



Robson Spring Wood

Management Plan 2016-2021

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THE WOODLAND TRUST

INTRODUCTION

The Trust's corporate aims and management approach guide the management of all the Trust's properties, and are described on Page 4. These determine basic management policies and methods, which apply to all sites unless specifically stated otherwise. Such policies include free public access; keeping local people informed of major proposed work; the retention of old trees and dead wood; and a desire for management to be as unobtrusive as possible. The Trust also has available Policy Statements covering a variety of woodland management issues.

The Trust's management plans are based on the identification of Key Features for the site and setting objectives for their management. A monitoring programme (not included in this plan) ensures that these objectives are met and any necessary management works are carried out.

Any legally confidential or sensitive species information about this site is not included in this version of the plan.

PLAN REVIEW AND UPDATING

The information presented in this Management plan is held in a database which is continuously being amended and updated on our website. Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations. Please either consult The Woodland Trust website www.woodlandtrust.org.uk or contact the Woodland Trust (wopsmail@woodlandtrust.org.uk) to confirm details of the current management programme.

There is a formal review of this plan every 5 years and a summary of monitoring results can be obtained on request.

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland. Our strategic aims are to:

- Protect native woods, trees and their wildlife for the future
- Work with others to create more native woodlands and places rich in trees
- Inspire everyone to enjoy and value woods and trees

All our sites have a management plan which is freely accessible via our website www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council (FSC) through independent audit. In addition to the guidelines below we have specific guidance and policies on issues of woodland management which we review and update from time to time.

We recognise that all woods are different and that the management of our sites should also reflect their local landscape and where appropriate support local projects and initiatives. Guidelines like these provide a necessary overarching framework to guide the management of our sites but such management also requires decisions based on local circumstances and our Site Manager's intimate knowledge of each site.

The following guidelines help to direct our woodland management:

1. Our woods are managed to maintain their intrinsic key features of value and to reflect those of the surrounding landscape. We intervene when there is evidence that it is necessary to maintain or improve biodiversity and to further the development of more resilient woods and landscapes.
2. We establish new native woodland using both natural regeneration and tree planting, but largely the latter, particularly when there are opportunities for involving people.
3. We provide free public access to woods for quiet, informal recreation and our woods are managed to make them accessible, welcoming and safe.
4. The long term vision for our non-native plantations on ancient woodland sites is to restore them to predominantly native species composition and semi-natural structure, a vision that equally applies to our secondary woods.
5. Existing semi-natural open-ground and freshwater habitats are restored and maintained wherever their management can be sustained and new open ground habitats created where appropriate.
6. The heritage and cultural value of sites is taken into account in our management and, in particular, our ancient trees are retained for as long as possible.
7. Woods can offer the potential to generate income both from the sustainable harvesting of wood products and the delivery of other services. We will therefore consider the potential to generate income from our estate to help support our aims.
8. We work with neighbours, local people, organisations and other stakeholders in developing the management of our woods. We recognise the benefits of local community woodland ownership and management. Where appropriate we allow our woods to be used to support local woodland, conservation, education and access initiatives.
9. We use and offer the estate where appropriate, for the purpose of demonstration, evidence gathering and research associated with the conservation, recreational and sustainable management of woodlands. In particular we will develop and maintain a network of long-term monitoring sites across the estate.
- 10 Any activities we undertake will conform to sustainable forest management principles, be appropriate for the site and will be balanced with our primary objectives of enhancing the biodiversity and recreational value of our woods and the wider landscapes.

SUMMARY

This public management plan briefly describes the site, specifically mentions information on public access, sets out the long term policy and lists the Key Features which drive management actions. The Key Features are specific to this site - their significance is outlined together with their long (50 year+) and short (5 year) term objectives. The short term objectives are complemented by a detailed Work Programme for the period of this management plan. Detailed compartment descriptions are listed in the appendices which include any major management constraints and designations. A short glossary of technical terms is at the end. The Key Features and general woodland condition of this site are subject to a formal monitoring programme which is maintained in a central database. A summary of monitoring results is available on request.

