WOODLAND TRUST

# Reffley Wood

# Management Plan 2018-2023

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:** | Reffley Wood |
| **Location:** | King's Lynn |
| **Grid reference:** | TF655218, OS 1:50,000 Sheet No. 132 |
| **Area:** | 52.35 hectares (129.36 acres) |
| **Designations:** | Ancient Woodland Site, Area of Outstanding Natural Beauty, Planted Ancient Woodland Site, Special Landscape Area, Tree Preservation Order |

## 2.0 SITE DESCRIPTION

### 2.1 Summary Description

Reffley Wood is a lovely semi-natural ancient broadleaf woodland interspersed with planted areas of Scot’s pine and other conifer species. Located within the Norfolk Coast Area of Outstanding Natural Beauty, it has been designated as a County Wildlife Site due to the wide variety of species which make their home here.

## 2.2 Extended Description

Reffley Wood is a 52 hectare semi-natural ancient woodland and old growth site that was cleared of most of its veteran trees and stocked with Scots and Corsican pines, with also a small percentage of Douglas fir in the 1950s and 60s. Throughout Reffley wood there is direct evidence through previous surveys that the wood was at least part woodland pasture/ old growth site, with the whole site originally containing many veteran trees and pollards. There still remains 26 of these veterans throughout the whole wood that survived the conversion to coniferous woodland. Unfortunately the majority of veterans throughout the wood were felled during this period and left where they once stood.

There are natural two types of woodland situated within the site that reflect the soil structure within the wood - an oak/ash/field maple mix on the wetter clay to the south where Scot's pine has generally been planted and an oak/birch mix on the lighter sandier soils to the north where Corsican pine has been planted. The areas of woodland situated on the wetter clay soils tend to have a greater diversity of ground flora with many ancient woodland indicator species, such as Dogs mercury, primrose, yellow archangel, bluebell and early purple orchid. Whilst within the areas where the soils are sandier the ground flora is less diverse, dominated by bracken with isolated ancient woodland remnants comprising of mainly bluebell and some scattered primrose and dogs mercury.

Reffley woodland is situated on the edge of King’s Lynn in South Wootton and is an important site for public access. There are currently four official access points to the site situated to the North off Sandy Lane, and to the west off Barsham drive and to the south of Redfern close near Black Drain. The wood has an extensive and well used path network throughout the site. There is currently provision for 2 cars to park at the main entrance on Sandy lane, but due to the restricted parking the Woodland Trust asks visitors not to park along Sandy Lane.

Key Features:
F1 Planted Ancient Woodland Site.
F2 Old Growth Stand.
F3 Informal Public Access.

# 3.0 PUBLIC ACCESS INFORMATION

## 3.1 Getting there

By bus:

There are two routes operated by First Bus (www.firstgroup.com):

41 from King's Lynn to Hunstanton via Castle Rising and Sandringham
41A from King's Lynn to Hunstanton via Castle Rising

By train:

The nearest railway station is in King's Lynn.

For further information on public transport, contact Traveline on 0871 200 2233 or visit traveline.org.uk

By car:

The main access to the wood is off Sandy Lane via Grimston Road (A148) to the north, or Queen Elizabeth Way (A149) to the east. There is a small car park suitable for two cars at the wood entrance.

The wood is also accessible on foot, with an entrance located at the far end of Sandy Lane and one at the end of Peckover Way.

## 3.2 Access / Walks

The wood has five pedestrian entrances, four of which are linked to an adjoining housing estate.

The main entrance is at Sandy Lane, off Grimston Road, from where you can follow any one of a network of pathways through the wood. There is a 1km (just over half a mile) circular walk, as well as a longer route of about 3km (almost two miles) , but the number of different paths means you can make your own way through the trees on the woodland trails.

The site is generally flat, and many of the paths are dry and accessible all year round, though some can be rather wet and muddy during the colder months. Care should be taken if you're exploring the woods during the winter – even on the boardwalk-covered sections.

