COED CADW
WOODLAND
TRUST

Coed y Gopa

Management Plan
2017-2022

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:	Coed y Gopa
Location:	Abergele
Grid reference:	SH937767, OS 1:50,000 Sheet No. 116
Area:	46.93 hectares (115.97 acres)
Designations:	Ancient Woodland Site, Scheduled Ancient Monument, Site of Special Scientific Interest, Special Landscape Area, Tree Preservation Order

2.0 SITE DESCRIPTION

2.1 Summary Description

Located on a prominent limestone hillside in the Vale of Clwyd in North Wales, Coed y Gopa is a popular wood with a wide variety of wildlife, breath-taking coastal views, and features of historical interest.

2.2 Extended Description

Coed y Gopa and Coed Bryngwenallt occupy prominent carboniferous limestone hills to the south-west of, and overlooking, the town of Abergele. The hills to the west and east are also wooded (coniferous plantations). Housing now extends right up to the woodland boundary to the north-east. The remainder of the surrounding land is pasture.

The woodland was mainly planted with beech, pine and larch in the 1950s, the northern parts on an ancient woodland site and much of the remainder on previously open limestone grassland, scrub and rough pasture. Considerable natural regeneration has also occurred and self-sown ash is now a significant component of the woodland. Small areas of notably species-rich unimproved calcareous (and neutral) grassland remain throughout the site with limestone scrub present on rocky outcrops/cliff tops. Coed y Gopa is located in an area notable within North Wales for its concentration of characteristic limestone habitats. Open habitat is also present along a series of wide rides which support diverse marginal vegetation and are likely to be of value to invertebrates and foraging bats. An Iron Age hill fort, Castell Cawr, (a Scheduled Ancient Monument) is present on the hill summit. A mineral vein crosses the northern part of the site, with past lead mining activities here resulting in the formation of a deep narrow gorge, Ffos y Bleiddiaid. Mine adits and natural caves provide potential roosts for bats and the second largest lesser horseshoe bat hibernaculum in North East Wales is present at the site, a feature for which Coed y Gopa is designated a Site of Special Scientific Interest (SSSI).

The site is crossed by wide extraction tracks, open rides and narrower paths (including two public rights of way) and is well-visited by the local population who enjoy the spectacular views over Abergele and the coastal plain. A small parking area is provided to the north-west of the site where the main management access also occurs.

In summary, key features of the site are:
- Plantation on Ancient Woodland (PAWS);
- Open Ground Habitats, particularly the species-rich grassland, scrub and network of wide rides;
- Species/ community: namely the Lesser horseshoe bat roost (with other smaller bat roosts also present);
- Archaelogical features: Castell Cawr hill fort which is a Scheduled Ancient Monument;
- Connecting People with Trees and Woods

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

By bus:

The nearest bus top is on the A547 close to the junction with Tan y Gopa Road. There is then a 0.5 mile walk to the site, some of which is without pavements, with the latter section being uphill along a narrow country lane.

By train:

Nearest train station: Abergele and Pensarn
Contact the Traveline website for further information at www.traveline-cymru.info or call them on (0871) 200 22 33.

By car:

From the East: leave the A55 at junction 24 and follow the A547 through Abergele. Turn left onto Tan y Gopa Road and follow signs to the Golf Course. After the golf course, bear right past the Conwy depot. The main entrance to the wood is on your left after approximately 300 yards.
From the West: leave the A55 at junction 23 and follow the A547 toward Abergele, passing the Gwyrch estate on your right. Turn right onto Tan y Gopa Road and follow signs to the Golf Course. After the golf course, bear right past the Conwy depot. The main entrance to the wood is on your left after approximately 300 yards.
When reaching the main entrance there is a small car park which can accommodate up to six cars.

On foot:

Coed y Gopa features in several circular walks promoted by the Town Council. Look out for information in Abergele car park or visit their website at abergele-towncouncil.co.uk/abergele-walks.html

3.2 Access / Walks

There are eight pedestrian access points into Coed y Gopa & Coed Bryngwenallt.

• The main entrance to the north-west, off the Rhyd y Foel road, has an entrance for the less-abled which is suitable for pushchairs and manual wheelchairs. The forest track from this entrance extends the full length of the wood, rising gradually to the top of the hill. This track is stoned but is rather bumpy, particularly the southern half. A network of narrower paths links to this main track. These are not surfaced, can be uneven in places, and where limestone bedrock is close to the surface they can be slippery when wet. In the vicinity of the Ffos y Bleiddiaid there is a footbridge and a set of ladder steps/limestone steps.

• The entrance at the north-eastern tip of the wood has no barrier but leads to a long flight of steps up a steep hill.

• An entrance off Tan y Gopa road has a squeeze stile from which a path zigzags up a slope to join a track.

• Coed Bryngwenallt is bisected by a public footpath, accessible from Tan y Gopa road (open gateway) or from adjacent fields (stile). A bridleway runs between the two sections of the wood. Access to Coed Bryngwenallt is then available via a forestry track. Access to Coed y Gopa is possible from the bridleway via a stile and a rather steep path with some steps.

The site is easily accessible from Abergele and is traversed by a number of tracks and paths (although definitive rights of way are limited to the track between Coed y Gopa and Coed Bryngwenallt and a path through Coed Bryngwenallt). Where bedrock is close to the surface of paths they can become very slippery when wet.

The main rides through the site are significant features, supporting and linking open habitats. The main ride through Coed y Gopa is a wide surfaced forestry track while the ride through Coed Bryngwenallt is narrower and un-surfaced. These wide rides and shaded paths enhance the visitor experience.

A small car parking area with information board is available at the entrance to Coed y Gopa. The site also features as part of a recently promoted circular walk from the town of Abergele established in conjunction with the town and county councils and waymarked with large limestone blocks. Recent clearance of sections of the hill fort ramparts has also enabled the public to better appreciate the hillfort structure on the ground.

Trail guides are currently available on the Trust's website. Abergele town walks leaflets can be downloaded from the Town Council web pages.

4.0 LONG TERM POLICY

In fifty years time, Coed y Gopa will have been restored to a semi-natural broadleaved woodland, with a more varied age structure and canopy comprising a range of site-native tree species, including yew, cherry and oak along with sycamore and hopefully some ash, although scattered beech, pine and other introduced species will still be a part of the woodland make-up. There will a well-developed understorey typical of native woodland on limestone, including shrub species such as buckthorn, spindle, hazel and wild privet. There will be a greater proportion of mature trees and deadwood habitat, as well as abundant natural regeneration. The ancient woodland remnants on the site will be secure, following the completion of a gradual programme of thinning of remaining crop species. Ancient woodland flora, typical of woodland on limestone, will expand to cover a majority of the ground layer. A more diverse age structure will arise over time, with a greater proportion of mature trees and deadwood habitat, as well as abundant natural regeneration. Invasive non-native species will be rare or absent.