1.0 SITE DETAILS

Site name:	Robson Spring Wood
Location:	Sproxton
Grid reference:	SE625812, OS 1:50,000 Sheet No. 100
Area:	43.16 hectares (106.65 acres)
Designations:	Area of Outstanding Natural Beauty, Full species list of canopy,shrub and ground flora species, Planted Ancient Woodland Site, Site survey of canopy, shrub and groundflora species found within the compartment 1a.

2.0 SITE DESCRIPTION

2.1 Summary Description

The wood lies within the Howardian Hills Area of Outstanding Natural Beauty, just east of Sproxton near Helmsley, North Yorkshire. It is made up of three woods named, Ness Great Wood, Green Sykes and Robson's Spring.

2.2 Extended Description

The wood extends to 42.89 hectares (106 acres) and lies within the Howardian Hills AONB, just east of Sproxton near Helmsley, North Yorkshire. Whilst the Trust gives the site the overall name of Robson's Spring, it is made up of 3 woods named, Ness Great Wood, Green Sykes and Robson's Spring.

The wood is situated in an attractive landscape setting on gentle slopes on the edge of the Vale of Pickering and the lower slopes of the North Yorkshire Moors. It has a fairly isolated setting surrounded by both arable and grassland.

In the 12th and 13th century Helmsley had 3 large deer parkland areas. The Old or East Park was to the east of Sproxton Village and covered a large from the village across to the River Rye, including the area of Robson's Spring. No detail of character of the land has been recorded but it is likely to have been a mixture of woodland and open ground. Since the mid 18th century records indicate that the woodland areas have remained very much the same as today.

In the 1960's and 70's over half the area of woodland was felled and replanted with conifers, a mixture of Western Hemlock, Spruce, Grand Fir and Larch. The broadleaf areas of the wood are predominately ash with oak, sycamore being the other main broadleaf species. A rich ground flora of bluebells, wild garlic, dogs mercury and other ancient woodland ground flora dominate the ground in the broadleaf areas. Sadly only patchy remnants remain beneath the conifer areas.

The wood has a private pheasant shoot in operation with one pen used for rearing pheasants situated in the woodland.

Public access to the wood is limited to the bridleway which crosses the wood and a few local people who walk dogs down the main forest tracks.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

The site has the benefit of public access via a bridleway which emanate from the village of Sproxton. The bridleway splits just before the wood, one heading around the northern boundary of the wood and the other heading east through the centre of the wood. The bridleway runs through the wood for approximately 300m. A permissive footpath route runs through the wood from the eastern end of the bridleway northwards for 700m before it reaches the boundary of the wood and a stile. From here it is possible to join the other bridleway and walk to Helmsley via a riverside footpath approximately 2 miles to the north.

The wood is used for pheasant shooting and open public access is not available. Visitors to the wood are requested to stay on the permissive footpath and bridleway.

Bus routes stop on the B1257 at the western end of Sproxton village. Information from the traveline website. Further information about public transport is available from Traveline- www.traveline.org.uk or phone 0870 608 2608

Parking is restricted in Sproxton and it is recommended that visitors to the wood park in Helmsley and enjoy a longer walk to the wood along the riverside footpath adjacent to the River Rye. A circular walk to the wood and back to Helmsley would be approximately 4 to 5 miles.

The nearest public toilets are available in Helmsley, approximately 3 miles to the north where there is also a large public (pay and display) car park.

3.2 Access / Walks

4.0 LONG TERM POLICY

The long term intention for the wood is to restore the areas planted with conifers back to high forest of predominantly broadleaf species.

The site will also be used by the Trust to demonstrate appropriate techniques and the benefits of restoring plantations on ancient woodland sites. Timber production and game management will therefore be balanced with conservation interest to reflect the management philosophy adopted by many private estates.

To respect the shooting interests on the site informal public access will be restricted to the main bridle path and one permissive path. Access will be encouraged on the footpath from Helmsley taking people on a longer walk and utilising the car parking and other facilities in the town.

5.0 KEY FEATURES

The Key Features of the site are identified and described below. They encapsulate what is important about the site. The short and long-term objectives are stated and any management necessary to maintain and improve the Key Feature.

