WOODLAND TRUST

Riverside North

Management Plan 2015-2020

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MAPS

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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®) under licence FSC-C009406 and 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:	Riverside North
Location:	Washington
Grid reference:	NZ324553, OS 1:50,000 Sheet No. 88
Area:	10.20 hectares (25.20 acres)
Designations:	Ancient Semi Natural Woodland, Community Forest, Identified as IWS in the Tyne & Wear Nature Conservation Strategy, Tourism Restraint Area

2.0 SITE DESCRIPTION

2.1 Summary Description

The Riverside North Woods consist of High Barmston, Jubilee Terrace and Victoria Bridge woods. Because of the C2C cycle route, the River Wear Trail and their riverside location, these woods are very popular with locals and visitors alike.

2.2 Extended Description

The Riverside North Woods consist of three properties located alongside the River Wear in James Steel Park, Washington, Tyne & Wear that were giving to the Woodland Trust in October 1987 by the Washington Development Corporation. All have been planted or are growing on land that has suffered considerable disturbance in the past, either containing buildings or other structures, or have been used for tipping, quarrying or other industrial uses. All three lie within the former Great North Forest and a strategic wildlife corridor and are important both as woodland habitat/landscape features and for public access. Both High Barmston and Jubilee Terrace are identified as Important Wildlife Sites in the Tyne & Wear Nature Conservation Strategy.

High Barmston Wood (Cpt 1) covers 5.38 ha located next to Barmston Ferry (NZ 326 554) and consists of a strip of older woodland growing on the steep slopes alongside the river with mixed and broadleaved plantings dating from the mid 1960s to the mid 1980s growing on level ground mid slope and along the upper slopes. The wood is bound by the River Wear to the south and new residential housing to the north with semi-improved grazing land to the east and amenity grassland and public highway to the west. A bridleway runs through the wood and forms part of the C2C national cycle route and also the River Wear Trail.

Jubilee Terrace Wood (Cpt 2) forms a small strip (0.45 ha) of mainly broadleaved woodland growing on a bank between the minor road leading to Jubilee Terrace and rough grazing land to the northwest (NZ 324 551). Glebe House Farm lies at its northeast end whilst broadleaved woodland continues beyond its southwest boundary. The site was planted between 1975 and 1977 with broadleaves and conifers but most of the latter were removed when the site was thinned in 1996.

Victoria Bridge Wood (Cpt 3) stretches for 4.66 ha alongside the River Wear from Jubilee Terrace to the east to Victoria Viaduct to the west (NZ 321 549). The C2C cycle route runs along the outside of its northern boundary, beyond which lies more mixed woodland, a lake and open grassland forming part of The James Steel Riverside Park. As with High Barmston, Victoria Bridge Wood consists of a core of existing broadleaved woodland, extended to the west and northwest in 1981 with mixed plantings. The construction of a storm drain through the northeast end of the wood in1998 created a new sub-cpt planted with shrubs, to the east of which lie on open ground and naturally regenerated gorse/scrub and ash woodland.

The woods contain few permissive paths but a number of public rights of way pass through and around them, so public access is readily available. Because of the C2C cycle route, the River Wear Trail and the woods' location in a public park, they are extremely well used both by local people and others from further away. Management access to the woods with vehicles is taken directly off the public highway onto the bridleway at the western end of High Barmston and is available as far as Victoria Bridge House when travelling from South View in Fatfield. Jubilee Terrace has roadside frontage along the whole of its southern boundary.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

All three woods can be reached by on foot by following the riverside path south-westwards from the Washington Waterfowl Park or north-eastwards from Fatfield. The woods can also be reached on foot from the southern riverbank by using the footbridge at Cox Green to cross the river to Barmston Ferry. The C2C cycle route passes through High Barmston Wood and consists of a tarmac track with open entrances with no access furniture (except a bollard at the western entrance to prevent cars entering the wood). It mostly occupies level ground except for gentle slopes at its northeast and western ends.

Jubilee Terrace Wood is a roadside verge with no paths in it. Victoria Bridge Wood has a level but unsurfaced riverside path running along the bottom of the wood with a stile at its northeast end by Jubilee Terrace but no paths exist within it because of the steep slopes. A semi-metalled path cuts through the wood to link the riverside path with the tarmac C2C route that runs along the top of the wood.