Stinking Hellebore will be a common sight, especially along the ride-sides, which will also provide foraging opportunities for species such as bats and butterflies.

Within the woodland, existing pockets of open ground habitat will be retained where these have significant species interest. These will include a number of calcareous grassland areas supporting a diverse limestone grassland flora, while along the main ride, small coppice coupes will provide foraging opportunities for a stable and secure population of Lesser horseshoe bats, which will continue to hibernate undisturbed in the caves on site.

Castell Cawr hillfort and other historic features will be undamaged and in stable condition, with minimal damage from public access and windthrow. The summit ramparts will remain clear of woody growth to allow their appreciation by visitors. The historical significance of the site will be understood by visitors.

In the long term, the site will be increasingly well-used by the public for recreation and educational purposes, making use of an extensive network of safe, well-maintained but varied paths and viewpoints. Visitors will include a mix of local people and visitors to the area, enjoying a range of activities, including dog walking, health and well-being activities and educational visits. Local community groups and schools will benefit from the visitor facilities for purposes such as Forest School. New visitors - including tourists to the area - will be able to access enticing off-site information about the wood and on arrival will find the entrance points welcoming, with information to enhance their visit. Regular events will provide opportunities for these visitors to engage with the Trust and visitors will be inspired to support our work.

Issues such as dog fouling and littering will be reduced through a combination of targeted engagement and on-going maintenance by volunteers and contractors. Increased usage will also deter anti-social behaviour as the community act as 'eyes and ears'. Recreational activities will not have a detrimental impact on the wood's natural or historic features.

5.0 KEY FEATURES

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

5.1 Ancient Woodland Site

Description

Although only the northern area of the site featured in the most recent Ancient Woodland Inventory (2011), the majority of the wood is treated as a Plantation on Ancient Woodland Site. All stands, even those around the lower ramparts of the Iron Age Hillfort, exhibit some ancient woodland characteristics, including patches of bluebell and occasional mature broadleaves, indicating woodland of longstanding origin and high potential for restoration to native broadleaved woodland. (There are also two small areas of secondary woodland within sub-compartments 2d and 3a which have probably arisen from secondary regeneration (2d) or ornamental planting (3a), however, objectives for these stands would be broadly similar.)

Almost all the stands that exhibit ancient features have at some point been subject to plantation of non-site native exotics. Most of these stands are still considered as threatened, primarily due to dense shade under beech, Corsican pine or Japanese larch, which is resulting in a sparse ground/ field layer and suppressed natural regeneration/ shrub layer (although the main rideside and a small area of native-dominated young woodland are now effectively 'restored'). The woodland, which is designated as a SSSI, would naturally support W8d/e NVC sub-communities (typically ash-dominated communities).

The age profile of the woodland remains somewhat young, with very few trees over 50 years old. However, there is locally abundant regeneration of a range of site-native broadleaves (including ash, cherry, sycamore, wych elm, silver birch, yew, rowan and sessile oak) and a wide diversity of native shrub species occur within a admittedly sparse shrub layer (including hazel, spindle, wild privet, hawthorn and elder). The field layer is often sparse with much bare ground beneath areas of dense conifer/beech canopy and regeneration. However, where the canopy is more open there is often abundant dog's mercury, bramble, Arum, hart's-tongue fern, male-fern, broad buckler-fern and false-brome with occasional to locally frequent enchanter's nightshade, spurge laurel, wood sage, sanicle, stinking hellebore (a Nationally Scarce species), honeysuckle, bluebell, wood avens and tutsan. There are few pre-crop trees and precursor deadwood is rare in most of the site, although a scatter of older trees, stumps and stools occur.

Woodland in Coed y Gopa (once part of the Gwyrch Castle estate) was largely replanted with beech, pine and larch in around 1960, with a number of stands having reached their second rotation by the time the Trust acquired the site in 1989. (Small areas of more mature beech may pre-date the main commercial planting). There have been successive thinning interventions undertaken since 1990, which have reduce the dominance of beech somewhat, however, the canopy throughout this area remains typically <50% site-native.

Coed Bryngwenallt, to the south of the bridleway, was once part of the Bryngwenallt estate and features plantations of pine with some beech, larch and mature/ regenerating ornamental broadleaves such as Norway maple, sycamore, sweet chestnut, and lime, as well as native ash, cherry and oak. Regeneration levels and ground flora here are promising, although there remains some bare ground under the planted pine.

Significance

PAWS restoration presents significant opportunities for delivering biodiversity gains: ancient woodland is one of the UK's scarcest and yet richest habitats, with PAWS restoration the only means of expanding the area of semi-natural ancient woodland. The site was identified as having potential for restoration to native upland mixed ashwood (W8d/e), which is a priority habitat type in the UK and Wales BAP and in a European context (although the predominance of ash is now likely to be constrained by the arrival of ash dieback). The woodland supports the Nationally Scarce stinking hellebore and is likely to provide valuable foraging habitat for the Lesser Horseshoe Bat (a species which using the mining remains for winter roosts sites and for which the site is designated an SSSI). The open glades within the woodland also support a diversity of butterfly species. Woodland habitats are mentioned in the SSSI description although they are not the primary reason for designation.

Opportunities & Constraints

There is high potential to restore the woodland to semi-natural ancient woodland habitat, with much progress already having been made toward this objectives over the last quarter century.

The potential for timber extraction is restricted by the site's designated status, steep slopes and the relatively low current value and quality of the beech, which is the main crop species, however, some firewood products may be extractable where accessible from internal tracks.

Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and are also European Protected Species. Significant hibernation roosts are present on site: these should not be disturbed from November until April, which is a constraint upon woodland management work in the vicinity. Lesser horseshoe bats favour dense broadleaved woodland with a well-developed understorey for foraging, and this will need to be taken into account when planning the phasing and intensity of thinning operations. The bats' preference for stability in habitat around their roosts is likely to favour a gradualist approach to management.

As at 11-01-19, a record of dormice from a nearby garden has just been accepted by Cofnod and one record from woodland 1.6km away from Coed Bryngwenallt now appears on the NBN database. Although there are no confirmed records of dormouse presence on site, as a protected species, dormice may need to be considered during future Environmental Assessments.

Factors Causing Change

Shade levels will increase following management interventions as the canopy closes (favouring further domination by shade tolerant species such as beech). The balance of regeneration and species recruitment/ timber quality in the future canopy may be impacted by a range of pressures, among which the level of squirrel damage (on beech and Acer spp) and the arrival of ash dieback among young and regenerating ash trees across the site (noted first in 2016 and now evident in many stands) are probably the most significant.