5.1 Ancient Semi Natural Woodland

Description

Compartment 1a which extends to 8.79ha is ancient semi natural woodland dominated by Ash but with frequent Oak, both Sessile and Pedunculate. Although sparse in its distribution the site also contains sycamore. The understory or sub canopy contains Field Maple, Sycamore, Hazel, Dog Rose, Holly and Downy Birch. The ground flora is diverse and includes Dogs Mercury, Wood sage, Wood sorrel, Bramble, Honeysuckle, Burdock, Lesser stichwort, Wood sedge, Soft rush, Meadowsweet and Wild Garlic being well represented.

Compartment 2a which extends to 6.97ha was planted in 2002 with native species on a previously broadleaf site. A small number of mature trees were retained and are dotted around the compartment, above the young trees.

The National Vegetation classification is W8 (Fraxinus excelsior- Acer campestre - Mercurialis perennis woodland) and W10 (Quercus robur- Pteridium aquilinum-Rubus fruticososa woodland)

The site is gently sloping with a soil type of Stagnogley Soils and Jurassic and Cretaceous clay.

Significance

Semi natural ancient woodlands are an exceptionally precious and rare habitat type and as such should be protected and enhanced. Robson's Spring Wood is also particularly important as it is situated in a small concentration of ancient sites and therefore contributes and links to the quality of the woodland environment of this area.

Opportunities & Constraints

The major opportunity is to gradually extend the area into the adjacent compartment to the north and west through the removal of non-native conifers. In particular an area of approximately 1 hectare of Norway and Sitka Spruce which intrudes into the centre of compartment 1a.

In compartment 2a the bramble and other coarse vegetation which dominates the ground layer may well become suppressed as the young trees develop a denser canopy.

Factors Causing Change

Invasive sycamore, Squirrel damage, Deer damage, Rabbit damage, Natural regeneration of Himalayan Balsam, Ash dieback disease and Phythothora ramorum.

Long term Objective (50 years+)

To maintain the compartments as broadleaf high forest through a continuous cover system. The removal of individual or small patches of trees will over time also help to create a more mixed age class distribution of the tree species. The site will be used to demonstrate the continuous cover system through small scale harvesting operations.

Short term management Objectives for the plan period (5 years)

In the short term, small scale selective thinning is proposed in compartment 1a. As a demonstration site the work is will illustrate the continuous cover system by developing a wider age class distribution. Trees will be selected where their removal will aid the better quality trees to develop or younger saplings.

In compartment 2a minor formative pruning work to ensure the young trees develop good form.

Deer exclusion plots (10) will be erected throughout the woodland to enable the initial assessment of the impact of deer on the site. Deer management will continue through the freeholder.

5.2 Planted Ancient Woodland Site

Description

Compartment 3 forms part of the ancient woodland which was planted with new trees at various times. The majority of the area has been planted in the 1960's and 1970's with conifers, mainly Western Hemlock, Norway Spruce and Larch. Grand Fir together with the odd Sitka Spruce are also present. Compartment 3b is planted with a mixture of Lodgepole Pine and European Larch. This area is not considered to be an ancient woodland site and contains very clearly defined ridge and furrow. This could be medieval but the land was shown as devoid of trees on a late 1800's ordnance survey map.

Significance

Ancient woodland is the UK's richest wildlife habitat and the conversion of such wood to coniferous plantations has threatened the survival of such important habitat. The gradual removal of conifers is key objective in the restoration of such sites and Robson's Spring occupies a significant area of threatened ancient woodland.

Opportunities & Constraints

The major opportunity is the restorations of the coniferous areas of the wood back to a predominantly broadleaf wood with an associated ground flora consistent of ancient woodland. This can be achieved over a period of time by gradual thinning the conifers to allow the re-establishment of the ground flora. The broadleaf trees to be introduced via natural regeneration and new planting.

Factors Causing Change

Frequent wind damage, Fire, Natural regeneration of western hemlock, Natural regeneration of Himalayan Balsam

Long term Objective (50 years+)

The long term vision to create a high forest of predominantly broadleaf species and a mixed age class distribution.

Short term management Objectives for the plan period (5 years)

By 2020 all the conifer plantations (compartments 3a, 3b, 3c, 3d and 3 e) will have had at least two thinning exercise completed. The thinning work will ensure that at least 20% of the conifer trees will have been removed so that the objective of securing the ancient woodland remnants has been achieved. All of the stands will be secure rather than threatened or critical. The exception being the small areas left un-thinned as part of the demonstration walk.