Recommended walk:

1. Starting at the entrance to the wood, go through the gate and follow the well-defined track straight on. After around 0.5km (a third of a mile) the track becomes grassy and you will reach a junction. Turn left following the path round to the boardwalk.
2. Walk along the boardwalk and at the end, turn left.
3. The path opens out to a sandy clearing. Bear slightly right and then bear left at the fork, following the path straight ahead rather than the sandy path to your right.
4. You will reach a way-marker post. Turn left here, and follow the path as it winds back to the main track.
5. Turn right on to the main track and then you are back at your starting point.

# 4.0 LONG TERM POLICY

Ancient woodland restoration

The long term intention for Reffley wood is to stabilise and develop the ancient woodland remnant ground flora, trees and natural regeneration, whilst reducing the localised coniferous dominance. This will be achieved by gradually removing the conifers species through low impact thinning from the areas of planted ancient woodland (PAWS). Once the conifer dominance has been reduced to where it does not affect the remaining ancient woodland components the long term policy will be to continue to manipulate the woodland canopy to create favourable conditions to allow Natural broadleaf regeneration and the ancient woodland ground flora to develop.

Bracken within the wood is a significant restrictive factor to the development of natural regeneration within the sandier sections of Reffley wood. The long term intention will be to continue to manage the bracken to reduce the brackens density and allow the promotion of natural regeneration and native ground flora.

The eventual desired condition of Reffley wood will be a robust multi-structured and multi-aged native broadleaved dominated high forest woodland, with a abundant native ground flora and a good deadwood component.

With ash dieback being present within Reffley wood there will be a decline in the overall health of main native broadleaf species within the wood. The long term intention will be to manage the decline of the common ash within the wood and help promote other natural regeneration of other native broadleaved species, and continue developing a multi-structured diverse high forest canopy.

Old growth and veteran trees

With Reffley wood having historically been managed as wood pasture/old growth it is important to maintain the remaining trees that are in excess of 200 hundred years old and develop new specimens that will eventually replace the remnant veterans. The management regime will aim to monitor, maintain and undertake any required work to the existing old growth remnants, whilst promoting existing mature trees to become future old growth veterans and maintain old growth within Reffley wood.

Public access

The intention will be to maintain and improve the current ride system to continue to develop the floristically diverse ride system whilst, maintaining a sustainable level of use by maintaining the access features appropriately. The long-term management will not create new paths, but will concentrate on maintaining the existing paths, entrances and internal infrastructure.

# 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 Planted Ancient Woodland Site

### Description

Reffley is a structurally diverse planted ancient woodland site that has is currently in the process of restoration covering
52.35 hectares. Prior to having conifers planted Reffley wood was thought to of been predominantly remnant wood pasture with many ancient pollards and veteran trees throughout. During the 1950's and early 1960's the site was cleared and Scots pine, Corsican pine and Douglas fir planted throughout the wood. There are also several areas of non-native broadleaved compartments.

Reffley wood covers a number of different soil types within its boundary. From heavy clay soils through to sandy acidic soils. There are three different NVC woodland classifications designated within Reffley wood indicative all soils types present.

W8- Common ash – Field maple – Dogs mercury woodland
W10 - Oak – Bracken – Bramble woodland
W16 - Oak – Birch – Deschampsia flexuosa (wavy hair-grass)

Through the restoration process the remnant ancient woodland components and natural regeneration will create structurally diverse woodland. Despite heavy shading from the conifers, there are still ground flora remnants in places, being characteristic of ancient woodland in East Anglia, and has responded positively to the restoration work.

### Significance

Nationally Ancient woodland is a scarce resource, making Reffley wood of regional importance. With Reffley wood being situated adjacent to Kings Lynn and being of a reasonable size, makes it very significant in contributing to the biodiversity value of the local area.

