



Ragpath Wood

Management Plan 2015-2020

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:	Ragpath Wood
Location:	Esh Winning
Grid reference:	NZ199418, OS 1:50,000 Sheet No. 88
Area:	32.91 hectares (81.32 acres)
Designations:	County Wildlife Site (includes SNCI, SINC etc), Planted Ancient Woodland Site

2.0 SITE DESCRIPTION

2.1 Summary Description

A large mixed woodland, increasingly popular since the old railway line between the wood and the village of Esh Winning became part of the Deerness Valley Walk. Ramsons, wood anemone and wood sorrel thrive in the flatter areas by the river.

2.2 Extended Description

Ragpath Wood is a large Planted Ancient Woodland Site (PAWS) occupying 32.97 hectares situated on a steep hillside overlooking the village of Esh Winning in the Deerness valley (grid ref: NZ 202 421). It was purchased by the Woodland Trust in 1996 and forms the eastern end of a continuous belt of plantation woodlands that occupy the southern side of the valley within the Upper Deerness Valley Tourist Area. The wood is mostly surrounded by arable and pastureland, except to the northwest where Esh Winning is located.

Ragpath is extremely well used both by locals and other people from outside the valley. The old railway line that separates the village from the wood now forms part of the Deerness Valley Walk, whilst along the wood's southern boundary runs a bridleway. A second bridleway runs down the western side of the wood and a public footpath crosses its eastern end. Linked to these routes are numerous permissive paths running throughout the site. Also passing through this wood is the famous Roman Road known as Dere Street that follows an incline down the valley side to cross the river on its way to the Roman fort at Lanchester.

This large mixed wood was last replanted in about 1967 with conifers and broadleaves after being felled during the Second World War. Species currently growing on site include European larch, Scots pine, Norway spruce, Sitka spruce, sycamore and beech, with a scattering of oak and birch. As would be expected, only a sparse under storey exists. Broadleaf regeneration (mostly beech) occurs but holly is the dominant under storey species throughout the wood. Soils tend to be acidic in nature and on the upper slopes typical heathland species, such as heather, bilberry and gorse are still found in places. Along the flatter areas by the river soils are richer and support carpets of wild garlic, wood anemone, wood sorrel and areas of butterbur. However, within all sub-compartments the buckler ferns are dominant among the field layer. Bracken occurs on site but is confined to the margins of the bridleways and has not yet penetrated into the body of the wood. The whole wood also forms part of the Deerness Valley County Wildlife Site and lies in a Smoke Control Zone.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

For visitors wishing to reach the wood by public transport, bus stops are located near to the market place and outside the Coop in the centre of Esh Winning village and on Station View near the turning leading up to Woodland Terrace. A small (~10 spaces) public car park is also available at the market place from where the wood can be reached within 10 minutes by walking along Station View then taking the first left and following the road round onto Woodland Terrace that leads onto the bridleway entering the wood from the southwest. On-road parking for one or two cars is also available on Woodlands Terrace near to the entrance of the bridleway but care should be taken not to inconvenience residents living there.

The two main entrances to the wood are located off Broadgate Road to the northeast and off Woodland Terrace to the southwest. Between these two entrances runs a public bridleway along the full length of the wood. Both entrances consist of metal boom gates with horse stiles alongside them over which walkers have to step to enter the wood. Another public bridleway runs north-south through the western end of the wood and has a metal horse gate at its southern entrance and a footbridge at its northern end, providing access across the River Deerness to join the old railway line that is now part of the Deerness Valley Walk. A public footpath runs north-south through the eastern end of the wood. The entrances on this path where it enters the wood are marked by a simple step stile to the south and an old gate to the north. The surfaces of both bridleways at the western end of the wood are semi-metalled and in reasonable condition. The east-west bridleway, once it climbs up a rather steep slope to run along the southern edge of the wood, is un-metalled becomes more variable with wet boggy patches in places as you travel eastwards along it. The public footpath is un-metalled but has a reasonable level and compact earthen surface.

3.2 Access / Walks

As the Deerness Valley Walk runs along the northern edge of the wood, just north of the river, visitors can incorporate a visit to Ragpath Wood into a longer day's ramble.