Any windblown trees to be removed as part of the 2018 harvesting operation.

5.3 Other

Description

The site was acquired for two main reasons. Firstly to restore the ancient woodland by the gradual removal of conifers. The second reason was to demonstrate the restoration techniques used on planted ancient woodland sites to other landowners. In this respect the management techniques used are those which private estates could also follow and seek to provide a balance of timber production, game management and conservation objectives. The wood has an active pheasant shoot and the wood is able to provide a good example of how to combine restoration with game management.

Significance

The wood represents one of the few Trust land holdings to be used as a PAWS and silvicultural techniques demonstration site. It is also unique in having a private shoot on the land outside the controls of the Trust. However, as many other landowners have a shooting interest in their woods it does represent an ideal opportunity to show how the two objectives of restoration and game management can be mutually beneficial.

Opportunities & Constraints

The diversity of non-native tree species and size of the wood provide an ideal opportunity to use the wood as a showcase to other landowners on restoration techniques. The wood is also in the centre of a concentration of ancient woodlands making it locally accessible to other landowners with ancient woodlands in the area.

The management of the game and shoot is under private control and the Trust therefore have no overall control on the shooting on the land.

Factors Causing Change

Frequent wind damage, Fire, Natural regeneration of western hemlock, Natural regeneration of Himalayan Balsam, Loss of marker posts,

Long term Objective (50 years+)

The long term vision is for the site to be continued to be used by the Trust to demonstrate how good forestry practice can be linked to the sensitive restoration of ancient woodland sites. This will include balancing the timber production, shooting and conservation interests.

Short term management Objectives for the plan period (5 years)

To hold at least 1 demonstration event each year on average at the wood until 2020.

To have contributed to the improvement to the local shoot by ensuring all the forest rides have been increased in width, trees around the fence pens have been thinned and the understory cover increased.

To have removed over 4000 tonnes of softwood timber from the wood by 2020.

To maintain the main elements of this demonstration site annually, easy accessible footpath along the demonstration route, retention of marker posts and survey plots, update and provision of leaflet for external use and events.

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
2016	WMI - PAWS Restoration	2 man days - undertaking removal of windblown trees to maintain demonstration site in a good condition for visitors to the site	29/02/16
2016	WMI - General Site Restoration Work	Undertake shelter maintenance on all new planting and replace all shelters where trees are dead or missing. Clear bramble from around all tubes to give 1m clearance.	29/02/16
2016	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	26/06/16
2016	WMI - Invasive Plant Control	c.f. Removal of Himalyan Balsam	01/08/16
2016	AW - Management Access Maintenance	1) Cut and clear demonstration walkway through the wood. 2) Clean and paint entrance signs 3) Erect new entrance sign on eastern boundary 4) Replace lost number 9 post	31/08/16
2016	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	25/09/16
2017	WMI - General Site Restoration Work	Undertake shelter maintenance on all new planting and replace all shelters where trees are dead or missing. Clear bramble from around all tubes to give 1m clearance.	28/02/17
2017	WC - Shelter Supply / Erection	Erection of 10 deer exclusion pens throughout the woodland in sites to be selected by the site manager. £50 each x 10 = £500	31/03/17

2017	WMI - PAWS Restoration	<p>Extra work carried out at Robsons.</p> <p>32 Posts £112.00</p> <p>8 Oak routed signs £217.00</p> <p>50 1.2m Tubex tree tube + stakes £213.00</p> <p>50 Hazel £30.00</p> <p>1 Day planting/clearing Hemlock £145</p> <p>2 Days building walkways and seating area 290.00</p> <p>1 Day sign installation/birch clearance/windblow clearance £145</p> <p>1 Day new bridge and extra cut £245.00</p> <p>£1397.00 + vat</p> <p>Dave</p>	31/05/17
2017	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	26/06/17
2017	AW - Visitor Access Maintenance	Supply and erection of signs for demonstration site - £140	31/07/17
2017	WMI - Invasive Plant Control	c.f. Removal of Himalyan Balsam	01/08/17
2017	CS - Ecological Survey & Assessment	Undertake ecological survey for Robson's Springs wood - 2017	31/08/17
2017	AW - Management Access Maintenance	<p>1) Cut and clear demonstration walkway through the wood.</p> <p>2) Clean and paint entrance signs</p> <p>3) Erect new entrance sign on eastern boundary</p> <p>4) Replace lost number 9 post</p>	31/08/17
2017	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	25/09/17