### Opportunities & Constraints

Opportunities:
Conserve and develop the existing ancient woodland components.
Gradually reduce the remaining coniferous element and increase natural regeneration and ground flora
Seek to buffer / influencing neighbouring landowners

Constraints:
High deer pressure, causing heavy grazing on ground flora and natural regeneration.
Ash Dieback causing common ash to decline within the wood, which is the native main species within the clay soil areas situated to the southern end of the site, and produces the highest proportion of natural native tree regeneration.

## Factors Causing Change

Deer Damage, Ash Dieback.

## Long term Objective (50 years+)

To reduce the current dominance of the planted conifer species and securing and developing the remnant ancient woodland components within Reffley wood. Eventually creating diverse multi-structure broadleaved woodland with abundant understory, deadwood structure and ancient woodland ground flora.

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

Maintain and develop the ancient woodland characteristics of Reffley wood by gradually thinning the remaining pockets of shade dominant conifers and managing light levels of the existing restored broadleaved dominated areas of Reffley wood to support development of existing and diverse regeneration where it already exists. This will help to develop a diverse variety of tree species within the wood to make it more resilient to external pathogenic threats, such as Ash Dieback.

To implement this on the ground, measures can be undertaken to assess and then focus on the most important areas of natural regeneration diverse regeneration that contains a variety of species. Through Regular monitoring utilising the paws and woodland condition assessments to update the restoration plan as the site changes and develops. Any thinning works undertaken will be low key and focused in areas to best support the promotion of diverse regeneration. Thinning locations will be in response to observations from the ancient woodland restoration survey and the condition assessment, which will be revised every 5 years with the management plan revision.

Annual deer monitoring will take place to obtain the extent of the current deer pressure within the wood, within the condition assessment survey there has been seen for a requirement to control the deer population within Reffley wood due to significant deer browsing on natural regeneration and ground flora. From May 2016 an annual deer impact assessment will be undertaken within Reffley wood. There will also be 8 deer control plots placed in to the wood to assess the development of tree regeneration and ground flora survival without deer pressure.

We will liaise with the Deer Initiative to develop appropriate deer control measures within Reffley wood to reduce numbers of deer to protect the key ancient woodland ground flora components and developing natural regeneration.

Work Programme

2016 -
• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within Appendix) undertake operation during July.

2017 –
• Undertake thinning operation compartment 1a, 1c, 2a, 2b, 2c, 2e, 2f, 3c and 4a. The thinning operation will encompass both areas of conifer that still require a reduction in canopy shade, whilst compartments 2b, 2c, 2e and 3c contain naturalised non-native tree species, 2b, red oak, 2c and 3c sweet chestnut, and 2e poplar.

Within the conifer areas undertake a 20%-25% thinning operation continue to focus on developing existing remnant broadleaves and natural regeneration by reducing the conifer competition around these areas and through the compartment. Making sure that the thinning operation does no open the canopy significantly. The desired affect will be to have enough light that will promote natural regeneration, but not to allow bracken to significantly begin to dominate the ground layer.

Within the broadleaved compartments to be thinned there is a distinct lack of natural regeneration developing due to shade suppression. Undertake a 25% thinning operation to break up the current single storey canopy and improve light levels to promote natural regeneration and eventually increase structural diversity within these areas. Any native broadleaves should be favoured for retention

Within compartments that are to be thinned that are adjacent to the residential boundary the thinning operation will look at thinning the edge boundary trees to a higher percentage to reduce potential tree safety operations. Along the western boundary (compartment1a) there is a high proportion of ash along the boundary.

• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within Appendix) undertake operation during July.

2018 -
• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within Appendix) undertake operation during July.

2019 –
• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within

Appendix) undertake operation during July.

2021 –
• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within Appendix) undertake operation during July.
2021 –

• Undertake thinning operation compartment 3b, 3d, and 5b. The thinning operation will encompass both areas of conifer that still require a reduction in canopy shade,

Within the conifer areas undertake a 20%-25% thinning operation continue to focus on developing existing remnant broadleaves and natural regeneration by reducing the conifer competition around these areas and through the compartment. Making sure that the thinning operation does no open the canopy significantly. The desired affect will be to have enough light that will promote natural regeneration, but not to allow bracken to significantly begin to dominate the ground layer.