4.0 LONG TERM POLICY

To identify, secure and expand the existing ancient woodland species among the ground flora, shrub and canopy layers through carrying out a programme of restoration work involving the gradual removal of conifers to favour broadleaves. Returning Ragpath Wood to predominantly broadleaved high forest woodland by 2025 will alleviate the problems of heavy shading caused by many conifers and allow more light to reach the woodland floor to stimulate regeneration among the field and shrub layers and thereby increase the biodiversity of the wood so that, over the long-term (50 years plus) the wood begins to take on some of the characteristics of its former ancient woodland character.

Although the emphasis during restoration will be to favour native broadleaved species, beech and sycamore will still form a significant percentage of the future canopy makeup. The wood will continue to be a significant landscape feature but its canopy will be broadleaved dominated with no more than about 20% conifers scattered throughout the wood. The course of the River Deerness through the wood will be more open with about 50% of the river under dappled shade along its northern bank.

Maintaining the two public bridleways in good repair, along with the public footpath, will encourage continued public access to the wood. At least 5km of paths (including the 3km of public rights of way) will be maintained within the wood, along with the eight entrances currently in use. This will help fulfil the condition required by Heritage Lottery Funding to ensure the general public have full and appropriate access to wood.

The restoration of Ragpath Wood will help fulfil the Trust's corporate objective of improving woodland biodiversity, whilst providing public access also contributes to its corporate objective of increasing enjoyment and understanding of woodland.

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 Informal Public Access

Description

Ragpath is a heavily used wood that enjoys extensive usage both by the residents of Esh Winning and people from outside the local area. Around 3km of public rights of way in the form of two bridleways and a public footpath exist within the wood along with many more kilometres of permissive footpath. Outside the wood, the Deerness Valley Walk runs along part of the northwest-facing boundary and this, along with the other public rights of way that run through Ragpath, link the wood into the wider landscape.

Significance

Providing public access to woods is a cornerstone of the Trust's management approach to its properties and is encapsulated in its corporate objective of increasing enjoyment and understanding of woodland. Ragpath provides a substantial area of woodland through which people are free to roam to enjoy quite recreation. The presence of bridleways also means that a wider range of users besides walkers can access the wood for recreation, making this wood an important local amenity.

Opportunities & Constraints

Part of the two bridleways in the western end of the wood were re-surfaced during 1998 in co-operation with Durham County Council after the Trust carried out felling works alongside the bridleways to open them up. Future thinning operations could provide the opportunity to widen more of the bridleway running through sub-cpts 1b & 1a. Following this, further re-surfacing works could be looked at in co-operation with the County Council. Better surfacing of the bridleways would also make the wood more suitable for wheelchair access and help fulfil our obligation under HLF funding to consider the needs of people with disabilities. The presence of Dere Street on site could also provide further opportunities to work with Durham County Council to improve public access by providing a footbridge across the River Deerness to link the Roman road on each side and allow people the opportunity to access the wood via this route. However, because Dere Street is historically important, care will have to be taken to ensure no activities cause damage to this monument. Holburn Bridge, spanning Holburn Beck at the northern end of sub-cpt 1d, was built in 1898 and became the Trust's responsibility when it acquired Ragpath Wood and has been subject to inspection and remedial works for use in timber harvesting.

Factors Causing Change

Vandalism of entrances and signs
Path damage due to vehicle & horse trespass

Long term Objective (50 years+)

To ensure public access to the wood continues to be available in the future by maintaining all eight entrances currently in use and providing access to at least 5km of paths (including the 3km of public rights of way).

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

The eight entrances currently servicing the wood will be maintained in perpetuity to ensure the public enjoy the same level of access to the wood in the future as they do today. The public footpath, bridleways and all formal paths in the wood will also be maintained for future public access. During 2016, a number of improvements will be made to the wood's entrances, including the removal/replacement of worn out access furniture and other old and/or unauthorised items erected on site, such as seats and signs.