2018	WMI - General Site Restoration Work	Undertake shelter maintenance on all new planting and replace all shelters where trees are dead or missing. Clear bramble from around all tubes to give 1m clearance.	28/02/18
2018	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	26/06/18
2018	PE - Interpretation & Signage	Waymarked route x 25 posts around the woodland, work to include provision of posts, installation and path cutting	31/07/18
2018	WMI - Invasive Plant Control	c.f. Removal of Himalyan Balsam	01/08/18
2018	AW - Management Access Maintenance	1) Cut and clear demonstration walkway through the wood. 2) Clean and paint entrance signs 3) Erect new entrance sign on eastern boundary 4) Replace lost number 9 post	31/08/18
2018	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	25/09/18
2018	PE - Interpretation & Signage	Technical Forestry information leaflet for the woodland linked to waymarked route Zeroed down as money for design work from Biskit to come out of North Comms NED budget	30/09/18
2018	SL - Tree Safety Works - Zone A	Supply and delivery of 2 boxes of florescent tree marking paint (colour - Red). Delivery to: Alec Pue, 19 Hazel Grove, Sutton in Craven, Keighley, North Yorkshire, BD20 7QR	31/10/18
2019	WMM - General Site Management	Undertake shelter maintenance on all new planting and replace all shelters where trees are dead or missing. Clear bramble from around all tubes to give 1m clearance.	28/02/19
2019	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	26/06/19
2019	WMM - Invasive Plant Control	c.f. Removal of Himalyan Balsam	01/08/19

2019	WMM - General Site Management	1) Cut and clear demonstration walkway through the wood. 2) Clean and paint entrance signs 3) Erect new entrance sign on eastern boundary 4) Replace lost number 9 post	31/08/19
2019	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	25/09/19
2019	WMI - PAWS Restoration	Harvesting programme planned for 2018 with around 600 tonnes felled and extracted. Suggested income based on £30 per tonne average (Sawlogs and Chip combined) = £18,000 income and expenditure of £15/tonne to fell and extract = £9,000	01/11/19
2020	WMI - General Site Restoration Work	Undertake shelter maintenance on all new planting and replace all shelters where trees are dead or missing. Clear bramble from around all tubes to give 1m clearance.	29/02/20
2020	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	26/06/20
2020	WMI - Invasive Plant Control	c.f. Removal of Himalyan Balsam	01/08/20
2020	AW - Management Access Maintenance	1) Cut and clear demonstration walkway through the wood. 2) Clean and paint entrance signs 3) Erect new entrance sign on eastern boundary 4) Replace lost number 9 post	31/08/20
2020	AW - Visitor Access Maintenance	Path mowing to pedestrian specification 2.1 and mowing of verge alongside main forest verge	25/09/20