• Undertake deer impact assessment to monitor the extent of deer damage to the ancient woodland components with Reffley wood. Undertake operation during May.

• Undertake bracken rolling to reduce density of bracken thatch. (Please see attached map within Appendix) undertake operation during July.

## 5.2 Old Growth Stand

### Description

Within Reffley wood there are a number of ancient pollards and veteran trees surviving from when the site was cleared and planted with conifers. Most of the veteran trees were surveyed and recorded in 2004 with 23 live specimens being recorded and a further 6 being discovered at a later date. There are currently recorded 52 substantial dead remnant standing or dead felled veterans many of which are still of a great size, and also many smaller remnants of veterans that have now significantly decayed.

### Significance

With old growth woodland there is both historical and landscape value to the local area in which the Reffley is situated.

Many ancient sites have old veteran trees, however few have continuity of old trees in excess of 200yrs old back over generations. Given possible wood pasture history, likely that Reffley has this continuity which as added conservation and biodiversity benefits.

### Opportunities & Constraints

With the existing veteran trees and pollards within Reffley wood it is important that they are conserved and managed as to not increase their demise. Any tree work should be looked at carefully to assess whether it would have a detrimental effect to the veteran trees.

All the existing old growth within Reffley is a focal point for all the community. Unfortunately, in some areas of the woodland this has resulted in the vandalism of the veterans through fire. All veterans should be monitored yearly to assess their general health and safety.

With Reffley wood having a history of old growth woodland it is important to be proactive in the development of the next generation of old growth trees within the site. This will be undertaken in choosing the individual specimens to become veterans and new saplings to be potential pollards.

### Factors Causing Change

Vandalism, Agrilus biguttatus and acute oak decline.

### Long term Objective (50 years+)

To retain and stabilise existing old growth and identify new potential old growth trees to continue continuity within Reffley wood.

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

Monitor existing old growth trees within Reffley wood for health and undertake and potential work that will aid their stabilisation. Annual tree safety inspections to be undertaken to assess tree health for public safety. Employ veteran tree specialist to resurvey each surviving veteran

Promote the development of new future pollards by planting 10 Penduculate oak feathered whips along eastern boundary to become future pollards, and continue the historical continuity of having old growth pollards within the site. During future thinning operations select minimum of 10 individual trees from the existing natural regeneration present as potential candidates for future pollards. Record and map individuals and monitor within the planned period their development.

Work Programme
• Autumn 2017 - Select a minimum of 10 individual trees throughout Reffley wood to become new pollards. The species to be selected will be from the following – Pendunculate oak, field maple, sweet chestnut.
• November 2018 – Plant 10 feathered whips along eastern boundary within natural gaps between existing veterans.

## 5.3 Informal Public Access

### Description

Reffley wood adjoins directly to the urban fringe of kings Lynn and is extensively used by local residents of the neighbouring urban areas. Reffley wood has an extensive ride structure that is cut up to three times annually. There are five pedestrian entrances four of which link to the adjacent housing estate. There are also two management entrance gates situated to the north of the wood. The rides vary in the amount of shade they receive and in width being typically between 2 to 10 m wide. The rides support a diverse variety of flora and fauna including primrose and early purple orchid.

### Significance

The Woodland Trust has an open access policy within the Majority of its woodland sites to allow the public to enjoy informal recreation.
The value of Reffley as an area of open access is apparent by being situated directly adjacent to Kings Lynn.

### Opportunities & Constraints

Being placed adjacent to the urban fringe of kings Lynn, Reffley wood is a vital area of public open space for the neighbouring community to enjoy and utilise for recreation.

With such potential high public pressure on the wood there is reasonable cause for concern that if not properly dealt with high public usage of such a site could have a negative effect on the flora and fauna within the site.