5.2 Planted Ancient Woodland Site

Description

Ragpath Wood is a Planted Ancient Woodland Site (PAWS) that was cleared during the Second World War. The present woodland was planted around 1967 as a mix of conifers and broadleaves. Much of the wood occupies quite steep slopes that are unlikely to have been used for agriculture in the past but show clear evidence of being extensively mined and quarried. The understorey is generally sparse and poorly developed with holly being the only species growing in any abundance, though a seedling survey carried out in May 2010 did reveal ash, beech, holly, sycamore, rowan and some Sitka spruce regeneration was present in moderate numbers. Although the field layer is equally impoverished, some remnants of pre-planting ground flora still survives in places. Ragpath Wood forms a prominent feature in the landscape overlooking Esh Winning Village. Occupying a steep northwest-facing slope, it is highly visible from across the Deerness Valley and from the B6302.

Significance

Ancient Semi-natural Woodland, a nationally rare habitat type whose preservation is both a local and national target within biodiversity action plans. Where ancient woodland sites have been planted with conifers, it is a stated aim of both the Government and the Woodland Trust that these should be restored back to native woodland. Restoration back to native broadleaves will increase the biodiversity of the wood and help save valuable elements of the former ancient woodland that may still be present among the understorey and field layers or among the seed bank preserved in the soil. Ragpath Wood is a large PAWS site in its own right but also forms part of a wider concentration of connected ancient woodland sites located along the southern slopes of the Deerness Valley. Simply because Ragpath Wood is so prominent in the landscape around Esh Winning, any abrupt change in its appearance will have a detrimental affect on the landscape and will inevitably meet with significant public opposition. Part of the wood also lies in the Upper Deerness Valley Tourist Area thereby adding to its landscape importance. The wood is also a County Wildlife Site and therefore any abrupt changes are likely to be detrimental to the site's ecology.

Opportunities & Constraints

Perhaps the greatest constraint to restoring Ragpath Wood is the anticipated public opposition to tree felling in this well used wood. Because the wood is such a prominent landscape feature, located in the Upper Deerness Valley Tourist Area, means that restoration will be done over a long timescale (following the Trust's PAWS restoration principles) in order to minimise the visual impact of management works. Steep slopes, the River Deerness and long extraction distances across much of the site, coupled with the mediocre quality of most of the conifers has resulted in no interest being shown in standing timber sales. Consequently, to achieve operational objectives, implementation of thinning to waste has been adopted.

High levels of vandalism experienced in the wood during the past also suggests that the use of shelters or stock fencing for protection is likely to be unfeasible, adding to the difficulties of achieving successful restocking. The presence of roe deer and grey squirrels in the wood may also have practical and financial implications for restocking. In terms of opportunities, the age and species of most of the conifer crop is such that it is an economically viable crop whose felling should generate income that can be used to finance restoration work. Good vehicular access onto and through the site should also make these crops more attractive to potential buyers, though having to cross Holburn Bridge and the presence of Dere Street within the wood both add further complications.

Because the wood is a landscape feature, this does restrict the rate at which restoration work to remove unwanted species can be undertaken, particularly if significant wind damage is to be avoided on this exposed site. However, because the rest of the woodland running along the southern side of the valley consists mostly of uniform conifer plantations, returning Ragpath back to native broadleaf woodland will, in the long-term, create greater structural diversity within the landscape.

Factors Causing Change

Heavy shading suppressing ground flora

Acidic carpet of conifer needles

Landslides & ground compaction/erosion due to heavy usage.

Long term Objective (50 years+)

To identify, secure and expand the existing ancient woodland species among the ground flora, shrub and canopy layers through carrying out a programme of restoration work to re-establish a predominantly broadleaved high forest woodland canopy to help increase woodland biodiversity so that, over the long-term (100 years plus) the wood begins to take on some of the characteristics of its former ancient woodland character.

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

During this plan period (2015 to 2020) no further thinning work will be carried out. This will allow time for the wood to benefit from the thinning work already completed between 2003 and 2009, as well as allow time for the arisings left in the wood from these operations to rot down. How the wood responds to being thinned will be monitored to ensure the desired changes are being achieved and to inform further restoration work in the future. Between 2020 and 2025, sub-cpts 1a, 1b and 1c will again be selectively thinned, favouring native broadleaves where these occur to further ameliorate conditions under the canopy to encourage a general increase in woodland biodiversity and particularly among ancient woodland indicator species. By 2025, the physical structure of the canopy will have become more open and dominated by broadleaves (particularly beech and sycamore) as successive thinning reduces the amount of conifers in the canopy to around 20%, scattered throughout the wood.

