



# Kilmagad Wood

## Management Plan 2016-2021

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## THE WOODLAND TRUST

### INTRODUCTION

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

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

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

### PLAN REVIEW AND UPDATING

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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

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## 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](http://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

<b>Site name:</b>	Kilmagad Wood
<b>Location:</b>	Scotlandwell, Loch Leven
<b>Grid reference:</b>	NO183023, OS 1:50,000 Sheet No. 58
<b>Area:</b>	31.53 hectares (77.91 acres)
<b>Designations:</b>	Area of Landscape Value, Long Established Woodland of Plantation Origin

## 2.0 SITE DESCRIPTION

### 2.1 Summary Description

Kilmagad Wood is predominately mixed broadleaf woodland interspersed with open ground. An ideal habitat for a diverse range of wildlife. Sycamore, beech, birch and oak are the main tree species, along with a scattering of mixed conifers on the higher ground. Wood sorrel and bluebell can be seen in season. This is good walking country. There is good access to the site from the A911. The site has a good network of paths, two of which interlink with the Lomond Hills path network. The site offers superb views across Loch Leven, the Firth of Forth, and the surrounding countryside.

### 2.2 Extended Description

Kilmagad Wood is situated on the south-western flanks of Munduff Hill, at the south-western end of the Lomond Hills. It is a broadly triangular site, wider on the lower slopes and narrowing to a point near the top of the slope. A commercial forestry plantation borders the site to the east and on the lower western slope a golf course, whilst on the upper slopes to the north and west the site is bounded by unimproved hill ground. The wood overlooks the village of Scotlandwell and beyond to the Loch Leven catchments and is visible from a considerable distance. It lies on steep slopes, rising from approximately 100m above sea level at the access point from the A911 road to approximately 340m above sea level at the highest point on the northern boundary of the site.

The underlying rocks of the Lomond Hills present a range of strata as the hill is ascended. The lower slopes consist of sandstones from the Devonian period (old red sandstones) and produce deep, sandy, somewhat acidic soils. At upper levels the Carboniferous 'lower limestone' group is encountered, consisting of calciferous sandstones and thin layers of limestone. These rocks result in a more fertile soil. Apart from the old limestone quarry areas near the top of the site there are no natural outcrops. All the soils are freely draining. Further past the upper slopes of Kilmagad, the tops of the Lomond Hills are capped by a hard layer of quartz dolerite (part of the Midland Sill complex) an igneous rock emplaced near the end of the Carboniferous period. The Lomond Hills are a Geological Conservation Review (GCR) area.

The MLURI climate data describes the Loch Leven catchments as fairly warm moist lowland and foothill that is moderately exposed with moderate winters. However, the slopes of Kilmagad are highly exposed to the south-west.

Kilmagad Wood is highly visible from the surrounding landscape. It consists of approximately 27% mature broadleaved woodland, 28% young broadleaved woodland (established since 1999) and 45% open ground. Historically, a greater area was wooded and the SNH Ancient Woodland Inventory shows the lower slopes as Long Established of Plantation Origin (LEPO) up to between 250-300m elevations. However, the 1st edition OS map (1856) shows the whole site except sub-compartments 1c, 1d, 5a and 5c as woodland (i.e. 80% wooded). The tree species and ground flora in most parts of the site support the LEPO description, although patches of woodrush throughout the site and the presence of wood sorrel and bluebell in the south-eastern parts may hint that parts of the woodland are older. The main tree canopy is currently concentrated on the lower slopes, whilst the eastern and upper parts are more open. The ground vegetation and the remaining scattered mature trees suggest that the central area (compartments 2b and 3c) was wooded until fairly recent times, the woodland having declined through a combination of; natural decline, felling, windblow, loss of elm, previous overgrazing and a lack of subsequent restocking. The remnant trees in this area are generally declining. During the last few years some new planting has taken place within compartments 2b and 3c.

Where there is mature woodland the abundant tree species are sycamore, beech and oak with frequent ash, birch, rowan and hawthorn, and occasional Scots pine, larch and hazel. There is little regeneration, in most areas, most likely due to the density of grass cover and deer browsing. Substantial gorse thickets have colonised some of the disturbed open ground, where new planting has occurred. The ground flora is dominated by grasses, with frequent patches of woodrush in the LEPO area and patches of dense bracken spreading upwards from the lower ground. The NVC classification over most of the site is W10/W11 (grassy birch/oak), with W9 (herb-rich ash/elm/hazel) on richer soils. Natural regeneration is limited over much of the site, due to a combination of dense; grass, gorse and bracken, along with browsing by deer, and occasionally sheep.

To the east of the site, compartments 1c and 1d are shown as open on the earliest maps, and show clear rig and furrow lines. The ground vegetation is dominated by tussock grasses, with frequent healthy species such as heather, blaeberry and heath bedstraw in the drier parts, and rushes and sedges in wetter parts. The eastern side of the site is bounded by a drystone dyke, as is the north-western boundary.