There have been a number of uncontrolled fires under Corsican pine in the past: further incidents could reduce the potential for AW restoration locally.

Development on adjacent land could have an impact on woodland condition: for instance, as at 11-01-19, a planning application for a poultry unit on adjacent land is under consideration by Conwy Council, to which the Woodland Trust have objected on the grounds of potential impacts from ammonia/ nitrogen and biodiversity.

Scattered invasive non-native species such as laurel, holm oak and snowberry are present and are a future invasion threat if not controlled.

Long term Objective (50 years+)

Coed y Gopa & Coed Bryngwenallt will ultimately be restored to semi-natural broadleaved woodland. Whilst ash might naturally have been the dominant species within the ultimate woodland type, it now looks likely that a mix of site native and naturalised species will form the future canopy, including sycamore, yew, cherry and oak. There will be a diverse and abundant shrub layer including species such as spindle, wild privet, elder, buckthorn and young elm alongside hazel, holly and hawthorn. Ancient woodland flora, typical of woodland on limestone, will expand to cover a majority of the ground layer. A more diverse age structure will arise over time, with a greater proportion of mature trees and deadwood habitat, as well as abundant natural regeneration. Remnant PAWS features will be secure and enhanced. Beech will be present but not dominant within the canopy, while conifers and exotics such as Norway maple and Sweet chestnut will remain as scattered individuals. Invasive non-native species will be rare or absent, with no reproductive specimens.

The main track/ ride through the site will be maintained by rideside coppicing to provide a lighter corridor, graduating to high forest behind, for the benefit of species such as Stinking Hellebore and to provide foraging opportunities for species such as bats and butterflies.

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

Threatened PAWS remnants will be improving in condition (with an increasing spread of remnant features classed as secure/ robust), when the site is re-surveyed in 2022 and again in 2027. By 2022, all canopy/ subdominant broadleaves should have been adequately released by thinning. While it may be optimistic to expect a marked response in just five years in terms of the ground and field layer, at the 2027 PAWS review, a noticeable response in the ground flora and natural regeneration of native shrubs and trees should be recorded. In this period, there will be detectable improvement in structural diversity within the more uniform stands. Invasive species will be rare or absent, with no reproductive specimens.

This will be achieved by gradual repeat thinning and invasive control. Beech, larch and Corsican pine in PAWS zones 2,3,4,7,8,9 & 10 will be lightly thinned (<20%) once more during the coming plan period (2020-22) with the aims of securing the ground flora, releasing the existing subdominant broadleaf component, and encouraging natural regeneration in the field layer and under-storey. Invasive cherry laurel, holm oak and snowberry will be controlled wherever it occurs, by pulling seedlings or treating mature plants by targeted application of glyphosate as per Trust pesticide policies.

PAWS zone 1 will continue to be managed in blocks on a (10-15 year) rotational basis, as it has been since the early 2000s, as rideside coppice, providing a structurally diverse zone c 10m wide on the upslope side which graduates into the high forest stands adjacent.

Much deadwood will be retained from thinning operations in order to benefit biodiversity and build upon scant deadwood volumes, however, where access can be obtained, opportunities to remove up to 50% as products such as firewood will be explored.

5.2 Semi Natural Open Ground Habitat

Description

Notable open ground habitats at Coed y Gopa include species rich calcareous (to neutral) grassland, limestone scrub and ride-edges.

Areas of species-rich calcareous (to neutral) grassland (areas of CG1, CG2 and MG5 NVC communities) are present throughout the site, supporting over 100 species of vascular plant. Calcareous grassland is mainly concentrated on Copa'r Wylfa (OG1); on the south-eastern rocky outcrops (OG2); and along the main ride sides/banks. An old track cutting (OG3) has some potential to develop interest. Many species typical of unimproved and calcareous grassland occur, including Crested hair-grass, Quaking-grass, Glaucous sedge, Yellow-wort, Carline thistle, Lady's bedstraw, Ploughman's spikenard, Wild marjoram, Wild thyme, Burnet rose, Common rock-rose, Small scabious, Common centaury, Common spotted-orchid, Fairy flax, Cowslip, Burnet saxifrage, Eyebright, Salad burnet and Stinking hellebore (a Nationally Scarce species). The majority of the grassland is threatened by scrub invasion including non-native species such as holm/evergreen oak and cotoneaster and also native tree/shrub species such as gorse.

On the south-eastern rocky outcrops, a diverse scrub now dominates the majority of the former area of grassland including native limestone scrub species such as spindle and buckthorn, which is of some interest in its own right. Stinking Hellebore is also present here. Native tree species are starting to regenerate in this area.

Scrub habitat also occurs in managed woodland edge habitat adjoining the main rides. The main rides through the site are significant features supporting and linking open habitats and have been maintained by mowing. The main ride through Coed y Gopa is a wide surfaced forestry track whilst the ride through Coed Bryngwenallt is narrower and un-surfaced.

Significance

Lowland calcareous grassland is a priority UK habitat and Coed y Gopa is located in an area notable within North Wales for its concentration of this habitat. Thus, the species-rich grassland and rides are an important and integral semi-natural open ground component contributing to the overall biodiversity of the site. The grassland and ride side coppice areas support notably high vascular plant diversity and are likely to be of high value to invertebrates (including notable species such as Grayling butterflies) and as bat foraging habitat. Nationally Scarce Stinking Hellebore is present, particularly in open scrub habitat. Open habitats greatly enhance the internal landscape and quality of public enjoyment at the site. Site neighbours have also reported reptiles using these open areas for basking. Open ground features are mentioned in the site's SSSI description, although they are not the primary reason for designation.

Opportunities & Constraints

The existing areas of grassland require on-going management if they are to be retained (particularly control of invasive scrub including cotoneaster). The lack of safe machinery and grazing access means that grazing will be dependent upon rabbit populations, while cutting will be relatively expensive and will require manually operated methods.

The scrub habitat on the south-eastern rocky outcrops are of particular interest (eg: supporting spindle, buckthorn and stinking hellebore) but will require management to maintain the scrubby open structure and diversity of species and to prevent natural succession to woodland.

The creation of the forest track, approximately 25 years ago, increased the area of open ground habitat and created opportunities for ride management.

There is at present support from NRW as the statutory body for management works such as coppicing and scrub clearance that are likely to benefit invertebrates and vascular plants (including Nationally Rare Stinking Hellebore) and to enhance the value of the rides to most bat species. NRW currently provide support via a Management Agreement under Section 15 for 21 years from 01.05.97 (50% contribution towards agreed costs up to an agreed annual maximum for conservation works).

Factors Causing Change

Scrub and coarse vegetation, including invasive non-native species, will continue to invade all open habitat areas without management. The scrub areas are likely to succeed to woodland or become dominated by gorse without selective management. As surrounding woodland matures, shade levels will slowly increase.