Some Silvicultural management operations are constrained to be undertaken within reasonable working hours due to the potential disturbance caused to the local community.

### Factors Causing Change

Increased public usage, Vandalism

### Long term Objective (50 years+)

Enhance public access and enjoyment of Reffley wood, whilst not reducing the woodlands biodiversity.

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

Maintain Reffley wood as an area of public open access, with the internal ride system cut of 3 times per year to a width of up to 2m, and a final double width cut up to 4m. Maintain the floristic diversity of the current ride system within existing pathway system by cutting to a depth of 5 metres on a 6-8 year rotation with a minimum of 250m of internal rides being coppiced/re-coppiced annually. To create open sunny rides with a good scrub verge between the open ride and the woodland that will benefit both pedestrian users and wildlife.

Work Programme
• 2017 – 2021 Undertake a minimum of 250m of ride side coppicing along main rides annually during October-December. Cut back up to 5 metres from ride edge with all coppice waste to be stacked neatly at the back of the cut coppice area at the woodland edge. All work will be identified annually.

• 2016 – 2021 Annual path cutting May, June, July, August 1.5 m path cut in centre of ride. September final full width up to 4m path cut.

# 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 | 7.10 | Scots pine | 1958 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Planted with Corsican and Scot's pine in. Ash, oak and elm regeneration with Hazel field maple, hawthorn and blackthorn understorey with dog's mercury at ground level. Interspersed through out compartment lying deadwood present | | | | | | | |
| 1b | 5.74 | Scots pine | 1971 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Planted with Scot's pine, ash, oak and elm regeneration with Hazel field maple, hawthorn and blackthorn understorey with dog's mercury, blue bells and primrose interspersed within the ground flora. Interspersed through out compartment lying deadwood present. | | | | | | | |
| 1c | 2.90 | Corsican pine | 1970 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Planted with Corsican, ash, oak and elm regeneration with Hazel field maple, hawthorn and blackthorn understorey with dog's mercury, blue bells and early purple orchids and primrose interspersed within the ground flora. Interspersed through out compartment lying deadwood present. | | | | | | | |

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| 2a | 1.08 | Scots pine | 1958 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Planted with Scot's pine. Sparse ash oak regeneration with a sparse understorey of rowan, hazel and elder. Bracken and bramble ground cover. Sub compartment contains one mature ash and an ancient oak pollard. There is also low ridge running east west through southern part of compartment. | | | | | | | |
| 2b | 2.82 | Red oak | 1958 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Red oak, larch interspersed within compartment. Bracken and some bramble in understorey with occasional hazel. | | | | | | | |
| 2c | 0.92 | other poplar spp | 1993 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Poplar felled in 1993. Regrowth has been multi-stemmed and will be maintained through coppicing. Dense areas of Black thorn within the Northern area of the compartment. | | | | | | | |
| 2d | 1.03 | Corsican pine | 1967 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Scots Pine, oak still present in the canopy. Bracken and bramble in understorey with occasional hazel. Small areas of Dogs Mercury and Bluebells situated in the north-western corner. | | | | | | | |

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| 2e | 1.66 | Sweet chestnut | 1985 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Sweet chestnut planted in 1985. Has been pruned. Only small isolated areas of male fern and ground ivy | | | | | | | |
| 2f | 2.16 | Corsican pine | 1967 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Corsican pine, oak and ash present in the canopy. Bracken and bramble in understorey with occasional hazel. Small patches of bluebells and Dogs Mercury | | | | | | | |
| 3a | 0.70 | Mixed broadleaves | 1940 | Min-intervention | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Mixed broadleaves mainly consisting of oak, ash, sycamore, Norway maple, birch and rowan, with very sparse understory and ground flora. The compartment was one time a small quarry and has created steep sided dell, which is well used by local youths. | | | | | | | |
| 3b | 2.94 | Corsican pine | 1957 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Corsican pine interspersed with some oak remains in the canopy. Sparse understorey of hazel, bracken, bramble and bluebell. | | | | | | | |