The woodland is important in providing additional habitats on the largely open Lomond Hills and

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shelters a range of small mammals, as well as rabbit, brown hare, roe deer and fox. Birds seen include kestrel, buzzard, wren, tree creeper, skylark, greater spotted and green woodpecker. There is no detailed species list for the site at present. Directly to the north Kilmagad Wood is bordered by the Bishop Hill SSSI, which is notified for its calcareous grassland.

The steeper slopes of Kilmagad Wood are shown as wooded on the first edition OS map (c.1856), and local legend has it that it was planted in the shape of a lion, although this is not currently discernible. From the rig and furrow on the central plateau (cpt 1c/1d) and the abundance of tracks it is clear that the easier slopes were farmed at some point. There are also a number of tracks leading from a limestone quarry near the top of the site to the limekiln on the lower slopes (dates of working are not known). It is also held by local historians' that there was significant felling in WW1 and that the woodland has been in decline for some years. More recently the hill was used as grazing land. The site was purchased in 1998 by the Woodland Trust with assistance from the Scottish office Rural Challenge Fund, Perth and Kinross Council, the Gannochy Trust and the local community. Since then sheep have been excluded and woodland restoration has commenced.

In 2008 the site was extended by the purchase and planting of an additional 4.75ha of land consisting of the two fields (compartments 5a & c) and the LEPO strip cpt 5b. This was strongly supported by the local community and has improved access to the site and local path network as well as providing a focus for schools and community engagement during the initial establishment phase. A small orchard has been established on the site in the last few years, by the Community Woodland Group. The Trust has leased a small rectangular block (no delineation on ground) at the bottom of the woodland strip 5b from the Church of Scotland to assist in the early establishment of the young planting in 5a and c. The lease runs for 10 years from 2010.

The paths through the site are well-used by both local people and visitors, many passing through either to the Lomond Hills or on the Michael Bruce Way (named after a local poet). Indeed the main routes make up all or part of 3 core paths, those being PTMK/5, PTMK 118 and PTMK/120. There are currently 2.79km of maintained path across the hillside, connecting five entrances. The path network passes through; recent planting, mature broadleaved woodland and open ground, and offers spectacular panoramic views across Loch Leven and to the south and west. The northern access point provides a route onto Munduff Hill and the Lomond Hills beyond. From the main road (A911) the entrance is just to the west of the church car park, where parking is permitted. The paths are un-surfaced and often steep in places. Some sections are uneven and may become muddy, after wet weather, despite generally good drainage. The internal path network links well into the path network in the surrounding countryside and includes a 700m section of the Michael Bruce Way, a circular route linking the villages of Scotlandwell and Kinnesswood with the Woodland Trust sites of Kilmagad and Portmoak Moss, which links up with the Loch Leven Heritage Trail at Grahamstone.

Management access to the site was improved by the purchase, in 2008, of cpt 5, which brings the Trust property to the roadside, with gates into both compartments 5a and 5c. A gate on the eastern site boundary provides access from the forest road through Kinnesswood Farm. Access here is by permission from Fountain Forestry, current managers of the block of commercial forestry. A right of access also exists from the west across a grazing field. This may be temporarily upgraded if needed, subject to final reinstatement. ATV's and small tractors are able to access the site. However, steep slopes and uneven ground limits access by larger vehicles in some areas.

The local community raised a substantial sum of money towards the purchase of the wood in 1998,

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and there is now an extremely active Community Woodland Group (CWG) who is also involved in the management of neighbouring Portmoak Moss. The group engage both in management decisions and practical work, and meet once a month, as well as organising activities, events & fundraising. In 2005 they won the WT Scottish Community Group of the Year Award, and in 2014 Kilmagad Wood won the Kinross-shire Civic Trust Environmental Award. This was jointly awarded to the Woodland Trust and Portmoak Community Woodland Group for environmental enhancement in Kinross-shire. The Community Woodland Group plays an important supporting role in helping to manage the site and their views are an important consideration in management decision making. The Portmoak paths group are also important stakeholders given that some locally important public access routes pass through the site.

## 3.0 PUBLIC ACCESS INFORMATION

### 3.1 Getting there

Kilmagad can be reached by public transport by bus to Scotlandwell, with regular services via Glenrothes, Kinross or Milnathort. From the road junction in the centre of the village, walk north (towards Kinnesswood) along the footway of the main road (A911). After 300m the path to Kilmagad leads up a flight of steps to the right.

By car, follow the A911 to Scotlandwell church, which lies 400m north of the main road junction in Scotlandwell. Parking is permitted in the church car park. Cross the road, and follow the footway towards Kinnesswood. The main entrance is 50m along on the north side of the road.

There are public toilets (incl. disabled access) at Kinross Services (M90, J6, 7 miles). There is a public house/hotel facilities at Scotlandwell and a village shop and filling station at Kinnesswood. Nearest bus stop - Scotlandwell (0.3km) regular services via Glenrothes, Kinross or Milnathort. Further information about public transport is available from Traveline - [www.travelinescotland.com](http://www.travelinescotland.com) or phone 0871 200 2233 (February 2016).