Long term Objective (50 years+)

Coed y Gopa will continue to support a diversity of habitats, particularly limestone grassland and scrub. There will be least 0.6ha of species-rich grassland at the site supporting a wide range of vascular plant species typical of the habitat (including species which have been listed as key grassland species at this site). Scrub will be at acceptable levels within grassland habitat (<10% cover).

There will be at least 0.25ha species rich open scrub, supporting a high diversity of natives shrubs and plants including spindle, buckthorn and stinking hellebore on the SE rocky outcrops.

Wide, open rides will be maintained with scrubby woodland edge and linear open habitat of value to vascular plants (including Nationally Scarce Stinking Hellebore), invertebrates and bats.

Invasive non-native species will be rare or absent.

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

A minimum of 0.6ha species-rich grassland will be maintained across the site. Key species identified in the 2001 grassland survey will continue to be present in open areas across the site. Scrub will not exceed 10% cover within these areas. The grassland will not anywhere be significantly shaded in the middle of the day in early summer. This should be assessed annually to inform work programmes.

There will be a minimum of 0.25ha of species-rich open scrub, mainly on the SE rocky outcrops. The average canopy height will not exceed 3 metres and key species including spindle, buckthorn and Stinking hellebore will be present. This should be assessed annually to inform work programmes.

Along the ride edge, coarse vegetation and woody species will be occasional and contained by an annual mowing regime (alternating sides but cutting the tall herb patch by OG1 every year). This should be assessed annually and work programmes modified if necessary.

Invasive non-native species will be rare or absent with no reproductive specimens within the grassland area. Invasives such as cotoneaster, holm oak and cherry laurel will be controlled where they occur within this habitat as part of a site-wide control programme.

While somewhat mobile, stinking hellebore will continue to occur frequently throughout the woodland, scrub and open ground areas.

5.3 Species or community

Description

Species - Lesser horseshoe bats and their roosts.

The site is designated SSSI for its lesser horseshoe bat roosts (hibernacula) including the second largest hibernaculum in North East Wales. There are two main roosts: one in the quarry face to the south-east (sub-compartment 2e), known as Castell Cawr cave, the other within Ffos y Bleiddiaid. Other mine features are also known to support overwintering bats. Periodic counts undertaken by Clwyd Bat Group in Castell Cawr cave have recorded on average around 50 individuals with a maximum in 1993 of 131 individuals, with smaller numbers occupying other spaces. These main known roosts are protected from disturbance by grilling and fencing. In addition to Lesser horseshoe bat, Daubenton's and Natterer's bats have been recorded.

Significance

Regionally significant winter roosts for Lesser horseshoe bat - a European protected species and a Section 7 priority species for Wales. The bat roost is the reason for the site's SSSI designation. There is potential for species such as the greater horseshoe to use the site as they move northward in a warming climate.

Opportunities & Constraints

The roosts should not be disturbed during the period of winter hibernation, including undertaking woodland management work in the vicinity. Bats may start to use the features as early as October and vacate the space as late as May, however, the peak season is from December to April.

Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and are also European Protected Species. Surveys of the feature require the involvement of licensed bat workers and health and safety matters are a constraint on access to the roosts.

Habitat structure in the immediate vicinity of the roosts needs to remain stable including open habitat at Castell Cawr cave but with vegetation growing close to the roost entrance to provide cover for dispersing bats and dense woodland surrounding the Ffos roost and throughout the site (favoured foraging habitat).

Factors Causing Change

Sudden loss of tree cover in vicinity of roosts due to storms or disease could impact on the suitability of the roost. Diseases affecting bat populations could impact on numbers. Natural collapse of mining features may alter roost suitability. Unauthorised access to the roosts during hibernation could cause disturbance and ultimately impair the species' ability to overwinter successfully.

Long term Objective (50 years+)

Suitable and stable environmental conditions will be maintained within and in immediate vicinity of known bat roosts. Roost entrances to remain unobstructed to retain airflows, and human disturbance will be minimised. The Woodland Trust will maintain an ongoing dialogue with statutory agencies and the local bat group to address where possible any physical issues around the roosts.

The site will support a range of suitable foraging habitats, including open rides, coppice coupes, and undisturbed dense woodland.

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

Grilles will be maintained to prevent unauthorised access to the roost caves (see also Risk Assessment). Some monitoring of the bat population should occur at least once during the plan period. NRW's target for the SSSI is a minimum of 50 hibernating Lesser horseshoe bats: allowing for natural fluctuations in the population, it is expected that the population will remain broadly stable at this level, or increase. If there is a significant and sustained decrease in numbers over time, advice will be sought from NRW/ Clwyd Bat Group on any achievable improvements hat might benefit the species. See also Objectives for PAWS and Open Ground Habitat.

5.4 Archaeological Feature

Description

Castell Cawr or "giant's castle" is an Iron Age hillfort and covers an area of approximately 2ha. It is located on the top of precipitous cliffs and has impressive defences: an earth rampart with external ditch exists to the north, west and south which ranges from 5m to the north to 8-10m close to the main entrance. The stony nature of the rampart suggests a stone built breastwork. Along the western side of the hillfort are a series of outer defences. These consist of at least two ramparts and ditches which have been constructed in such a way as to provide a staggered approach to the main entrance. Whilst the site has not been excavated, ground survey has revealed a number of hut platforms within the ramparts. Several fine old beech trees (including a pollard) and a single large sycamore occur in the south-east corner. (Note that the Scheduled Ancient Monument extends beyond the hillfort structure to the north through sub-compartments 1a and 2b.)

Ffos y Bleiddiaid also crosses the southern end of the ancient woodland site and is of historical and geological interest. A lead and copper ore vein, it is believed locally to have first been mined by the Romans, although this is unsubstantiated: certainly, however, by the Mediaeval period, the vein was being worked and by the 19th century had been exhausted. The Ffos remains a significant feature visible on site. Coed Bryngwenallt also contains remnant structures and an impressive roadside wall which contribute to the character of the landscape.

Other minor mining and quarrying features occur throughout the site.

Significance

Castell Cawr is a particularly fine example of an Iron Age hillfort and is protected as a Scheduled Ancient Monument. Ffos y Bleiddiaid is also of historical and geological interest, as well as supporting suitable roost spaces for bats. These features add to the intrinsic appeal of the site for visitors.

Opportunities & Constraints

There is an possibility to enter into Management Agreements with CADW in order to prevent any deterioration of the structure which may arise as a result of public access.

Tree growth on the Scheduled Ancient Monument, as it matures, will increase the likelihood of windthrow and root damage, therefore management in the SAM should promote stand stability.

Natural succession to woodland will result in the impressive ramparts becoming obscured over time: management work will be necessary to maintain open areas for interpretative purposes.

Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and are also European Protected Species and are present in the Ffos. Access to the Ffos is also limited for health and safety reasons.

Factors Causing Change

Natural succession to scrub/ broadleaved woodland will occur around the ramparts without intervention. Easily accessible sections of ramparts can be at risk of erosion caused by public access. Extreme weather events could cause damaging windthrow on the rampart features.

Long term Objective (50 years+)
The Scheduled Ancient Monument and other historic features will be undamaged and in stable condition, with minimal damage from public access and windthrow. The summit ramparts will remain clear of woody growth to allow their appreciation by visitors. The historical significance of the site will be understood by visitors.
Short term management Objectives for the plan period (5 years)
Paths and desire lines across the ramparts must not result in unacceptable damage to the archaeological feature: these paths will need to be monitored at least once during the plan period for signs of rutting, width-ward expansion, and loss of grass cover. The existing open area and ramparts at the summit should remain clear of woody growth and coarse vegetation (this will require cutting and coppicing on a three-year rotation, following methods approved by CADW). The interpretation panel at the hillfort will be maintained.

5.5 Connecting People with woods & trees

Description

The site is easily accessible from Abergele, either by vehicle, bicycle or on foot via connecting rights of way. There are eight public entrances. The main entrance offers informal off-road parking for about 8 cars and is signalled by a ladderboard. An orientation panel and dog waste bin are also provided. A vehicle barrier and gate deter unauthorised vehicle access up the main management access track, which provides convenient vehicular access to parts of the wood. The north entrance is also signed by a ladderboard and a steep set of steps connect to the main ride (due for refurbishment 2017). The eastern 'zigzag path' entrance is framed by post and rail fence and a further orientation panel provided. Access to Coed Bryngwenallt and the southern side of Coed y Gopa is available from the public footpath network or via the bridleway that bisects the site. Small welcome signs are currently placed on the internal accesses from the bridleway and on the western stile entrance to Coed y Gopa, however, signage is missing from the two public footpath entrances (old gateway/ stile). Definitive rights of way are limited to the bridleway track between Coed y Gopa and Coed Bryngwenallt and a foot path through Coed Bryngwenallt, however, these are supplemented by permissive routes varying in gradient and surface. While in relatively good condition, some reorganisation might make these entrances more welcoming.

Coed y Gopa is situated on the outskirts of Abergele (population >10,000) and there is a population of roughly 80,000 within a 20 minute drive of the wood. It is easily accessible from the main A55. There are a number of features with strong appeal to visitors. The Iron Age hillfort Castell Cawr is an impressive piece of visible archaeology, as are mining remains at Ffos y Bleiddiaid. There is significant wildlife interest, including lesser horseshoe bats, birdlife and a range of habitats including species-rich grasslands, which in summer are colourful and attract butterflies. There are good local displays of bluebells. Coed y Gopa provides extensive opportunities for walking and the site boasts several viewpoints offering excellent views across town and coast, one of which is supplied with a bench. Coed y Gopa is one of three Trust woods with strong visitor appeal within north Conwy (also Marl Hall Woods and Parc Mawr). It features in longer town walks promoted by Abergele town council, taking in neighbouring features of interest such as Gwyrch Castle and Tower Hill (http://www.abergele-towncouncil.co.uk/abergele-walks.html).

The community of Abergele falls within the top 10% most deprived wards in Wales, particularly in terms of income, employment, education and health. There is a high proportion of social housing and the average age is markedly higher than that for the county and for Wales as a whole. That said, Conwy as a whole is relatively affluent and the North Wales coast also attracts a large number of visitors, a large proportion of whom come from North West England/ Merseyside and typically visit the area for seaside camping or caravanning holidays. (Welsh Government, Regional Tourism Profiles 2014; North Wales). The nearby campsite was provided with walks leaflets and was keen to promote walking opportunities to its guests.

There has been no recent numeric assessment of visitor numbers here, although visitor surveys of Trust woods in Wales in 2004 suggested that the majority of our audience were both very local and likely to be walking with a dog. In 2011/12, during preparation for an engagement project, consultation was carried out including the completion (on and off site) of 103 questionnaires. This suggested that there was a core of regular visitors to Coed y Gopa and even among those questioned off-site, half had visited the woods, while half of the non-visitors expressed an interest in visiting, the main reason for not doing so being a lack of knowledge. The current frequency of visits

was estimated at about 50 people per day during the summer months, with many repeat visitors. The three most common reasons for visiting were walking, dog walking, and watching wildlife. Ten percent also stated that they took their children to the woods. The main stated barriers to visiting were lack of knowledge and poor physical mobility/ health. There appeared from the survey to be a relatively low use of the site by groups, however this has increased following the establishment of a dedicated Forest School area in Coed Bryngwenallt as part of the subsequent project. The 2013/14 site improvement project also saw the creation of a site leaflet, renewal of info panels, the establishment of a waymarked route (since routinely vandalised) and the provision of wildlife- and history-themed trail guides (made available on the wood's web page). The project also saw the first summer family event held on the site, attracting 80 people and with transport provided from the town due to parking restrictions. Similar events was held in 2016 and 2017 with 40-50 attendees. Occasional small-scale volunteer led guided walks are also held through the Cerdded Conwy programme. There is a sense that family usage may have increased as a result of these actions, although there has been to date no follow-up survey.

There is currently a volunteer site warden who assists with monitoring the site and keeping things tidy and presentable. Historically, local volunteers were involved in establishing the path network and undertaking on-site works, however, this initial group are no longer active (it is over twenty years since acquisition).

Abergele has an infant, junior and secondary school, all of which have at some point visited the wood to use the Forest School area. These schools, at least for older pupils, lie within practicable walking distance of the wood. Adult education/ skills groups have also recently used this resource. Third parties have on occasion used the site for e.g. outdoor schools' theatre workshops in past years, and there are a handful of geocaches placed in the wood.

Significance

Coed y Gopa is an important local amenity within the community of Abergele, providing a freely accessible resource with potential to contribute to the health, well-being and education of local people from all walks of life. Its archaeological and wildlife features provide both visitor interest and the foundation for educational activities. At least in part, the site is relatively accessible and provides convenient locations for family events. Its intrinsic interest, coupled with fine views, are also likely to be enough to attract visitors from further afield.

Opportunities & Constraints

Constraints to access include a history of vandalism: in recent years, new benches and waymarking have been repeatedly damaged. There is some history of anti-social behaviour and unauthorised camping/ uncontrolled fires which have caused environmental damage and inconvenience to neighbours, although recently, incidences have been somewhat less frequent (in part due to publicity campaigns undertaken with the Arson Reduction Team and physical improvements such as barriers and the removal of a turning circle where 'parties' were often held during the summer at one time). There have also been recent reports of motorbikes using the footpath in Coed Bryngwenallt: it may in future be necessary to install a gate to deter this. History has therefore led to some rather 'industrial' barriers at key entrances: some visual improvements could improve the visitor welcome, although vehicle exclusion should be maintained.