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	8.79	Ash	1920	High forest	People issues (+tve & -tve)	Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Other, Planted Ancient Woodland Site
<p>This sub-compartment, roughly rectangular in shape, occupies the shallow valley in the south-eastern sector of the northern part of the site. It is approximately 500 metres east-west and between 150 and 250 metres north-south. Morphologically the southern two-thirds slope gently towards the east-flowing stream whereas the area north of the stream is comparatively flat. The stream is typically 2 metres wide and between 50 cms and 1 metre deep with the occasional pool and riffle and debris dam.</p> <p>The sub-compartment is predominantly broadleaved in character, the principal canopy trees being Sessile Oak, Ash and some Sycamore in the southern section. In the area north of the stream the oak species tend to be pediculate. The majority of the trees tend to have small canopies reflecting poor management practices over recent decades. There is a well developed sub-canopy of Field Maple, Sycamore, Hazel, Dog Rose, Holly and Downy Birch. The ground flora is diverse. Wood sage, Wood sorrel, Bramble, Honeysuckle, Burdock, Lesser stitchwort, Wood sedge, Soft rush, Meadowsweet and Wild Garlic being well represented. The regenerating species of trees are principally Ash, Sycamore and Hazel. There is both standing and lying deadwood.</p> <p>The narrow section north of the east-west ride which forms the northern margin of the sub-compartment was managed as part of sub-compartment 3d but is largely broadleaved in character but with the occasional Western Hemlock and for management purposes has been amalgamated into this sub-compartment. Similarly the coup of Norway spruce in the western part has been placed into sub-compartment 3c.</p> <p>The stoned track which provides vehicular access to the NE part of the site has been included into this sub-compartment. The margins of this track have high floristic value. The species include Pendulous sedge, Cow parsley as well as those detailed above.</p> <p>There are two sets of paths/tracks which run west across the sub-compartment which have been established to service the pheasant feeders close to the stream.</p>							
2a	6.97	Oak (pedunculate)	2002	High forest		Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Planted Ancient Woodland Site

This sub-compartment lies to the south of the main track which connects the village of Sproxton with the farm “Throstle nest” to the east. The track forms a watershed and consequently the land slopes gently to the south. This sub-compartment as well as sub-compartment 3a is known as “Green Sykes”, probably derived from the Old Norse “sik” meaning “land next to a stream”.

This sub-compartment was formerly a broadleaf plantation which was clear-felled but leaving odd individual broadleaved trees throughout the compartment. It was subsequently planted with broadleaves in 2002 with mainly oak and ash. Sycamore and willow are developing throughout the stand from cut stumps.

The dominant ground flora species are rush, bracken and bramble with Primrose in selected areas. There is a pedestrian path in the eastern corner. An extraction route has been created through the centre of sub-compartment from the parking area on the east-west track through to the southern boundary of the sub-compartment.

3a	5.66	Norway spruce	1979	High forest	Mostly wet ground/exposed site	Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Planted Ancient Woodland Site
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This sub-compartment is the southernmost of the site. It is roughly triangular being 320 metres north south and 220 metres east-west along its northern boundary and 100 metres at its southern apex.

The sub-compartment was initially established as a Norway spruce plantation probably about 30 years ago but does contain a number of broadleaves both as emergent and as regeneration within the plantation itself. The majority of the broadleaved natural regeneration is severely etiolated and would not be structurally stable if the Norway spruce was removed. However the situation serves to demonstrate the broadleaves potential to regenerate in the long-term. The broadleaved emergent are concentrated in the NE portion of the sub-compartment and around the boundaries.

The plantation has been undermanaged in the past and as a consequence the Norway spruce is highly variable and contains a large number of dead and dying stems particularly in the eastern half where the stocking density appears higher. There is evidence of some thinning in the western half and therefore the stems are less variable in both height and diameter. Throughout the ground flora is very sparse as a result of low light levels. Planting year 1979.

3b	0.82	Lodgepole pine	1964	High forest		Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty
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This is a small compartment immediately to the north of the main track. It is approximately 100 metres by 80 metres and slopes downhill to the NE. There are remnants of ridge and furrow in the forest floor and there is OS map evidence that the area was, until comparatively recently, open ground. It seems probable that this Larch and Lodgepole pine plantation has a PY of about 1967. There is a fine mature Oak in the SE corner of the sub-compartment and within the planting Sycamore, Ash, Holly and Dog rose form a sub-canopy. The field layer is sparse and generally confined to Male fern and bramble.

The coup appears not to have been thinned and as a consequence the diameter at breast height is highly variable, between 16 & 35 cms.

Apart from access to pheasant feeding stations from the main track there are no paths in this sub-compartment.

3c	8.83	Mixed conifers	1967	High forest		Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Planted Ancient Woodland Site
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This large sub-compartment extends from the main track northwards to the stream which forms the north-western boundary of the site. Although the slope is generally north-facing it is dissected by three east-flowing streams which form shallow re-entrants. The central stream is deeply incised close to the western boundary.