### 3.2 Access / Walks

There are approximately 2.7km of maintained paths across the hillside, connecting five entrances. The path network passes through young plantation, mature broadleaved woodland and open ground, and provides spectacular panoramic views across Loch Leven. Paths are unsurfaced and steep in places. Some sections may be uneven and become muddy after wet weather. The main entrance is accessed directly off the recently created safe route between Kinnesswood and Scotlandwell. The upper entrances have kissing gates.

The paths link well into the surrounding Portmoak Path Network, including the Michael Bruce Way, a circular route linking the villages of Scotlandwell and Kinnesswood with the Woodland Trust sites of Kilmagad and Portmoak Moss, and linking up with the Loch Leven Heritage Trail via Grahamstone. Three core paths cross the site, those being PTMK/5, PTMK 118 and PTMK/120. A fourth, the Council's safe route runs along the southern boundary of compartment 5c (PTMK/146).

## 4.0 LONG TERM POLICY

The long term vision (100 years plus) is that the site will be a mosaic of mixed woodland, scrub and open grassland. Approximately 70% of the site will be native woodland of mixed species and ages. This will be concentrated on the lower and western parts of the site which have previously been wooded (LEPO) and on the ex-grazing fields in cpt 5. The main canopy trees, on the more base rich soils, will be; oak, birch, sycamore, beech and, hopefully, some ash, along with a few; hawthorn, hazel and rowan. All of the currently mature broadleaved trees will be retained, as long as possible, and there will be frequent; aerial, standing and fallen deadwood scattered throughout. There will be a diverse ground flora approximating to NVC classes of W11/W9. The woodland will blend, naturally, into the form of the landscape and key viewpoints from within the wood will be maintained. The site will continue as an area for informal recreation and enjoyment and continue to provide access to the Lomond Hills. There are no plans to extend public access arrangements.

The site will provide quiet informal access to local users as well as visitors accessing the Lomond Hills, Portmoak Path Network and Michael Bruce Way in accordance with the Scottish Outdoor Access Code. The managed path network will be maintained and kept clear of obstacles and overhanging branches. It will provide access to a range of habitats from; lowland woodland to upland open ground and provide panoramic views across Loch Leven, the Firth of Forth and beyond. The paths link well into the surrounding path network and the site will continue to develop and enrich the surrounding landscape.

Portmoak Community Woodland Group will continue to be involved with the on-going management of the wood through regular updates at their monthly meetings and occasional volunteer days to undertake various tasks; including tree shelter removal, etc and the on-going maintenance of the community orchard within compartment 5a.

Local community involvement will continue to be encouraged. Wider public consultation will also be undertaken whenever the management plan is reviewed.

## 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

There are 2.7km of maintained path across the hillside, connecting five entrances. This includes a 700m section of the Michael Bruce Way (PTMK/118 and PTKM/5) a circular route linking the villages of Scotlandwell and Kinnesswood with the Woodland Trust sites of Kilmagad and Portmoak Moss, and linking up with Loch Leven Heritage Trail via Grahamstone. The path network passes through both young and mature broadleaved woodland as well as open ground, and provides spectacular panoramic views across Loch Leven and to the south and west. The northern entrance gives access to Munduff Hill (PTMK/120) and the Lomond Hills beyond. There are 3 entrances with direct access to the roadside pavements, including the safe route between Kinnesswood and Scotlandwell (PTMK/146). There is no parking on site, but parking is permitted in the church car park, just off the A911. This provides access to both the southern entrances. The paths are unsurfaced and often moderately steep. Some sections may be uneven and muddy after wet weather.

#### Significance

The paths are well-used by both local people and visitors, many passing through either to the Lomond Hills or on the Michael Bruce Way to Loch Leven. The panoramic long-distance views from higher up the slope are outstanding. It is estimated that over 10,000 visits are made per year. The current level of public use is defined as WT Access Category A (High: Regularly used at all times of year; more than 15-20 people using one entrance every day). The internal path network links well into the path network in the surrounding countryside.

#### Opportunities & Constraints

Constraints:

- Steep slopes and occasional sections of soft ground surfaces make the site unsuitable for multi-use or all-abilities access.
- Future woodland expansion must be designed in a fashion to retain adequate lines of site and key viewpoints.
- There is poor access, in some areas, is restrictive for the larger path maintenance machinery and materials

Opportunities:

- Increase awareness and possibility of Kilmagad Wood and Portmoak Moss having improved links with Loch Leven Heritage Trail
- Possibility of linking in with future access initiatives within the Lomond Hills.

#### Factors Causing Change

Gorse Encroachment on Path Network

#### Long term Objective (50 years+)

The site will provide quiet informal access to local users as well as visitors accessing the Lomond Hills and Michael Bruce Way. The managed path network will be maintained as well drained and clear of obstacles and overhanging branches. It will offer experience of both young and mature woodland, and open ground, offering panoramic views across Loch Leven and beyond. The site will be as free of barriers and accessible to as wide a range of users as is practical. The path network will link into the surrounding core path network and the roadside route between the villages will become more diverse by the increased amount of native woodland.

