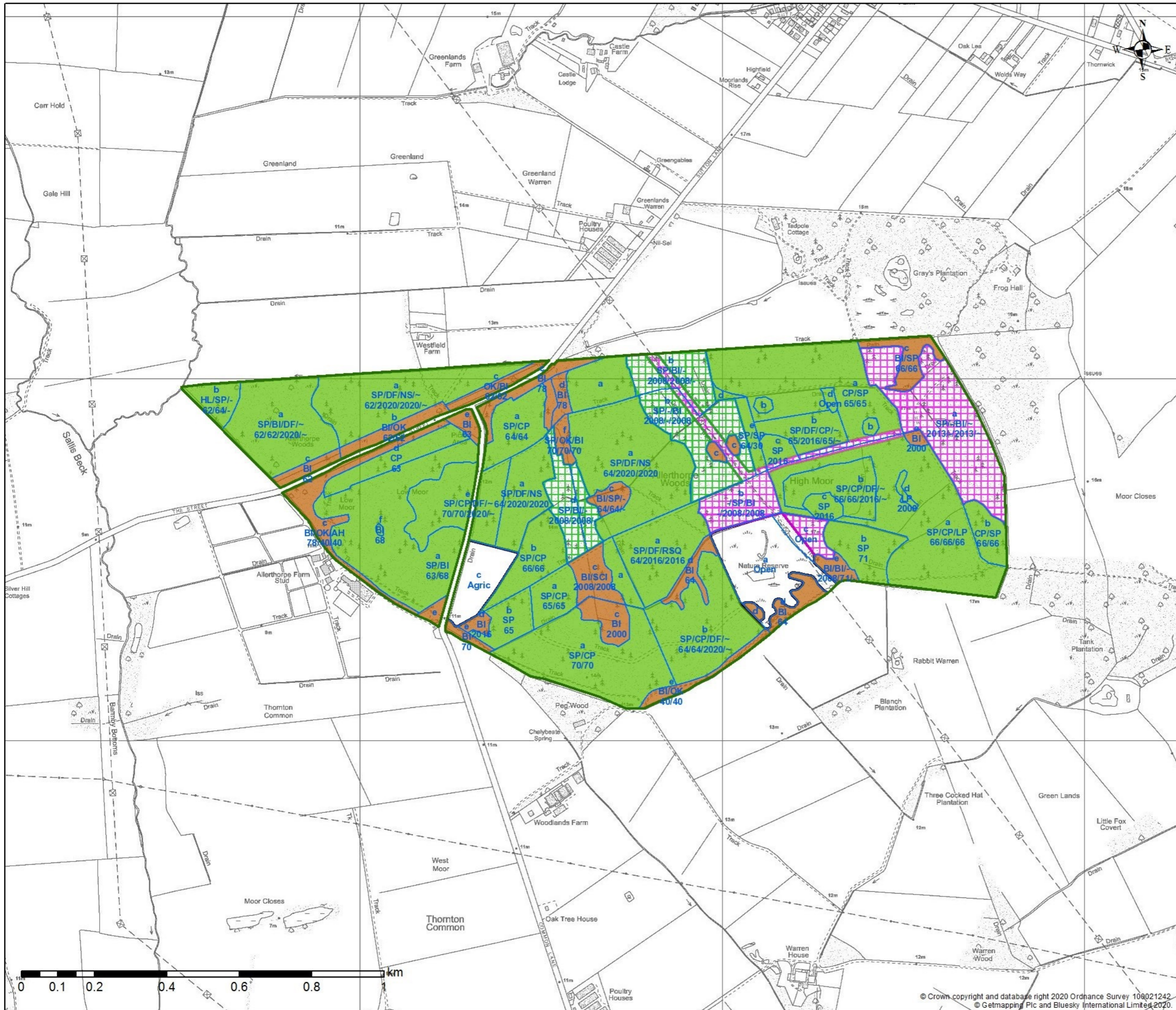
Scenario Management Coupes (Management Type)