5.3 Watercourses

Description

The River Deerness both forms the boundary along part of the northern edge of the wood and also flows through part of the site. At Ragpath, the river meanders extensively and is edged on its southern bank by steep slopes mostly carrying young/semi-mature sycamore. These slopes have suffered landslides in several places; some resulting in large rocks falling into the river. The northern bank is flat and planted with a mix of spruce and sycamore. A scattering of poplars grow along both banks of the river. Its channel varying between two to four metres in width contains water around 10 to 30cm in depth, though occasionally up to 1m or so on some bends where the bank may reach 2m or more in height.

Significance

The River Deerness is an important natural habitat for both humans and wildlife living in the Deerness Valley. The importance of rivers is recognised in the Durham Biodiversity Plan in which they form one of the habitat action plans with set targets for improving water quality and biodiversity.

Opportunities & Constraints

The association between woodland and river creates an environment of high biodiversity value that can be maintained and enhanced through sensitive management of the riverbank. Thinning operations have removed much of the spruce from the northern bank of the river to open stands and alleviate the problems of heavy shading in this ecologically sensitive area. The poplars that were declining in the dense canopy will also benefit from the more open conditions created by the selective thinning. However, being next to a major watercourse will also impose constraints on what management options (e.g. chemical weed control) can be used and some works may require consultation and possibly approval from the Environment Agency.

Factors Causing Change

Heavy shading suppressing ground flora
 Acidic carpet of conifer needles
 Landslides
 Ground compaction/erosion due to heavy usage
 Dense canopy suppressing poplars

Long term Objective (50 years+)

To enhance the environment along that part of the River Deerness that flows through Ragpath Wood to create a vibrant natural habitat by substantially reducing spruce numbers along the northern riverbank to combat heavy shading and allow the field layer and understory to re-establish itself. The opening up of the un-thinned conifer stands along the riverbank will also allow more dappled light to reach the water, benefiting the whole river ecosystem.

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

The riverbanks, along with the rest of the wood, will be monitored during this plan period to ensure the desired changes are being achieved by our previous restoration work and to allow time for the arisings from previous thinning work to rot down. By 2025, all but a few conifers (retained for structural diversity and interest) will have been removed from the riverbanks during subsequent thinning operations, creating more open conditions with dappled shade along at least 50% of the river's length.

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
2015	LC - Fly Tipping	Payment to dismantle camp in old quarry and collect up all litter and fly-tipped items and dispose of these off site. This operation is an addition to the 2015 Estates Management Contract and is subject to the conditions contained in the General Conditions for Contract Work and Specific Conditions for Estates Management Contracts that make up this contract.	18/12/15
2016	AW - Visitor Access Maintenance	PATH & ENTRANCE WORKS (1). Job instruction sheet 1 - options A & B.	30/06/16
2016	AW - Visitor Access Infrastructure	Upgrade of several entrances, removal of old fencing and benches, erection of new signage, cutting back encroaching vegetation along bridleways.	31/07/16
2016	AW - Visitor Access Maintenance	PATH & ENTRANCE WORKS (2). Job instruction sheet 1 - options A & B.	30/09/16
2017	SL - Routine Safety Work	Remove camp and associated litter from the eastern end of Ragpath Wood. This job was completed on 23.3.17	30/04/17
2017	AW - Visitor Access Maintenance	PATH & ENTRANCE WORKS (1). Job instruction sheet 1 - options A & B.	30/06/17
2017	SL - Emergency Safety Works	As discussed in telephone conversation on 16th August and identified by the images sent to you on the same day. Remove split Beech tree from top of woodland at Ragpath Wood, chip crown material into woodland, stack arising's as habitat pile nearby. This job was completed on Thursday 17.8.17.	31/08/17
2017	AW - Visitor Access Maintenance	PATH & ENTRANCE WORKS (2). Job instruction sheet 1 - options A & B.	30/09/17
2018	LC - Routine Litter Picks	Litter Clearance	31/03/18
2018	AW - Visitor Access Infrastructure	Entrance Upgrades	30/04/18
2018	AW - Visitor Access Maintenance	Path upgrades and Maintenance as per survey	30/06/18
2018	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/06/18
2018	AW - Visitor Access Maintenance	Path Cutting and Maintenance	30/09/18
2018	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/09/18