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

Access provision will be in line with WT Access Guidelines and site access coding (A), and according to the Scottish Outdoor Access Code. Achieved by keeping managed paths well-drained and free from vegetation, obstacles and over-hanging branches, and ensure all deer fences and access gates within the deer fence lines are maintained in good order.

## 5.2 Long Established Woodland of Plantation Origin

### Description

Kilmagad lies on the shoulder of Munduff Hill, and is highly visible from the surrounding landscape. It consists of approximately 27% mature broadleaved woodland, 28% young broadleaved woodland (established since 1999) and 45% open ground. Historically, a greater area was wooded, and the SNH Ancient Woodland Inventory shows the lower slopes as LEPO (Long Established of Plantation Origin) up to between 250-300m elevation. However, the 1st edition OS map (1856) shows the whole site, except sub-compartments 1c and 1d, as woodland (approximately 80% wooded). The tree species and ground flora in most parts of the site support the LEPO description, although patches of woodrush throughout the site and the presence of wood sorrel and bluebell in the south-eastern parts may hint that parts of the wood are older. The main tree canopy is currently concentrated to the south, west and north of the site, whilst the upper and eastern parts predominately comprise of open ground. The ground vegetation and the remaining scattered mature trees suggest that the central area (cpts 2b and 3c) were wooded until fairly recent times, the woodland having declined through a combination of grazing, windblow and loss of elm. The remnant trees in this area are gradually declining. Over the last few years there has been some new planting in the area. To the east of the site, cpts 1c and 1d are shown as open on the earliest maps and show clear rig and furrow lines.

Where there is mature woodland the abundant tree species are sycamore, beech and oak with frequent ash, birch, rowan and hawthorn, and occasional Scots pine, larch and hazel. There is little regeneration in the areas. Probably due the dense grass cover and browsing by roe deer. Where new planting has occurred sporadic patches of dense gorse have colonised the disturbed ground. The ground flora is dominated by grasses, with frequent patches of woodrush in the LEPO area and patches of dense bracken spreading upwards from the lower ground. The NVC classification over most of the site is W11, with W9 on the more base rich soils. Natural regeneration is limited over most of the site, due to a combination of factors, such as; dense grasses and sporadic clumps of dense gorse and bracken, along with browsing by deer and occasionally sheep.

### Significance

The woodland is on the SNH Ancient Woodland Inventory (AWI) as LEPO. The areas that are presently under woodland cover have the potential for a relatively high biodiversity. Some areas of woodland cover that have been lost, over recent decades, are likely to retain an element of woodland habitat. These areas are therefore considered priority areas for reinstating to native woodland. The site contains a mosaic of varied habitats; from mature woodland and scrub through to sunny glades and expanses of open ground-which are favoured by a variety of butterflies and insects. The woodland is prominent in the surrounding landscape and is designated as ALV (Area of Landscape Value). There is little other ancient woodland in the vicinity. However, Kilmagad Wood does link into several semi-natural scrub and open ground habitats on Munduff Hill and borders a commercial conifer plantation to its east.

### Opportunities & Constraints

**Constraints:**

- Slopes/access - The topography of the site limits access to small size machines, especially in the upper areas.
- Landscape - Visual aspect influences design and management
- Exposure - higher ground is more open and vulnerable to exposure.
- Browsing - Ever-present roe deer and occasional incursions and browsing by sheep.

**Opportunities:**

- To reinstate woodland cover in the LEPO areas on the; lower, mid and, parts of the, upper ground.

**Factors Causing Change**

Invasive gorse, deer damage and exposure

**Long term Objective (50 years+)**

The site will be a mix of woodland, scrub and open grassland. Approximately 70% of the site (concentrated on the LEPO area; mid, lower and western parts of the site) will be broadleaved woodland of mixed species and age. The main canopy trees will be oak, birch, beech, sycamore and, it is hoped, occasional ash on the base rich soils, along with small amounts of; hawthorn, hazel & rowan. Mature broadleaved trees will be retained for as long as possible, along with some; aerial, standing and fallen deadwood, where it is safe to do so. There will be a diverse ground flora approximating to NVC classes of W11/W9. The woodland will sit comfortably within the existing landscape and views out will be maintained.

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

(i) Mature woodland areas will develop naturally without planned intervention in this plan period. Aerial, standing and fallen deadwood will remain in situ, where it is safe to do so. Where substantial gaps appear in the canopy they will be enriched with native broadleaved trees in 1.2m tree shelters and stakes.

(ii) Safeguard the establishment of recent tree planting throughout the site. Achieved by (a) Annual inspection followed by; (b) Replacement planting if stocking drops below 90%, and tree shelter maintenance as required (b) Spot weeding with Glyphosate until established and control of gorse by cutting back and cut stump treatment with Glyphosate where threatening establishment (c) Removal of tree shelters as trees become established and are considered free from the effects of deer browsing/fraying.