- Strip shelterwood
- Group shelterwood
- Other/Open Land

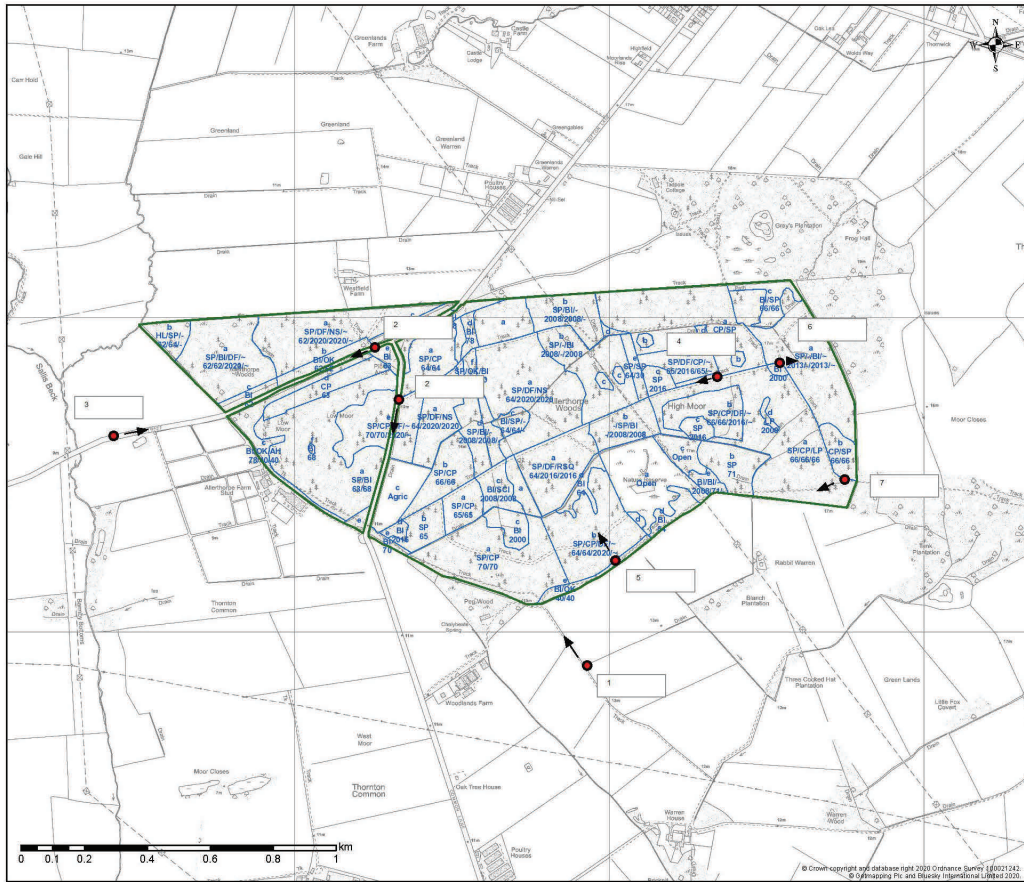


Legend

- Blocks
- Sub-compartments
- Predominantly mixed conifer
- Predominantly mixed broadleaf
- Mixed woodland habitat
- Wooded heath - Successional Open
- Managed Open - SSSI, Agriculture



External Photographs



(1) SE 759469 - Southern edge as viewed from the public footpath. This external view of the forest is typical, where mature broadleaf trees such as oak and birch create a semi-natural boundary between the intensively managed agricultural fields in the foreground and the forest behind. Surrounding farmland abuts directly onto the forest boundary.

The forest sits well within the landscape, presenting a stable forest edge that has changed little since the previous plan of 2009. The angular outline of the external perimeter is not evident when viewed from the path and is softened by the mature trees along field boundaries. Future management by lower impact silvicultural systems will help to maintain this view, subject to the potential impacts from severe weather events, pests and diseases.