2018	LC - Routine Litter Picks	Litter Clearance	30/09/18
2019	LC - Routine Litter Picks	Litter Clearance	31/03/19
2019	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	31/03/19
2019	AW - Visitor Access Maintenance	Path Cutting and Maintenance	30/06/19
2019	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/06/19
2019	AW - Visitor Access Maintenance	Path Cutting and Maintenance	30/09/19
2019	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/09/19
2019	LC - Routine Litter Picks	Litter Clearance	30/09/19
2020	LC - Routine Litter Picks	Litter Clearance	31/03/20
2020	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	31/03/20
2020	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/06/20
2020	AW - Visitor Access Maintenance	Path Cutting and Maintenance	30/06/20
2020	AW - Visitor Access Maintenance	Path Cutting and Maintenance	30/09/20
2020	LC - Routine Litter Picks	Litter Clearance	30/09/20
2020	AW - Visitor Access Maintenance	Entrance Maintenance and Inspection	30/09/20

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	8.01	Sycamore	1967	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Landscape factors, Mostly wet ground/exposed site, People issues (+ve & -ve), Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Planted Ancient Woodland Site	County Wildlife Site (includes SSSI, SINI etc), Planted Ancient Woodland Site

Sub-cpt 1a covers 8.01 ha at the east end of Ragpath Wood. Its western boundary is marked on the upper slope by the public footpath and then by the permissive footpath that runs down to the pedestrian entrance next to the river opposite the sewage works. Its other boundaries are formed by the external boundaries of the wood. This part of Ragpath Wood occupies a north-facing slope that in the past has been heavily scarred by mining and quarrying, creating many bumps and hollows and abrupt changes of slope. Alongside the river, the slope becomes very steep in places with some near vertical drops of up to a few metres in height; many created by landslides on the steeper slopes. Rock outcrops also occur in places along the river's edge. A public footpath runs through the sub-cpt and joins the public bridleway that runs along the top of the slope adjacent to the southeast boundary. Part of the permissive footpath (forming the western boundary of 1a) follows the track that leads to the site of an old coal mine that lies in the northwest corner of 1a. Although not marked on the ground, this area lies outside Woodland Trust ownership.

The canopy of 1a consists of mixed woodland planted around 1967 and thinned for the second time around 1990 then again in 2008/09. Sycamore is now the dominant canopy species but beech, Scots pine, Sitka spruce and European larch are also present in significant proportions forming an intimate mixture. Sycamore is mostly concentrated on the steep slopes down near the river and in the western side of 1a and appears, at least in part, to have been planted along with other species, whereas the thin scattering of oak probably regenerated naturally. Beech dominates on the upper slopes and in the eastern end of the sub-cpt. A few poplar grow along the river's edge along with the odd cherry, mature sycamore and spruce. The understorey is poorly developed, consisting of the occasional holly and a scattering of beech regeneration. Ferns, particularly buckler ferns, are the dominant ground flora, followed by bramble on the upper slopes where greater light is available. Some small fragments of bilberry and heather still hang on in places as a reminder of the site's former ground flora before being replanted.

1b	16.74	Sycamore	1967	High forest	Archaeological features, Housing/infrastructure, structures & water features on or adjacent to site, Landscape factors, Legal issues, Mostly wet ground/exposed site, People issues (+ve & -ve), Services & wayleaves, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Planted Ancient Woodland Site	County Wildlife Site (includes SNCI, SINC etc), Planted Ancient Woodland Site
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Sub-cpt 1b accounts for the bulk of the wood, covering 16.74 ha and extending westwards to include the bridleway that runs down the hill to join a second bridleway heading northwards over the river. The sub-cpt occupies a northwest-facing slope, parts of which are steep or very steep in places. As in sub-cpt 1a, evidence of past mining and quarrying scars the slopes and one old quarry face on the upper slope at the southwest end of 1b has created a rock face with a vertical drop reaching 4m in places. Landslides on the lower slopes next to the river have created some hazardous conditions in places, particularly where undermining of the edge above slopes has occurred, and trees have toppled over. A national grid power line crosses the eastern end of 1b running northwest to southeast. Dere Street Roman road also passes through this part of the wood, represented by a holloway cut into the road's incline.