(iii) There will be a gradual reinstatement of areas once wooded in compartments 1c, 2b and 3c that were previously LEPO woodland, and which have retained an element of woodland habitat, by creation and establishment of new native woodland by extension planting of existing woodland areas on the mid-ground and by sporadic groups on the higher ground. Approximate area 3.00 ha, to be completed by 2021. Achieved by; (a) Protect from browsing by erecting either; deer fenced exclosures to exclude roe deer, or planting in 1.2 metre tree shelters and stakes. Within deer fenced exclosures plant trees in 0.75m tree shelters and stake. All trees planted at 1600 trees/ha, comprising of; sessile oak 40%, silver birch 15%, aspen 10 %, Scots pine 15%, rowan 5%, hazel 5%, blackthorn 5% and hawthorn 5% and will include an element of open ground. (c) Spot weed control using Glyphosate until established (d) Assess survival rate annually until established. Replace failed stock, if stocking density falls below 90% (e) Ensure on-going survival and establishment by; annual monitoring of trees and exclosures / tree shelters, and maintain / repair as necessary.

(iv) (a) Cpt 1c (0.81ha) Trial natural regeneration plot (0.6ha)-unsuccessful -area previously rabbit fenced. Rabbit fence removed 2013. The site was planted October 2016 with mixed native species; (sessile oak 40%, silver birch 15%, aspen 10 %, Scots pine (Cala) 15%, hazel 5%, rowan 8% blackthorn 7% with an element of open ground) at approximately 2,000 trees/ha. Most trees planted in 1.2m tree shelters (hazel, blackthorn in 0.6m shrub shelters). Spot weeded, (twice per year if necessary), using Glyphosate, and annually thereafter until established. Beating up of trees to take place in winter 2017/18.

(iv) (b) Survey annually and carry out replacement planting if stocking falls below 90%. Continue to spot weed annually with Glyphosate until established, and maintain tree shelters as required.

(v) Maintain previously planted areas across site by (a) Annual monitoring of sites. (b) Controlling gorse by cutting back and cut stump spraying with Glyphosate, as required. (c) Tree shelter maintenance and removal, as necessary.

## 5.3 New Native Woodland

### Description

Compartments 5a and 5c. Originally, the area was two fields of improved grassland, which were bought in 2008 and planted up in 2009/10 with a species mix approximate to NVC W10 (sessile oak 30%, downy birch 20%, silver birch 20%, ash 15%, rowan 5%, hawthorn 3%, hazel 3%, others 6%). The total area planted is 3.24ha at 1600stems/ha (5175 trees) with 0.71ha designed open ground, located to give an undulating lower edge, and open space around the two key viewpoints at the ridge tops in 5c. Annual spot weeding has been carried out, using Glyphosate, until establishment. Most trees are now established, though some oak has been slow to get away in places. Tree survival and growth rate post planting has generally been very good. A small amount of replacement planting has taken place over the last 3 years. The site is now considered fully stocked.

Ash dieback was discovered in both compartments in 2015. The deterioration in condition of the young ash trees over the last 12 months has been rapid. Ash dieback is evident on the main stem and branches of many of the young ash trees. Dieback is now occurring throughout the stand and is affecting subsequent regrowth. The site has a high stocking density of mixed tree species. The gradual loss of the ash component (15%) is not expected to have a significant effect on the development of the woodland in the long term. Hence, no interplanting is planned.

### Significance

Woodland creation in cpt 5 meets both the Trust's objectives of protecting ancient woodland and creating new native woodland. Broadleaved woodland makes up only a small proportion of the semi-natural vegetation in the area, and this has added to both the landscape diversity and biodiversity. Much of the surrounding land is intensively managed for agriculture (arable or turf production).

### Opportunities & Constraints

Opportunities: On-going engagement of the community woodland group in developing the orchard area, etc. Community involvement with reinstatement planting in areas that were once LEPO woodland.

### Factors Causing Change

Ash Dieback

### Long term Objective (50 years+)

Compartments 5a and 5c will gradually become mature native woodland. Consisting of mainly of oak and birch, along with a variety of other native trees and shrubs. There will be some variation in canopy density and a diverse woodland structure. A natural shrubby lower edge will develop, blending into grass and tall herbs near the road and there will be grassy open space around the key viewpoints at the tops of the ridges in 5c. The woodland will develop naturally in the local landscape, integrating well with the more mature LEPO woodland around it. The ground flora will gradually lose its field characteristics as grasses are shaded out and woodland specialists begin the slow process of colonisation.

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

Ensure the planted areas continue to exceed SRDP obligations. Safeguard the new woodland by continuing to follow best practice methods at all times. Ensure maximum survival, growth and establishment is achieved by; (a) Annual monitoring of the site. (b) Ensure on-going tree protection by; regular maintenance of deer fence exclosures, gates and tree shelters to ensure they are kept in good order. Tree shelters will be removed when trees are considered safe from the effects of browsing or fraying. Tree shelters will be recycled, if practical.(c) Annual mowing and maintenance of footpaths, scrub and open areas within exclosures, as required.