To reach the woods by car, follow the A195 eastwards from the A1(M) turning right at the roundabout signposted to the Washington Waterfowl Park into Pattinson Road. At the next roundabout, turn right again into Staithes Road and follow this down to Barmston Ferry by turning left at the bend at the bottom of Staithes Road. Free car parking is available next to the footbridge at Barmston Ferry. Another small free public car park is also available off the minor road leading down past Jubilee Terrace Wood. Vehicle access is also available from Fatfield in Washington by following the minor road leading on from South View north-eastwards. Parking is available in the public lay-by just south of Victoria Viaduct.

For visitors wishing to reach the wood by public transport, a bus stop is located on Pattinson Road about 10-15 minutes walk from the woods.

For those needing public conveniences, public toilets can be found in Fatfield on Bonemill Lane next to the Biddick Inn public house near the junction of Bonemill Lane with Worm Hill Terrace or at The Galleries shopping centre off the Washington Highway. Three RADAR toilets are located in Washington at the following locations: Concord Centre Bus Station, Sir William de Wessyngton (Wetherspoons) during trading hours and at the Gala Bingo Club, The Galleries (club hours).

3.2 Access / Walks

4.0 LONG TERM POLICY

To maintain predominantly broadleaved high forest woodland across all three woods in perpetuity. Future selective thinning will favour native species but will not attempt to eradicate non-natives. Some non-natives (including conifers) will be retained, either because in some areas too few natives exist to replace them or because they are in sub-cpts to be managed on minimal intervention principles. Whatever the reason, over the long-term, non-natives will form no more than approximately 30% of the collective stocking of these woods. Thinning will also break up the canopy to promote regeneration of the understorey and the next generation of canopy trees, thus providing greater structural diversity through encouraging a wider age class distribution to form. Public access to the woods at the current level of provision will be maintained in the future, helping to achieve the Trust's corporate objective of increasing enjoyment 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

All three Riverside North Woods lie in The James Steel Park alongside the River Wear. The national cycle route known as the C2C passes through High Barmston Wood, alongside Jubilee Terrace and along the northern boundary of Victoria Bridge Wood, whilst the River Wear Trail also passes through High Barmston and Victoria Bridge Wood. A permissive footpath running north south through Victoria Bridge Wood links the River Wear Trail and the C2C and also provides access to the wider rights of way network across The James Steel Park to the north. Given the topography and nature of these sites, few permissive paths exist, although the woods are well serviced by public rights of way. The small size of Jubilee Terrace limits its use for public access, although children do play there. High Barmston has some informal permissive footpaths linking into the main bridleway (route of the C2C) and providing access to the wood from the north and northwest.

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 of woodland. This is particularly significant at the Riverside North Woods that, besides being located in a recreational park (The James Steel Park), are also associated with the C2C cycleway and the River Wear Trail, both important recreational features.

Opportunities & Constraints

Individually, the small size of these woods limits the scope of recreational opportunities they can provide. However, because they lie so close together and are linked by the public highway and other formal rights of way, their collective area can provide an interesting woodland walk. For people travelling to the woods by car, a good-sized public car park exists at Barmston Ferry, next to High Barmston Wood, from where all three woods are easily accessible. A second smaller public car park is also available off the minor road leading down from Glebe House Farm to Jubilee Terrace. Due to the potentially hazardous nature of parts of High Barmston, the small size of Jubilee Terrace and the general topography of all three woods, opportunities for creating more permissive access is limited. However, because the woods are well provisioned with public rights of way, the need to create more access is largely unnecessary.

Factors Causing Change

None identified at this time.

Long term Objective (50 years+)

To maintain the current level and standard of public access provision to the woods into the future.

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

All 10 formal entrances to the woods and maintained paths within them will be inspected by the site manager once every 5 years to ensure they are maintained in a safe and serviceable condition for use by the public. Before the end of 2017, an entrance audit survey will be completed and any necessary entrance improvements identified carried out by the end of 2018. Public safety will also be protected by carrying out tree safety surveys on trees alongside paths and roads at least once in every 5 year plan period and by maintaining a site risk assessment of all known hazards within the woods and carrying out any necessary work identified in order to minimise the dangers these present to visitors and neighbours.