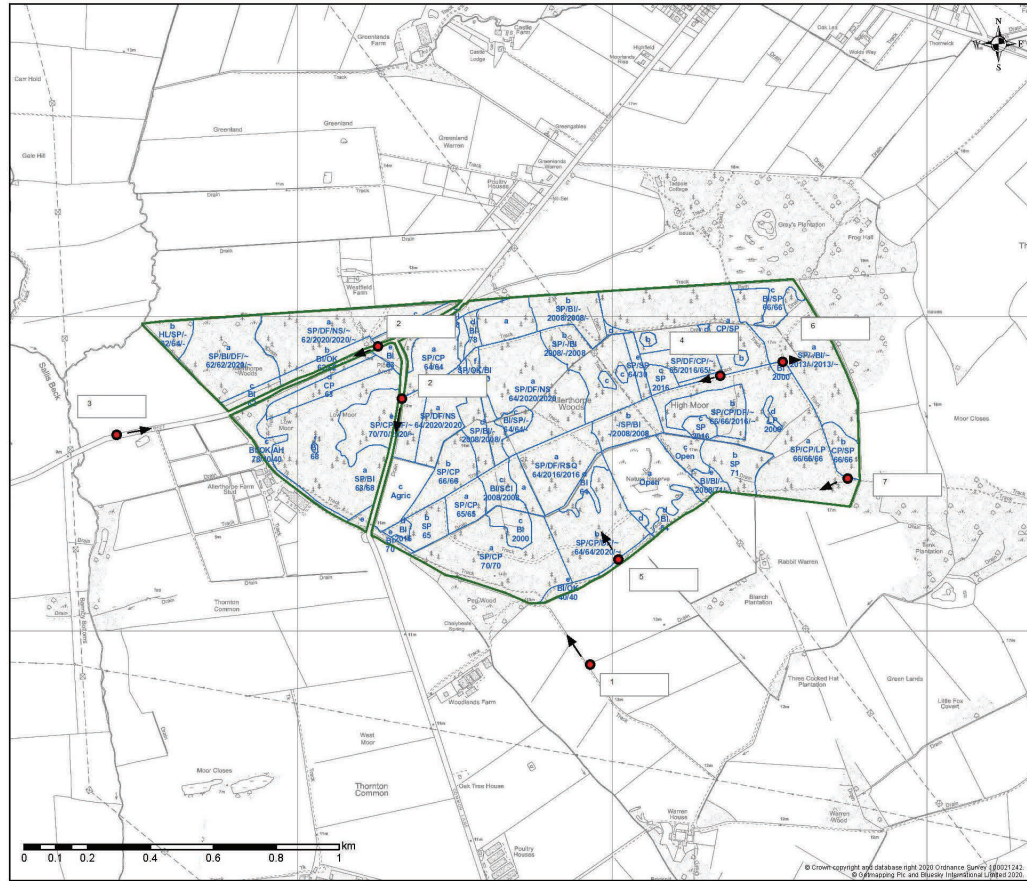


(2) SE 752479, SE753477 - The Street and Common Lane. Two minor council roads that bisect the forest, from which occupants of passing traffic experience a close and intimate view of mature broadleaf and pine species alike. Periodic thinning and small-scale felling will provide opportunities to maintain and further diversify the forest edge.

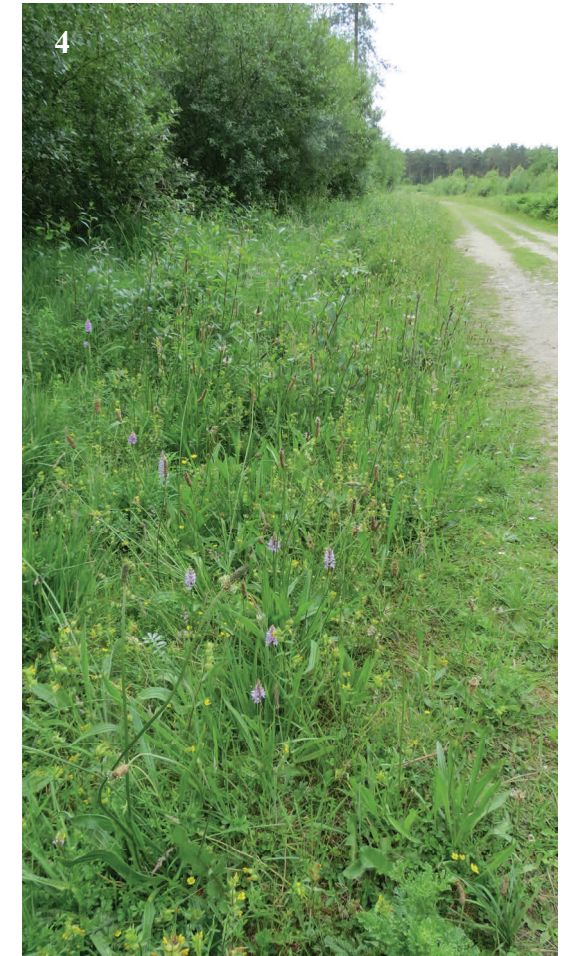


(3) SE 744476 - Western edge as viewed from council road. When viewed from a distance significant parts of the forest are obscured by hedgerows and roadside trees within this level landscape. This is a relatively long-term view of mature broadleaf and conifer species that will change little under future management proposals.