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## 6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By
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## APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
1a	1.64	Mixed native broadleaves	1999	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value
<p>The most northerly section of the site at the highest elevation, the southern half of this sub compartment is steep sloping. The sub-compartment is bisected by an area of open ground belonging to cpt 1d. The majority of the area is planted with mixed native broadleaves in 1.2 m tubes (mainly birch &amp; oak) planted 1999. There is also a scattering (approx 10%) of mature and semi-mature trees dominated by larch, with occasional sycamore, beech and rowan, Scots pine, ash and Norway spruce. The young trees have grown fairly slowly due to the harsh exposed upland conditions-the oak appear to have coped better with the conditions and are now growing reasonably well, considering climatic factors. There is no understorey and no notable natural regeneration. Ground flora is patchy and dominated by tufted-hair grass, with frequent soft rushes, occasional woodrush and bilberry, and rare wood-sorrel. Nettles and thistles also occur occasionally. There are occasional standing and fallen mature dead Scots pine trees.</p>							
1b	1.48	Mixed broadleaves	1900	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value

On a south-westerly slope, this sub compartment has about 70% cover of mature and semi-mature trees, consisting of frequent sycamore, larch and Scots pine, occasional birch and beech, and rare ash, oak, Norway spruce and hazel. Trees are slow grown and stunted due to exposure. There is no understorey and only occasional beech regeneration under the beech canopy. There is about 70% cover of ground flora, predominantly grasses including frequent tufted-hair grass, as well as frequent soft rushes and occasional bilberry, nettles and creeping cinquefoil. There is abundant dead wood, both fallen and standing. There is occasional evidence of rabbits, including a small warren in the west.

1c	0.81	Oak (sessile)	2016	Wood establishment	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value
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This is an area of open hill ground covered with dense tussock grasses including abundant tufted-hair grass, as well as occasional; woodrush, heather, blaeberry, soft rush, thistle, creeping cinquefoil, gorse and rare; viola sp. In 2000 the site was chosen as a natural regeneration trial area. A rabbit fence was erected to enclose the area and protect any emerging regen' from browsing. The trial proved unsuccessful. The old rabbit fence was removed in 2013. The area previously rabbit fenced (0.6ha) was planted up in October 2016 with mixed native species; (sessile oak 40%, silver birch 15%, aspen 10 %, SPC 15%, hazel 5%, rowan 8% blackthorn 7%, an element of open ground was retained) at approximately 2,000 trees/ha. Most trees were planted in 1.2m tree shelters (hazel, blackthorn in 0.6m shrub shelters). Aspen and SPC planted on the south western front to shelter the oak from the exposed winter weather conditions and strong prevailing winds. Spot weeded, (twice per year if necessary), using Glyphosate, and annually thereafter until established. Beating up of trees to take place in winter 2017/18.

1d	5.12	Open ground		Non-wood habitat	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value
<p>A mainly open area on moderate to steep slopes with old drainage lines visible. Ground flora (95% cover) consists mainly of grasses, including abundant tufted-hair grass and soft rush, frequent heather and occasional woodrush, creeping cinquefoil, blaeberry, thistle and sedge species. The terrain is tussocky and uneven with wet flushes. Approximately 10% of the area is covered by gorse, including an extensive patch occupying c. 0.5ha in the southeast of the area, and some further scattered patches on the eastern side. This an open ground area devoid of trees.</p>							
2a	1.34	Mixed broadleaves	1900	High forest	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>Steep with a mainly westerly aspect, the area has about 80% mixed mature canopy cover with frequent larch and beech, occasional sycamore and Scots pine and rare oak, willow, rowan, birch and ash. Trees become more scattered at edges. Beech and sycamore dominate in the lower and mid slopes, with larch in narrow belts along the northern boundary. The understorey (5% cover) consists of gorse with occasional hawthorn. There is abundant beech regeneration from spring 2004 under the beech canopy. There is 95% cover of ground flora (sparse under beech) dominated by grasses including frequent tufted-hair grass, frequent woodrush, occasional wood-sorrel, bracken (in open areas) and nettles. There is frequent standing and fallen dead wood. A few rabbits are present.</p>							

2b	2.02	Open ground	1900	Non-wood habitat	Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>An area of generally steep slopes (running West to South West) bisected by two steep, narrow, gullies in the south. Predominantly open ground with less than 10% canopy cover in three small isolated groups of trees, dominated by sycamore and larch, frequent beech, with occasional ash and hazel, and rare rowan. Most of the remnant trees are in decline due to age and exposure and there are occasional standing dead trees. There is occasional gorse. There is no notable tree regeneration. Rabbits and brown hares frequent the area. Ground flora is dominated by grasses including frequent tufted-hair grass, as well as frequent woodrush (in patches) and heather, occasional soft rushes, thistle and nettles.</p>							
3a	0.58	Sycamore	1900	High forest	Gullies/Deep Valleys/Uneven/Rocky ground, Mostly wet ground/exposed site, No/poor vehicular access within the site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>Moderately steep west-facing slope with 70% mature &amp; semi-mature canopy cover. Trees are relatively dense in gullies and more scattered on ridges, dominated by sycamore, with frequent rowan, occasional oak and rare ash and beech. Beech regeneration from spring 2004 evident, and there is occasional browsing. Areas of open ground occur throughout, dominated by grasses with abundant patches of woodrush and bracken, as well as frequent wood-sorrel and occasional gorse, dock, creeping buttercup and creeping cinquefoil. There are several fallen mature trees, and some standing dead wood.</p>							