5.2 Secondary Woodland

Description

The three Riverside North Woods collectively make up 10.49 ha of secondary, predominantly broadleaved, woodland located on the northern bank of the River Wear between Barmston Ferry and Victoria Viaduct in Washington. They consist of a mix of older mature broadleaved woodland and recent plantations on ground much disturbed by buildings and industrial use in the past. It is probable that sub-cpt 3d in Victoria Bridge Wood is degraded Semi-Natural Ancient Woodland (ASNW), or at least an Ancient Woodland Site (AWS). However, it is not recorded as such on English Nature's Ancient Woodland Inventory.

Significance

The fact that the Riverside North Woods consist predominantly of broadleaved woodland makes them important habitat in their own right, given the significant loss in broadleaved woodland since the beginning of the 20th century. This importance as habitat is confirmed by High Barmston and Jubilee Terrace both being identified as Important Wildlife Sites in the Tyne & Wear Nature Conservation Strategy and all three woods being located in a Strategic Wildlife Corridor. They also important as landscape features within the river valley and in forming part of The James Steel Park and the Great North Forest.

Opportunities & Constraints

The presence of an asbestos tip under parts of High Barmston does require parts of the wood be left largely unmanaged to minimise disturbance and to retain dense vegetation cover to restrict access. The presence of important recreational routes through and around these woods also adds complications to carrying out silvicultural operations, although the high density of well surfaced paths and tracks associated with these does also provide good access to most parts of the woods.

Factors Causing Change

Unauthorised tree felling (Jubilee Terrace), Fly tipping (Jubilee Terrace), Encroachment (Jubilee Terrace), Noxious weed invasion, Riverbank erosion (Victoria Bridge)

Long term Objective (50 years+)

To maintain predominantly broadleaved high forest woodland across all three Riverside North Woods in perpetuity. Although non-native and locally non-native broadleaves as well as a small amount of conifers will always form part of each wood, future silvicultural operations will favour native broadleaves over these so that, over the long-term, the proportion of native species will increase.

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

During 2014, the potential thinning of sub-cpts 3e and part of 3d was reviewed. With ash being the dominant canopy species and ash die-back being a current serious threat, no thinning will take place during this plan period to allow time for a better understanding of the consequences of this disease to be established. The need for thinning will be reassessed again in 2019. An inspection for noxious weeds will be carried out once every 2 years and any control required carried out. Periodic inspections of carried out as part of the Secondary Woodland monitoring will also monitor activities in Jubilee Terrace to ensure no further illegal felling or fly-tipping occurs and if problems are found, these will be taken up with the neighbour and the Trust's legal team.

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	1.22	Mixed broadleaves	1975	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
Sub-cpt 1a occupies an area of mostly disturbed ground at the east end of High Barmston Wood that slopes gently down to the River Wear. The east side of 1a was planted on pastureland consisting of clay-loam soils that become wet at the bottom of the slope around the small watercourse. A path runs northeastwards through the sub-cpt terminating in a small glade. Most of1a consists of middle-aged plantations but some mature trees are also present. Mature sycamore exists along the small gully in the western end of the sub-cpt surrounded by semi-mature broadleaves planted in 1973/74. This area suffered from a series of fires during the 1970s and 80s and was beaten-up for several years. The middle part of 1a, containing the remains of High Barmston Farm, was planted in 1976/77 and the eastern end in 1974/75. All planting was carried out by Northern Forestry Products Ltd at 5 x 5 foot (1.5 m) spacing and consisted of mixed plantings of pedunculate oak, red oak, ash, beech, grey alder, common alder, silver birch, wild cherry and sycamore with Scots pine, Corsican pine, Sitka spruce and larch. The conifers were removed during thinning operations in 1996 and 1997 and the plantation areas now consist of mixed broadleaves dominated by sycamore, alder and ash. In the southeast corner of 1a mature white willow and poplar occur that probably date back to the time of the farm. A scattered understorey has developed in which hawthorn and sycamore are frequent but oak, ash, hazel and the odd rose species also occurs. The field layer is typical for disturbed ground and consists of grasses, nettles, common cleavers, ivy and umbellifers. Snowberry forms a short stretch of hedge alongside the southern boundary path and probably represents a remnant of the farm garden.							
1b	1.54	Mixed broadleaves	1900	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area