Internal Photographs



(4) SE 763478 - Forest roads, tracks, rides. Internal access routes provide opportunities to develop a network of semi-natural habitat corridors with herb-rich verges adjacent to different canopy layers. Ongoing management will help maintain and develop these for the benefit of a wider range of wildlife and visitors alike.

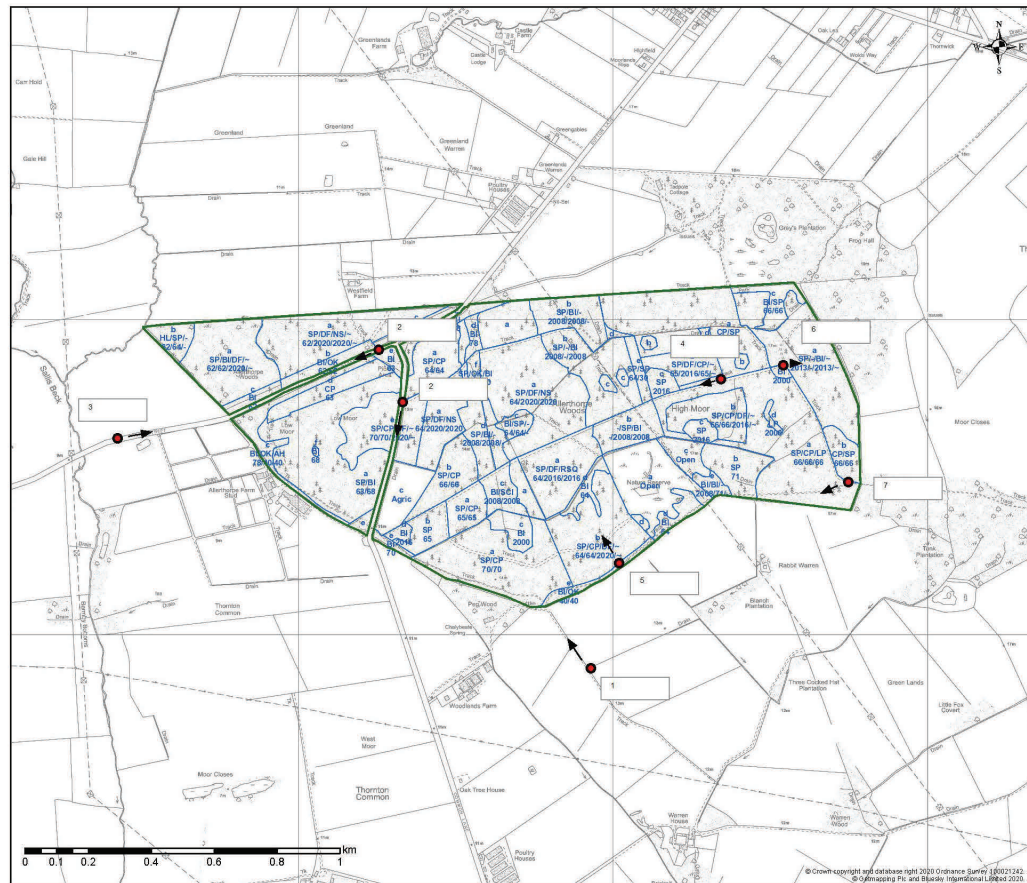


(5) SE 760472 - Strip shelterwood silviculture. Managing the mature pine stands through low impact silvicultural systems causes less rapid change to the landscape and physical environment than clear felling. These sites will establish a range of alternative conifer species such as Douglas fir, Coast redwood and Macedonian pine, as well as naturally regenerating pine and birch.

Retained seed trees will help provide a future resource of standing deadwood that will further increase the range of biodiverse habitats and the associated fauna they support.



Internal Photographs



(6) SE 765478 - Wooded heath. Where naturally regenerating pine were beginning to dominate the site, recent and future management will help maintain an open, wooded heath habitat that will compliment the adjacent lowland heath Allerthorpe SSSI.



(7) SE 767475 - Understorey. As the pine stands are periodically thinned, increasing light levels reaching the forest floor, naturally regenerating birch and oak are starting to become established. Future management will look to retain increasing proportions of broadleaf species to create a more mixed woodland habitat.