3b	1.65	Sycamore	2010	High forest	No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>A strip of open, mature broadleaved woodland on a steep slope. Delineated at its upper boundary by an old hill track and at its lower by the footpath. Species are dominated by sycamore, with occasional oak and rowan, beech and rare ash and hazel, covering approximately 50% of the area, and becoming more open at its upper margins. There is some sycamore regeneration despite there being a small rabbit warren. Enrichment planting carried out in 2010 has helped to bolster the upper margin, particularly to the east. The enrichment planting crosses into cpt 3c. Species include birch, ash and oak with mixed shrubs in 1.2m tree shelters. About 20% of the area is covered by gorse, which encroaches rapidly where mature trees have been lost and ground is disturbed. Ground flora is dominated by grasses, frequent patches of bracken, and occasional woodrush, germander speedwell and wood-sorrel. There are occasional fallen and standing dead trees.</p>							
3c	4.11	Mixed native broadleaves	2010	Wood establishment	Gullies/Deep Valleys/Uneven/Rocky ground, Mostly wet ground/exposed site, No/poor vehicular access within the site, Site structure, location, natural features & vegetation, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin

Mainly open and generally steep south-westerly facing sloping, bisected by several deep gullies in the western half. About 5% of the area is covered by mature and semi-mature trees, dominantly sycamore and beech with occasional ash and rare oak. Many trees are gradually declining, due to age and exposure. There is abundant dead wood, both fallen and standing. To the south east of the compartment, some enrichment planting has been carried out (2010), covering approximately 0.3ha which is an extension to the planting in 3b. Species include oak, ash, birch and mixed shrubs. A rabbit fenced enclosure (~1 ha) lies within the eastern half of the sub compartment, but there is no notable regeneration. There is dense clumps of gorse in the gullies, along the south-eastern track edge and some encroachment from 3b below. Otherwise, Ground flora is dominated by grasses, with occasional woodrush and woodruff, and rare wood-sorrel. Bracken is encroaching from the lower slopes.

4a	0.50	Mixed native broadleaves	2003	Wood establishment	No/poor vehicular access within the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
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A west-facing slope, this area is mostly occupied by relatively new planting (2003) of native species (sessile oak, ash, birch, rowan, hazel & hawthorn) in 1.2m tree shelters. Approximately 70% of this area has now been reinstated to native woodland. Some mature broadleaves are scattered throughout, mainly; sycamore and beech. Area between central gullies to remain as open ground; to retain landscape interest, views out from top path and provide open ground habitat. Dense, gorse in places, amongst younger trees. Planting is established and trees have grown well, especially the oak, ash and birch, tree shelters are gradually being removed. There is occasional beech regeneration under beech canopy. The ground flora is dominated by grasses, with frequent dock and thistle and occasional germander speedwell, creeping buttercup and great woodrush. There are rare patches of bracken. Ash dieback was discovered in this cpt in 2015.

4b	3.29	Sycamore	1900	High forest	Archaeological features, Gullies/Deep Valleys/Uneven/Rocky ground, No/poor vehicular access within the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
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<p>A strip of mature woodland running along the lower, gentler slopes of the site below the Michael Bruce Way, and crossed by a series of broad ridges and wide gullies, one of which contains an old limekiln. The density of trees varies (approx 80% overall) with abundant sycamore, frequent beech and oak, and occasional rowan, birch and ash. There is patchy gorse (10%) in open areas. There are occasional pulses of sycamore regeneration. Ground flora is sparse in the gullies and under beech canopy, and is dominated by grasses, with frequent wood-sorrel and occasional creeping buttercup, great woodrush, soft rush, bracken and nettles, with rare bluebells. There is frequent aerial and fallen dead wood.</p>							
4c	0.26	Open ground		Non-wood habitat	No/poor vehicular access within the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>Open area enclosed by cpt 4b with shallow south westerly slope, Scattered mature trees (10%) stand in an area mostly dominated by grasses, with bracken dominating to the east. Occasional beech regeneration.</p>							
4d	0.43	Mixed native broadleaves	1999	Wood establishment	No/poor vehicular access within the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>An area partly planted (1999) with mixed native broadleaves (oak, birch, ash, rowan, hazel, hawthorn) in 1.2m shelters, a few trees are in 0.75 shrub shelters-which are frequently browsed. Ground flora of soft grasses on gentle slope with patches of gorse. There is rare beech regeneration. Ground flora is dominated by grasses with occasional thistle, woodruff and germander speedwell. There is rare dead wood.</p>							
4e	0.98	Sycamore	1900	High forest	No/poor vehicular access to the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>Mature broadleaved woodland consisting of abundant sycamore, frequent oak, occasional birch, and rare ash. Most of the compartment lies within a rabbit fenced enclosure. Some trees showing early signs of gradual decline. Frequent sycamore regeneration. The ground flora includes soft grasses, bluebells and oxalis, but the more open upper edge is dominated by encroaching bracken. There is frequent aerial and fallen deadwood.</p>							