Sub-cpt 1b forms probably the oldest part of the wood and mostly occupies the steep slope down to the river's edge south of the bridleway. As on other areas of High Barmston, parts of 1b have been subject to considerable disturbance, such as at its western end where a number of structures once stood. At its eastern end the riverbank is open but as you move westwards two hollow sycamores stand near the path close to the snowberry hedge in sub-cpt 1a and probably formed part of the immediate farm landscape, along with a mature weeping willow close by. Otherwise tree cover consists of areas of hawthorn scrub with sycamore dominating the eastern half of the sub-cpt and ash the west. Some oak and willow grow on the lower slope near the river. Where an understorey occurs, this is generally hawthorn with elder and some sycamore regeneration. The field layer, as on other parts of the site, is generally poor, consisting of grasses, nettle, garlic mustard, ivy, cleavers, umbellifers, etc. Some open ground in the form of small glades occurs alongside the bridleway but are floristically uninteresting.							
1c	0.72	Mixed broadleaves	1980	High forest	Housing/infrastructure, structures & water features on or adjacent to site	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
Sub-cpt 1c forms a strip of dense young plantation along the upper slope in the middle of the wood. This part of the site occupies an old asbestos heap covered with a deposit of loamy topsoil and was planted in 1980/81 by Washington Development Corporation at 1.5 m spacing with pedunculate oak, common alder, grey alder, ash, beech, silver birch, hawthorn, larch, yew, Scots and Corsican pine. The bulk of 1c (to the east of the permissive path) was thinned in 1998 and the conifers removed, leaving a canopy of ash, oak and alder with a dense understorey of yew and hawthorn. To the west of the path, pines still dominate the canopy, suppressing the understorey and field layers. However, where a field layer is established, this consists of little more than ivy, grass and nettles.							
1d	0.13	Sycamore	1965	High forest	Landscape factors	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
This small sub-cpt consists of almost a pure stand of semi-mature sycamore growing on an area of level ground. It is believed to have been planted around 1965 and was possibly thinned in 1980/81. During its last thinning in 1997, the understorey was cleared but the occasional hawthorn is once again beginning to emerge. The field layer is typical of disturbed ground: ivy, bramble, garlic mustard, herb Robert and umbellifers.							
1e	0.29	Mixed conifers	1983	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Landscape factors, People issues (+tve & -tve)	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area

Sub-cpt 1e was planted by Northern Forestry Products Ltd at 1.5 m spacing in1983/84 whilst beating-up the adjacent plantations. The area consists of disturbed ground with thin topsoil over clay and part at least probably overlies the old asbestos tip. Species planted include pedunculate oak, beech, wild cherry, rowan, grey alder, ash, Scots pine, larch, Sitka spruce and western red cedar. In 1996, two inspection racks were cut into 1e, one of which has since become the informal permissive path leading up to the northwest corner of the wood. The understorey was cleaned out and the canopy trees thinned to favour broadleaves in 1997. However, the plantings remain mixed with most of the original species still present. A small glade exists at its southern end next to the bridleway along whose eastern edge two mature grey poplars grow.							
1f	0.35	Sycamore	1950	High forest	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve)	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
This sub-cpt occupies a small area of level ground at its northeast end then gently slopes southwest down to the minor road leading to the pumping station. A drainage channel runs southeast along the bottom of the slope from a large concrete pipe culvert but does not contain flowing water. White willow grows alongside this with a scattering of poplar. Sycamore occurs throughout the canopy but dominates on the upper slopes where it is estimated to be around 50 years old, whereas the sycamore, willow and poplar on the lower slope is believed to have been planted around 1965. One or two elms also survive among the canopy. Several coppiced hornbeams grow on the upper slope near the bridleway opposite the grey poplar in sub-cpt 1e and are probably the oldest trees within the sub-cpt, forming part of an earlier landscape. Hawthorn is abundant within the understorey and also forms a hedge alongside the road to the pumping station. Garlic mustard, nettle, bramble and ivy make up the field layer, though under hornbeam coppice some daffodils and wild garlic grow.							
1g	1.01	Mixed broadleaves	1978	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Landscape factors, People issues (+tve & -tve)	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
Sub-cpt 1g is also located on the old asbestos tip that was contoured before covering it with topsoil. Northern Forestry Products Ltd planted the area with trees in 1978/79 at 1.5m spacing and then Washington Development Corporation planted shrubs between these. Tree species planted include pedunculate oak, ash, grey alder, silver birch, yew, Scots and Corsican pine, with beech, western red cedar and larch being added during beat-ups in 1980/81 and 1982/83. The understorey was cleaned out and the canopy trees thinned to favour broadleaves in 1997 so ash, alder and oak now dominate the canopy, though some pines are still present. A good understorey of yew, hawthorn, rowan and rose still exist throughout and underneath this is the usual nettles, bramble, ivy and umbellifers.							