Litter and dog fouling, particularly near the main entrance, detract from the visitor experience and

are the subject of periodic complaints. However, local dog walkers could be a key audience and the constraint might well be turned into an opportunity to engage with regular users and change the behaviour of a minority. Regular positive usage is also key to deterring anti-social behaviour and damage.

There is currently a degree of unauthorised cycling. While cycling on existing paths seems not to have engendered a great deal of user group conflict to date, the creation of excavated 'wild trails' cannot be encouraged on this sensitive SSSI/ ancient woodland/ Scheduled Ancient monument site.

The wood is subject to a number of conservation designations which may constrain certain practical interventions or activities within designated areas and certain recreational activities may need consent. Other environmental constraints exist: access near bat roosts must be restricted to limit disturbance to these protected animals. Creating new surfaced paths should also be avoided in ancient woodland habitats.

Parking is limited at the wood, with the main informal parking being somewhat rough limestone and difficult to modify, therefore for larger scale events, transport or alternative parking will need to be considered. The internal terrain also renders some parts of the site inaccessible to less mobile visitors, with one section of the circular trail involving a set of steeper steps. There is also a lack of public toilets nearby: previous events of any duration/ scale have required the siting of portaloos.

The bridleway track also provides access to a number of houses adjacent to the wood, who have rights to use the track where it crosses Trust property. It would be sensible to avoid placing any Trust signage at the roadside here in case it encourages visitors to drive up this rather rough track and inconvenience others who use the road for access.

However, there are a number of opportunities to engage with local schools and community groups. Recent contacts with Cartrefi Conwy (the local housing association) indicate an interest in working with us for the benefit of staff and the residents of >1000 properties managed locally. Local schools and community projects have used the Forest School area in recent times and this is likely to continue and increase as awareness rises: schools would probably be interested in taster sessions if these could be funded. The Town Council has also been a valued partner and has given support in promoting events, inviting the Trust to local shows and developing the town walks guide in 2010-11.

To date, relationships with local tourism businesses have not been developed to their full potential: there are several local camping and caravanning sites and the golf course is very close to the wood. Neighbouring sites such as Gwyrch castle are also a draw and have an associated community group who could be a potential partner.

The wood is a good potential venue for events and its location close to centres of population on the North Wales coast provides an opportunity to engage both with the local community and summer visitors (although it may be in competition with the seafront for this visitor segment). It lends itself particularly to Trust-wide themes around spring flowers (bluebells) and summer picnic-themed events, with the potential to engage visitors as supporters, for instance through family memberships.

While there may be opportunities for occasional practical volunteer events, the main on-site volunteering opportunities centre around visitor engagement (e.g. guided walks and events helpers

and wardens helping to maintain the visitor welcome). Local people may, however, be directed to activities such as Nature's Calendar, or campaigning. Third party interest groups may have an interest in biological recording.

There is some local interest in firewood products, which may link to woodland management objectives: a future event timed to coincide with thinning operations could highlight the Trust's work in ancient woodland restoration and combine this with firewood sales/ giveaways.

Factors Causing Change

The current funding climate may make it challenging to identify external funding for pure biodiversity engagement and events, with issues such as health and well-being increasingly driving the public agenda. Abergele is already ahead of the curve in terms of our aging population: a growing proportion of communities may experience barriers to access through diminished mobility and fitness. Future council charges for waste disposal could drive an increase in incidences of flytipping. School budget squeezes are likely to reduce resources for off-grounds activities. Increases in visitor usage, or new trends in recreational activities, could put pressure on existing infrastructure or cause user group conflict. There may be an increasing emphasis on mobile technology and 'intellectual access' in the engagement field. The eventual availability of Trust schools' offers in Wales may help in building relationships with local educational groups: success may depend on the availability of bilingual material.

Long term Objective (50 years+)

In the long term, the site will continue to be well used by the public for recreation and educational purposes, making use of an extensive network of well-maintained paths and viewpoints. Visitor numbers can be expected to increase approximately 20% (?) from current levels (these will be determined by a visitor survey/ re-survey in ?? footfall counters?). A large proportion of repeat visitors will be drawn from the community of Abergele: local people will value the recreational opportunities presented by the woodland and will have a high level of awareness of the Woodland Trust's role as owner and manager of the wood. Dog walkers and mature walkers will be numerous, however, there will also be increasing use by older families and community, health-based and educational groups. The Trust will encourage regular use of the Forest School area for curriculum-linked activities, supported by our schools' resources offer (when available). The Trust will also facilitate community use of the wood for activities such as outdoor gym, biodiversity/ heritage themed visits and well-being activities such as mindfulness or woodland crafts. New visitors - including tourists to the area - will be able to access enticing off-site information about the wood and on arrival will find the entrance points welcoming, with information to enhance their visit.

Issues such as dog fouling and littering will be reduced through a combination of targeted engagement (for instance through dog-themed events and communications) and on-going maintenance by volunteers and contractors. Increased usage will also deter anti-social behaviour as the community act as 'eyes and ears'. Recreational activities will not have a detrimental impact on the wood's natural or historic features.

There will be walking options to cater for a range of abilities, with the main management access track providing relatively wide, easy-gradient, short viewpoint walks, while the rest of the path network will provide a more challenging experience. Waymarking will help to orient first time visitors. Public safety will be maintained by a regime of inspection and maintenance governed by the site hazard assessment.

There will be an annual event programme allowing new and repeat visitors to interact with the Trust and Trust volunteers, particularly benefitting local and visiting families or older walkers.

Visitors will be inspired to find out more about the Trust and to support our work.

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

By December 2018, all the wood entrances will have been refreshed and will meet welcoming sites programme criteria: this will entail the replacement of any Foamex prohibitive signage with more attractive wooden versions; the relocation of the interpretation panel at the main entrance; the installation of new welcome signage at all the minor entrances (with the exception of the bridleway, see Constraints); post and rail fencing along the Bryngwenallt track entrance; renewal of the outer car park barrier; repainting of the black vehicle barrier; and, subject to Council agreement, the relocation of the dog waste bin inside the gate/ its replacement with a multi-purpose bin. All estate furniture (including the Forest School area), safety fencing and entrance ways will be maintained and littering controlled as part of a budgeted maintenance programme. This is likely to involve replacement of Forest School infrastructure and orientation panels around 2020 (subject to need). Vandalised waymarking along the circular walk will be replaced as required so that the waymarked route is maintained throughout the plan period.