The planting pattern is complicated with PY of 1967. Western hemlock predominates in the coups to the north and west, whilst there is a fine coup of Grand fir in the NE sector. In addition there is a small coup of Norway spruce in the northern part of the sub-compartment. For the sake of management consistency the coup of Norway spruce which is surrounded by sub-compartment 1a and on the other side of the track, is included in this sub-compartment.

Within the low-light environment of the core of this sub-compartment there is no sub-canopy, no natural regeneration and only a very sparse field layer. However along the stream margins and the E-W ride ground floral species are more abundant. These include Opposite-leaved saxifrage, Wood sorrel, Dog violet, Hard rush, Horsetails, Male fern, Bramble and Honeysuckle. Unfortunately in these higher light environments there is also prolific regeneration of Western hemlock. These areas have been designated as "hot-spots" in the PAWS survey.

3d	8.05	Western hemlock	1966	High forest		Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Planted Ancient Woodland Site
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This is a large homogenous sub-compartment on the north-side of the stream forming the bulk of the south-facing limb of the site. It is known as Ness Great Wood. This Western hemlock plantation was probably planted in 1966 and has been line-thinned in the past. The racks run north-south, up and down the slope and there is also some evidence of former extraction routes which run across the slope. The stems are generally of good form with a mean dbh of 33 cms (2010). There are a small number of broadleaves principally Oak and Sycamore but these are of poor form being highly etiolated. The ground layer is very sparse and is limited to the occasional Male fern, Honeysuckle and Bramble. In the racks where the light levels are slightly higher there is also Wood sorrel, Lesser stitchwort and bluebell. Natural regeneration is limited to the occasional Holly and there is little regeneration of Western hemlock at the present. There are no established footpaths through the sub-compartment and the peripheral tracks are not well-used.

3e	4.04	European larch	1961	High forest		Ancient Semi Natural Woodland, Other, Planted Ancient Woodland Site	Area of Outstanding Natural Beauty, Planted Ancient Woodland Site
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This roughly triangular sub-compartment forms the northern extremity of the site and slopes gently towards the south. It was planted with Larch during the 1960s but also contains a number of broadleaves principally of Ash, Sycamore and Silver birch. The number of broadleaves within the canopy is highest in the north and east and declines southwards. There appears to have been only limited management in the past and as a consequence both the Larch and Broadleaves are severely etiolated and windblown stems are common. There are areas of well-developed sub-canopy of Hazel, Holly and Elder particularly to the north where bramble is dominant. However in the south where bracken predominates there is a noticeable lack of broadleaved regeneration. The ground layer is limited within the core of the sub-compartment but the rides and their margins contain a more diverse assemblage of flowering plants. These include Dog violet, Stitchwort, Dog's mercury, Bluebell and Primrose.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2019	1a	Thin	8.79	23	200
2019	3a	Thin	5.66	35	200
2019	3b	Thin	0.82	24	20
2019	3c	Thin	8.83	45	400
2019	3d	Thin	8.05	43	350
2019	3e	Thin	4.04	37	150

GLOSSARY

Ancient Woodland

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

Ancient Semi - Natural Woodland

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

Ancient Woodland Site

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

Beating Up

Replacing any newly planted trees that have died in the first few years after planting.

Broadleaf

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

Clearfell

Felling of all trees within a defined area.

Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

Continuous Cover forestry

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

Coppice

Trees which are cut back to ground levels at regular intervals (3-25 years).

Exotic (non-native) Species

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

Field Layer

Layer of small, non-woody herbaceous plants such as bluebells.

Group Fell

The felling of a small group of trees, often to promote natural regeneration or allow planting.

Long Term Retention

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

Minimum Intervention

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

Mixed Woodland

Woodland made up of broadleaved and coniferous trees.

National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

Native Species

Species that arrived in Britain without human assistance.

Natural Regeneration

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

Origin & Provenance

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

Re-Stocking

Re-planting an area of woodland, after it has been felled.

Shrub Layer

Formed by woody plants 1-10m tall.

Silviculture

The growing and care of trees in woodlands.

Stand

Trees of one type or species, grouped together within a woodland.

Sub-Compartment

Temporary management division of a compartment, which may change between management plan periods.

Thinning

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

Tubex or Grow or Tuley Tubes

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established. Either by hand cutting or with carefully selected weed killers such as glyphosate.

Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.