1h	0.12	Mixed broadleaves	1965	High forest	Housing/infrastructure, structures & water features on or adjacent to site, Services & wayleaves	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
Sub-cpt 1h occupies a small finger of land bound on three sides by minor roads and a gappy hawthorn hedge. The land slopes very gently to the northeast and was planted around 1965 with elm, sycamore, alder, willow and birch. The trees were thinned in 1980/81 and again in 1997 and the current canopy consists of alder and sycamore with the odd elm and other acer species. Hawthorn and wych elm form a scattered understorey under which ivy is the dominant ground cover growing along with the ubiquitous nettles, umbellifers and cleavers. A small patch of Japanese knotweed has become established at the southwest corner of 1h where services equipment has recently been installed.							
2a	0.45	Ash	1976	High forest	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve), Services & wayleaves, Site structure, location, natural features & vegetation	Informal Public Access, Secondary Woodland	Community Forest, Other, Tourism Restraint Area
Jubilee Terrace Wood (formally known as Bramlings Bank) forms a narrow woodland strip along the northern side of the minor road from Glebe House Farm to Jubilee Terrace (NZ 3237 5512). The wood occupies a southeast-facing bank consisting of fertile clay-loam and was planted by Northern Forestry Products Ltd between 1975 and 1977 at a spacing of 1.5m. The southwest half of the wood (0.29 ha) was planted first in 75/76 with 650 conifers consisting of Scots pine, Sitka spruce and hybrid larch, along with 395 broadleaves made up of pedunculate and red oak, ash and beech. The rest of the wood was planted with a further 200 conifers and 250 broadleaves in the following year, consisting of the same species mix, except grey alder was used instead of red oak. All the plantings suffered from severe weed competition, resulting in large beat-ups in subsequent years until 82/83. To try and overcome the weed problem, 100 large pot-grown pedunculate oaks were included in the beat-up for 79/80 and 168 pot-grown oak, ash and beech in 82/83. Today, following thinning in 1996, the canopy of Jubilee Terrace is dominated by ash with only a scattering of other broadleaved species, mainly pedunculate oak, birch and the odd beech. Hawthorn forms a small area of canopy in the middle part of the wood and forms the understorey through the rest of the wood, along with elder, oak and the odd elm. The conifer element of the plantings has all but disappeared, represented by the odd Scots pine and spruce. The field layer is generally poor, consisting mostly of brambles, nettles and ivy. At the northeast end of the wood, the owner of Glebe House Farm has cleared the roadside verge and replanted it with mixed shrubs.							

3a	0.59	Ash	1950	High forest	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve), Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Secondary Woodland	Community Forest, Tourism Restraint Area
Most of 3a is located on steep southeast-facing slopes above the public footpath at the northeast end of Victoria Bridge Wood. As with all the Riverside North Woods, 3a is situated on disturbed land and consists of a mix of hawthorn scrub and ash woodland with a ground cover of grasses, brambles and umbellifers. The occasional oak and sycamore also occurs in the canopy but the woodland cover is generally species poor. Although some form of wood has existed across 3a since at least the middle of the 19th century, the present woodland cover is probably less than 100 years old. In 1996, three small areas of hawthorn were coppiced to try and add some structural diversity to this area. A public footpath, forming part of the River Wear Trail passes east west through the bottom of 3a and continues through sub-cpts 3c and 3d.							
3b	0.47	Other	1970	Min-intervention	Landscape factors, Mostly wet ground/exposed site, People issues (+tve & -tve)	Informal Public Access, Secondary Woodland	Community Forest, Tourism Restraint Area
This is an area of extensively disturbed ground that was once used as a quarry or clay pit and from where a tunnel ran down to the river. The northern end of 3b consists of 0.2 ha of open ground colonised by coarse grasses, thistles, docks, etc, with a gappy hawthorn hedge running along its northern boundary next to the path. During the 1980s, a number of standard trees were planted to the east and west of this area and five cherry trees still survive along the boundary between sub-cpts 3b and 3c. The southern part of 3b consists of dense gorse scrub and hawthorn that has regenerated naturally over the last 20 to 30 years.							
3c	0.25	Woody shrubs	1998	Min-intervention	Mostly wet ground/exposed site, Services & wayleaves	Informal Public Access, Secondary Woodland	Community Forest, Tourism Restraint Area