By end 2020, Coed y Gopa, as one of three welcome sites in Conwy, will be promoted by way of a cluster booklet of themed walks/ activities, encouraging family and educational usage and family membership. The theme of the Coed y Gopa trail could be 'travelling back in time' (involving a refresh of the existing trail guides and waymarking scheme).

By the end of the plan period, at least two more volunteers will have been recruited in the county, to assist with wardening and/ or events/ walks. These wardens will be a visible presence and source of information for visitors.

Baseline visitor data will be obtained by end 2018 as part of a multi-site survey to be conducted by the engagement team. (Footfall counters will be installed at key locations to monitor future changes.) Visitors will have increased by ?% by the time of resurvey in ?

Annual family events will take place at the wood, attracting over 300 participants during the coming plan period: these visitors will be signposted to the Trust's family offer, including Nature Detectives and family membership. At least one of these events will be specifically targeted to engage with dog walkers and encourage adherence to the Trust's dog walkers code of conduct.

The Trust will engage with local community and educational groups in order to facilitate their usage of the wood, including promoting our green schools package when this is rolled out in Wales (TBC). Any infrastructure required to support this activity (subject to consultation e.g. outdoor gym items) will be installed by the end of the plan period. Group usage, both self-led or Trust-led, should comprise at least 300 person visits (including a high proportion of children and young people) during the course of the next five years, exposing visitors to the special features of the woodland and the health and well-being benefits of outdoor recreation.

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	4.02	Beech	1953	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Connecting People with woods & trees	Ancient Woodland Site, Scheduled Ancient Monument, Site of Special Scientific Interest, Special Landscape Area
A mixed beech/pine plantation (dating back to the 1950s) on ancient woodland, running along the north-western boundary of Coed y Gopa below the main ride. Initial thinning and removal of Corsican pine has been undertaken, although the stand remains relatively even aged and shady. Occasional (locally frequent) sycamore, sessile oak and ash are present in the canopy and occasional hawthorn, wild privet and young sycamore and beech in the shrub layer. There is some localised natural regeneration, mainly of ash, holly and sycamore. Much of the ground is bare but ivy is locally frequent and other occasional species include bramble, honeysuckle, wood sorrel, false brome, male-fern, wood avens, lords-and-ladies and hart's-tongue fern are present. The sub-compartment is bound by pasture to the west and the main ride to the east: ancient woodland flora is largely confined to these lighter margins. A small quarry is present at Copa'r Wylfa supporting species-rich calcareous grassland with species including Crested hair-grass, Quaking-grass, Common rock-rose, Mouse-ear hawkweed, Harebell, Ploughman's spikenard and Stinking hellebore. Invading scrub and tall herb are frequent here. The western part of Ffos y Bleiddiaid crosses the sub-compartment to the south. The Trust's car park and an information board are present on the western boundary.							
1b	1.15	Corsican pine	1953	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Ancient Woodland Site, Site of Special Scientific Interest, Special Landscape Area

Corsican pine plantation (planted in the 1950s) on the south-western edge of Coed y Gopa. Although not confirmed ancient woodland, ancient woodland indicators are apparent. Well spaced (thinned) planted pine dominates with scattered young sycamore, ash, oak, beech and wych elm. A moderately dense understorey is developing, largely ash and sycamore with elm, hazel, cherry and self-set beech, with occasional oak, spindle, privet and gorse. Shade is relatively dappled. Bramble, previously dominant, is now locally abundant. The field layer includes seemingly robust patches of bluebell and dog's mercury, with Stinking hellebore, Wild Strawberry, False brome, False oat-grass and Arum, with the best ground flora to the western edge. Broadleaves including ash and cherry have started to reach the canopy. The sub-compartment is bound by pasture to the west and the main ride to the east.							
2a	2.12	Beech	1953	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Ancient Woodland Site, Site of Special Scientific Interest, Special Landscape Area, Tree Preservation Order
Predominantly beech (locally pine) plantation on an ancient woodland site in a prominent position along the main ride. Records suggest that some of the area was planted in the 1950s, however, the pine and beech now dominant in this area would appear to comprise some of the youngest crop trees on the site. Small areas have been thinned at various times between the 1980s and 2011. The sub-compartment runs from the northern boundary of the site upward along the main summit ridge, Ffos y Bleiddiaid forming its southern boundary. The field layer is generally quite sparse, however, ivy, bramble, Herb-robert, Broad buckler-fern, Male-fern and Hart's-tongue fern are locally frequent. Where thinning and loss of pines to disease has opened glades, privet, bramble and fern have been first to respond. There are a handful of multi-stemmed oaks which potentially are coppice specimens pre-dating certainly the current crop. In coupes on the margins, ash, oak and sycamore have regenerated well and there are occasional young yew and patches of spindly ash, elm and sycamore regeneration with the zone itself. There is some deadwood which, while not perhaps ancient, predates the current crop. Cherry laurel occurs rarely. Clematis is locally prominent and buddleja occurs along the ride side. The compartment includes a steep area of open grassland in an old track cutting, which is starting to be colonised by scrub, including pine regeneration.							
2b	3.31	Mixed native broadleaves	1990	PAWS restoration	Archaeological features, No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Connecting People with woods & trees	Ancient Woodland Site, Scheduled Ancient Monument, Site of Special Scientific Interest, Special Landscape Area

This west-facing sub-compartment lies above the main ride and runs north-south on the west flank of summit ridge. It is mapped as ancient woodland, subsequently planted with pine and beech (1950s) but heavily thinned in the mid 1980s and again between 2001-2004. To the north, it now comprises mainly young mixed naturally regenerated woodland (canopy height some 8-10m) dominated by beech, ash, oak, sycamore, silver birch and yew - each locally prominent – with remaining pines acting as a nurse crop for some significant broadleaf regeneration: particularly to the north of the zone, there is a dense understorey, including abundant yew with frequent privet, hawthorn, ash, sycamore, elm, hazel and occasional oak regeneration. Bramble is frequent in the field layer but there are also isolated patches of AWI species including woodruff, Arum, Galium, and bluebell. Further south, ferns and ivy become more evident under an increasing frequency of beech, with some bare ground, however, ash regeneration remains abundant in the field layer. Occasional precursor deadwood and regenerating pre-crop stumps occur. Species-rich and calcareous grassland occurs on the rocky outcrop at its northern end (contiguous with the area of species-rich calcareous grassland at Copa'r Wylfa). The main ride bounds the compartment to the west and along this margin the trees have been coppiced in blocks of various heights and ages on a 15 year cycle. The Ffos crosses the sub-compartment towards the north.