4f	2.61	Mixed native broadleaves	2010	Wood establishment	No/poor vehicular access to the site, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin
<p>An area of steeply sloping, south facing ground, which was previously open ground. There is less than 5% mature tree cover (oak with occasional rowan and sycamore). In 2010, most of the area was deer fenced and planted with a mix of; silver and downy birch, sessile oak, ash, rowan, hazel and mixed shrubs, all in 0.75m shelters to protect from, the then, abundant rabbits. Gorse encroachment sporadic, forming dense clumps in places, particularly in the east, north-west and along the top path. Occasional birch regeneration, which is often browsed. Ground flora is dominated by grasses, with frequent tufted hair grass, foxglove and woodruff, and occasional thistles, nettles and bracken. There is some earlier young planting (by local community) in the east and south (1.2m tubes) and west (spiral guards), the latter having been heavily browsed. There is occasional aerial and fallen deadwood. Tree growth has been relatively slow, and survival is patchy in places, but trees are gradually establishing. Tree shelter and deer fence maintenance, and gorse cutting still required.</p>							
5a	1.44	Mixed native broadleaves	2009	Wood establishment	Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value
<p>An area of sloping, south facing ground. Previously improved grassland for grazing. Acquired by Woodland Trust in 2008 for a woodland creation extension to Kilmagad Wood. The land has been regularly grazed, up to and including spring 2009. Therefore, ground flora limited to; a vigorous grass sward with patches of nettle and thistle and occasional gorse establishing along the field boundary, along with some fine veteran oaks along the northern boundary. In 2009 the area was deer fenced and was planted entirely by school children and volunteers in 2009 with native tree species: silver and downy birch, sessile oak, ash, rowan, gean, bird cherry, aspen, hazel, hawthorn and holly. Birch and oak are the dominant species (approx NVC W10). The trees have grown well on this southerly facing slope. Stocking density and survival rates are high-the site is considered established. Ash dieback was discovered in this cpt in 2015. Routine maintenance of the deer fence/gates and paths will be on-going for the next 5 years.</p>							
5b	0.57	Mixed broadleaves	1900	High forest	Gullies/Deep Valleys/Uneven/Rocky ground, Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value, Long Established Woodland of Plantation Origin

A belt of mature sycamore and oak in a Southerly facing dry gully. Some older trees contain some aerial and fallen deadwood. Until 2009 the area was grazed. Hence, there is little ground flora- predominately soft grasses and no regeneration. There are scattered isolated gorse bushes on the boundaries. Note; that there is no marked boundary between this block and the leased area owned by the Church of Scotland to the south.

5c	2.68	Mixed native broadleaves	2010	Wood establishment	Site structure, location, natural features & vegetation	Informal Public Access	Area of Landscape Value
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An area of sloping, south facing ground. Previously improved grassland for grazing. Acquired by Woodland Trust in 2008 for a woodland creation extension to Kilmagad Wood. The land has been regularly grazed, up to and including spring 2009. Therefore, ground flora limited to; a vigorous grass sward with patches of nettle and thistle and occasional gorse establishing along the field boundary, along with some fine veteran oaks along the northern boundary. In 2009 the area was deer fenced and was planted entirely by school children and volunteers in 2010 with native tree species: silver and downy birch, sessile oak, ash, rowan, gean, bird cherry, aspen, hazel, hawthorn and holly. Birch and oak are the dominant species (approx NVC W10). Some trees (a mix of native tree species, with a shrub component) were also planted at the same time, just outside the deer fenced area (between the deer fence and the main road). Nearly all trees have grown well on this southerly facing slope. Stocking density and survival rates are high-most of the trees are now established, though some of the oak have been rather slow to get away. Grassland plants (predominately grasses and herbs) have flourished on the ungrazed sward. As a result, a wide variety of butterflies and insects can be found on the site during the summer months. This part of the site is well used for walking and gaining access to the rest of the site and the Lomond Hills. A small orchard area of mixed species was planted by the Community Woodland Group in 2011 and has grown well. The orchard area is used by the community and local school children for fruit picking, informal recreation and outdoor learning. Routine maintenance of the deer fence/gates and paths will be on-going for the next 5 years. The main entrance to the site, welcome sign and information board is located at the south of this compartment (opposite the Church car park). Ash dieback was discovered in this compartment in 2015 and is already having a major impact upon the young ash trees.

## 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.