This sub-cpt was created in1998 when a storm drain for the new ASDA warehouse was constructed through the wood. The drain easement was planted at the end of 1998 with 300 shrubs at 2.5m spacing by the developer using predominantly 1+1 40-60 cm transplants. Species planted include hazel (60), dogwood (60), common hawthorn (80), dog rose (60), blackthorn (20) and holly (20). Dogwood was planted on the lower slope; otherwise species were randomly mixed in block of 3 to 5 plants. The plantings were supposed to be maintained for five years but unfortunately this failed to happen and although a number of shrubs still survive, their rate of growth is generally very poor. Gorse is beginning to colonise the area along with rush, whilst a small stand of pole stage sycamore and some hawthorn is growing at the northern end of the easement. Four manholes exist along the length of the drain easement.							
3d	2.11	Mixed broadleaves	1850	High forest	Housing/infrastructure, structures & water features on or adjacent to site, People issues (+tve & -tve), Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access, Secondary Woodland	Community Forest, Tourism Restraint Area
Sub-cpt 3d consists predominantly of mature oak woodland growing on a southeast-facing slope on sandy to clay loams. The canopy also contains some large old beech as well as odd bits of wych elm, sycamore and birch and has probably existed on site since about the mid 19th century. The sub-cpt was selectively thinned during 1981 to remove dead elms and open up the canopy for underplanting. This was carried out in 1981/82 by the Washington Development Corporation at 1.5 m spacing using pedunculate oak, beech, ash, silver birch, rowan, larch, Scots pine, Sitka spruce and western red cedar, with grey alder, wild cherry, yew and Corsican pine being added between 1983 and 1987 during beating-up. These plantings suffered extensive damage from sheep incursions until the fence was reinforced in 1986. The understorey was re-spaced in 1997 to favour broadleaves though a scattering of suppressed spruce still exist here and there. A narrow strip young broadleaves exists along the northern boundary planted in 1981 at the same time as sub-cpt 3e and consists of ash, silver birch, wild cherry, rowan, etc., behind a hawthorn hedge that runs along this boundary. The field layer in 3d is generally more interesting than in other parts of the wood and does contain some bluebell, wood anemone and dog's mercury, etc., but is still generally quite degraded and not of great interest. The public footpath running through sub-cpts 3a and 3c continues through 3d and out under Victoria Viaduct whilst a tarmac surfaced permissive path runs north south through the western end of the wood.							
3e	1.24	Mixed broadleaves	1981	High forest	Housing/infrastructure, structures & water features on or adjacent to site, No/poor vehicular access to the site	Informal Public Access, Secondary Woodland	Community Forest, Tourism Restraint Area

Sub-cpt 3e is an extension of Victoria Bridge Wood located on mostly level ground at the top of the wood at its southwest end adjacent to the railway embankment. It was planted in 1981 by Northern Forestry Products Ltd at 1.5m spacing on disturbed land consisting of clay to clay-loam with little topsoil. Species planted include: pedunculate oak, beech, ash, silver birch and Scots pine, with grey alder, common alder, wild cherry, rowan, larch, Sitka spruce and Corsican pine added during subsequent beat-ups between 1982 and 1987. The conifer element of these plantings was removed during thinning in 1996 and the canopy now consists of mixed broadleaves with a scattered understorey of hawthorn, oak, elder and hazel. Ground flora consists of the usual mix of grass, brambles and umbellifers, etc. The tarmac footpath running north south through the wood passes through the northeast end of 3e, whilst the C2C route runs along the outside of the northern boundary.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2018	3d	Selective Fell	0.50	40	20
2018	3e	Selective Fell	0.10	50	5
2020	3e	Thin	1.24	50	62
2022	1b	Selective Fell	0.20	75	15
2022	2a	Clear Fell	0.40	138	55
2022	3a	Selective Fell	0.20	50	10
2022	3d	Selective Fell	0.10	100	10

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.