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|---|---|---|---|---|---|---|---|
| 3c | 1.43 | Sweet chestnut | 1985 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Sweet chestnut planted in 1985. very spare understorey with small areas of bluebell developing around compartment edges from neighbouring areas and some small isolated areas of male fern and bracken. | | | | | | | |
| 3d | 3.04 | Scots pine | 1967 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Corsican pine planted in 1967. Sparse understorey with some hazel and rowan situated towards the eastern side of the sub compartment. Bracken and bramble the main ground flora with small patches of bluebell situated to the north part of the compartment. Timber loading bay and old fire pond situated within this compartment. Rhododendron present in a small but significant area. | | | | | | | |
| 3e | 1.34 | Ash | 1967 | PAWS restoration | Mostly wet ground/exposed site | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Scot's pine with ash oak and elm regeneration. Understorey dominated by hazel bluebell, primrose and dogs mercury. Through centre of sub-compartment wet area dominated by Alder and silver birch with male ferns intermixed as ground flora | | | | | | | |
| 4a | 2.32 | Scots pine | 1964 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area, Tree Preservation Order |

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|---|---|---|---|---|---|---|---|
| Scot's and Corsican pine. Ancient oak pollards exist on eastern boundary. Few oak present. Bracken and bramble dominate the understorey. Bluebells dominate eastern edge of compartment adjacent to ancient oak pollards. Strip of Sp felled away from ancient pollards. | | | | | | | |
| 4b | 4.59 | Mixed broadleaves | 1996 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Mixed broadleaves, oak, ash, sweet chestnut, rowan, Norway maple and wild cherry planted after Clearfell in 1996 with much natural birch and Scots and Corsican pine regeneration. To the east of the compartment a thin strip of Scots pine shelter belt along the boundary. Only patchy areas bracken and bramble serves as understorey. | | | | | | | |
| 5a | 8.39 | Ash | 1965 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Scot's pine and ash interspersed with oak, field maple and elm with an understorey of hazel, hawthorn and blackthorn, with the ground flora dominated by dog's mercury and ground ivy interspersed with Primrose. | | | | | | | |
| 5b | 2.22 | Douglas fir | 1958 | PAWS restoration | | Informal Public Access, Old Growth Stand, Planted Ancient Woodland Site | Ancient Woodland Site, Area of Outstanding Natural Beauty, Special Landscape Area |
| Douglas fir. Heavy broadleaf regeneration situated to the south of the compartment mainly consisting of ash birch with some oak. Veteran oak situated on southern boundary (See map). Understorey mainly hazel with some hawthorn and black thorn. Towards the southern boundary the ground flora is dominated by Dogs mercury. Towards the north of compartment ground flora changes to bracken and bramble interspersed with male fern. | | | | | | | |

## Appendix 2: Harvesting operations (20 years)

| Forecast Year | Cpt | Operation Type | Work Area (ha) | Estimated vol/ha | Estimated total vol. |
|---|---|---|---|---|---|
| 2018 | 1a | Thin | 7.10 | 37 | 260 |
| 2018 | 1c | Thin | 2.90 | 43 | 124.2 |
| 2018 | 2a | Thin | 1.08 | 46 | 50 |
| 2018 | 2b | Thin | 2.82 | 32 | 90 |
| 2018 | 2c | Thin | 0.92 | 43 | 40 |
| 2018 | 2e | Thin | 1.66 | 30 | 50 |
| 2018 | 2f | Thin | 2.16 | 46 | 99 |
| 2018 | 3c | Thin | 1.43 | 56 | 80 |
| 2018 | 4a | Thin | 2.32 | 43 | 100 |
| 2021 | 3b | Thin | 2.94 | 34 | 100 |
| 2021 | 3d | Thin | 3.04 | 36 | 110 |
| 2021 | 5b | Thin | 2.22 | 27 | 60 |

# 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.