The canopy of 1b consists of mixed woodland planted around 1967 and thinned for the second time around 1990 and then again between 2005 and 2009. The trees form an intimate mixture dominated by sycamore and beech but including lesser amounts of larch, spruce, oak and birch. A few Corsican pines occur in the western end of the sub-cpt and a scattering of poplars occur alongside the river. Beech tends to be concentrated on the upper slopes alongside the bridleway and sycamore on the middle and lower slopes. Spruce is scattered throughout but has been much reduced in number through recent thinning. Under the power line occurs a dense stand of young regeneration dominated by birch but including oak, beech and sycamore, some of which is occurring as coppice re-growth from old stumps. The understory is generally sparse but includes holly and the regeneration of beech, birch and oak. Hazel also occurs, particularly along the north bank of the river. Buckler ferns dominate the field layer, though some bracken occurs alongside the bridleway where conditions are more open. Bramble is also present in less shaded areas, along with bilberry and wood sorrel, whilst ramsons dominate the field layer along parts of the riverbank.

1c	4.84	Norway spruce	1967	High forest	Landscape factors, Legal issues, Mostly wet ground/exposed site, People issues (+tve & -tve), Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Planted Ancient Woodland Site	County Wildlife Site (includes SNCI, SINC etc), Planted Ancient Woodland Site
<p>Sub-cpt 1c lies at the western end of the wood between the two bridleways that form its northern and western boundaries. Covering 4.84 ha, it occupies a west-facing slope that is steep at its eastern side but becomes more level to the west. Along the top of the steep eastern slope the ground is pitted by old quarry works, creating some quite large hollows. Several large veteran beech trees still survive along the southern half of this boundary. Spruce and Scots pine dominates 1c but a significant element of beech is also present in the canopy. Oak and larch are present in much lesser amounts and a small amount of birch has also colonised the area where the canopy is more open. Spruce tends to be more concentrated in the centre of the sub-cpt and Scots pine towards the northeast end but overall the trees form an intimate mixture. Some beech and oak regeneration occur but where an understory of any substance exists, this is made up of holly, which in places forms dense stands. Under the Scots pine at the northeast end of 1c some of the holly is reaching the size of small trees. Buckler ferns once more appear to dominate the field layer, followed by bramble. However, a wider range of species still appear to be present, including gorse, heather, bilberry, wood sorrel, rushes, grasses and mosses. Bracken is confined to the margins along the bridleways.</p>							
1d	3.38	other oak spp	1967	High forest	Landscape factors, Legal issues, Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Planted Ancient Woodland Site	County Wildlife Site (includes SNCI, SINC etc), Planted Ancient Woodland Site

Sub-cpt 1d (know as Holburn Wood) covers an area of 3.38 ha at the western end of Ragpath Wood. It occupies the slopes of a small stream valley through which Holburn Beck flows northwest into the River Deerness. The soil here appear to be more clayey than on other parts of Ragpath and parts of the upper slope along the southeast side of the sub-cpt are wet and boggy in places where a small tributary of Holburn Beck flows across the slope and down to join the beck. The canopy consists of an intimate mix of broadleaves consisting of beech, oak, sycamore and birch, along with the odd ash, aspen and other poplars along the beck side. Although most conifers were removed during thinning in 2003, the odd spruce, larch and Scots pine still remain, particularly along the western boundary of sub-cpt 1d. Sycamore tends to occur in greater concentration at the northern end of the wood around the stream and birch on the top of the slope to the east. Because of the higher proportion of oak in 1d (20%) it is assumed that this species was planted here where in other sub-cpts it probably regenerated naturally. Tree ring counting suggests the trees were planted around 1967. Holly is once more the dominant understory species, though occasional oak and beech regeneration and the odd hazel are also present. The field layer consists of the usual mix of buckler ferns and bramble, though hard fern and rushes also occur in damper areas and bilberry and wood sorrel in drier ones.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2018	1a	Thin	8.20	24	200
2018	1b	Thin	18.60	27	500
2022	1a	Thin	8.20	12	100
2022	1b	Thin	18.60	16	300

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.