2c	10.00	Mixed broadleaves	1990	PAWS restoration	Archaeological features, No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Scheduled Ancient Monument, Site of Special Scientific Interest, Special Landscape Area

The compartment comprises west facing areas along the summit ridge and includes the lower areas of the Scheduled Ancient Monument. The area lies outside the area of confirmed PAWS but with some AW characteristics and is one of the best locations for bluebells on the site. The planted beech, now mostly early mature, were thinned in a previous plan period and the compartment is now developing a more varied age structure in parts, while remaining more one-dimensional in structure in others. The planted areas grade into semi-natural woodland to the margins, with broadleaves including ash and cherry asserting themselves with the canopy. A moderately dense understorey is developing locally, largely ash and sycamore with elm, cherry, hazel and beech regeneration. The field layer includes seemingly robust patches of bluebell and dog’s mercury, with some more diverse areas, as well as ivy and ferns in places. The best flora seems to be associated with outlying archaeology/ banks associated with the hillfort. The current light levels appear to keep coarse vegetation growth in check on the lower ramparts, ensuring the archaeological interest remains visible.

2d	2.80	Mixed native broadleaves	1960	High forest	No/poor vehicular access to the site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Connecting People with woods & trees	Ancient Woodland Site, Scheduled Ancient Monument, Site of Special Scientific Interest, Special Landscape Area
This sub-compartment comprises the central hill fort structure (a SAM) and supports regenerating secondary woodland co-dominated by ash and sycamore with occasional sessile oak, rowan and beech and with frequent to locally abundant sycamore and ash coppice regrowth and rowan, hawthorn, spindle and blackthorn. The ramparts generally support dense young scrub (mainly ash, hawthorn, beech, blackthorn, oak, silver birch and pine) but parts of the ramparts around the main entrance (western side) have been cleared of woody growth to expose the earthworks. To the south-east there are a number of mature to over mature beech and sycamore pollards/stubs. The field layer vegetation is generally tall and dense with bramble, dog's mercury, ivy, ground-ivy, common nettle, male-fern, broad buckler-fern, giant fescue, false brome, wood millet, hart's-tongue fern and bearded couch, although there are open grassy areas where the ramparts have been cleared. Mown paths are maintained within the ramparts. The information panel located at the entrance has been vandalised and is missing.							
2e	7.65	Beech	1900	PAWS restoration	Landscape factors, No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Ancient Woodland Site, Site of Special Scientific Interest, Special Landscape Area, Tree Preservation Order

This north-east facing sub-compartment, running along the steep east flank of the hill, lies within the area of confirmed ancient woodland, however, it has been subject to plantation with beech, (some of which was probably planted over 100 years ago). The main regeneration under beech canopy comprises yew and beech. In historically thinned areas, however, the compartment supports more mixed woodland with a diversifying age structure and only occasional single mature conifers and beech present. The canopy here includes ash and sycamore, with a developing shrub and field layer including elm and bramble. While ivy and ferns remain abundant - as is typical of east facing slopes on site - there is good native tree regeneration and ground flora including wild strawberry, Dog's mercury and Herb-robert. Much of the compartment should therefore be considered Secure PAWS. Contained within this area atop steep limestone cliffs to the south of the compartment is an open glade supporting species-rich calcareous grassland and scrub, maintained by active management. The grassland here is particularly species-rich supporting areas of both CG1 and CG2 NVC communities and a number of vascular plant species not found elsewhere on site. Adjacent pines were felled in 200? in order to reduce shading and to encourage expansion of the calcareous grassland upslope. Areas of recently developed scrub also occur on the eastern slopes, with a diverse species composition including gorse, ash, spindle, buckthorn, wych elm, oak, beech, hawthorn and hazel. Stinking hellebore (Nationally Scarce) occurs in both the grassland and scrub areas. The compartment also contains a number of caves which contain bat roosts. Invasive species such as Holm oak, cotoneaster and Cherry laurel are occasional throughout.

2f	2.98	Hybrid larch	1960	PAWS restoration	Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Connecting People with woods & trees	Site of Special Scientific Interest, Special Landscape Area, Tree Preservation Order

Primarily hybrid larch plantation (planted in 1960 mainly on the ancient woodland site) with a significant proportion of planted broadleaves, particularly wild cherry, but also sycamore, beech, Norway maple, whitebeam and ash, especially to the south. Scattered large mature beech and sycamore are present, especially along the northern edge of the sub-compartment. The larch crop, lightly thinned in 2008-09, is not of high quality with many twisted and strongly leaning specimens on a steep east-facing slope with shallow calcareous soils. There is some understorey developing, mainly elm, beech hazel and gorse. Little AWI flora on steep east-facing slope: the sparse ground layer consists mainly of ivy and hart's tongue fern, typical of east-facing slopes on site, however occasional False-brome, Dog's mercury and Spurge laurel are present. Ivy also covers the tall cliff on the south-western edge of the sub-compartment. Native clematis is naturally common. Invasives and garden escapes are also present, including cherry laurel and Montbresia. To the south-east, below the cliff, is glade supporting calcareous to neutral, species-rich grassland including a number of species rare or absent elsewhere on site such as common twayblade, burnet saxifrage and agrimony. The cliff supports a major lesser horseshoe bat hibernaculum (Castell Cawr cave) and a further minor roost. There are no maintained pathways within the compartment.

2g	2.78	Corsican pine	1950	PAWS restoration	No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Connecting People with woods & trees	Site of Special Scientific Interest, Special Landscape Area, Tree Preservation Order
This sub-compartment occupies south facing slopes to the south of Coed y Gopa. The majority of the compartment supports Corsican pine planted in 1969 on an area previously supporting calcareous grassland, although some AWI indicator species are also present suggesting partial historic woodland cover. The plantation was heavily thinned in the 1980s resulting in occasional to locally abundant young regenerating silver birch, rowan, ash, oak and sycamore. A management access track was constructed through the sub-compartment (and some further thinning of pine undertaken) in 2004. A moderately dense understorey has recently developed, largely ash and sycamore regen with elm, hazel, cherry and self-set beech, and occasional oak, spindle, privet and gorse. The field layer includes seemingly robust patches of bluebell and dog's mercury, with Stinking hellebore, Wild Strawberry and Arum. Bramble and ivy are locally abundant on south facing slopes, with the best ground flora to the west. Broadleaves including ash and cherry have started to reach the canopy. Native clematis is frequent. Species typical of more open calcareous habitats such as Stinking hellebore occur occasionally within the plantation, especially along the newly constructed track.							
2h	0.21	Norway maple	1990	Min-intervention	Legal issues	Connecting People with woods & trees	Special Landscape Area, Tree Preservation Order
A small area of mown grass and young woodland, comprising primarily Norway maple, with some sycamore and elm, to south of Yr Allt Cottage and Hill Cottage. The field layer is dominated by ivy with false-brome and tutsan. Has been effectively managed under licence as part of garden of adjacent property for some time.							
3a	3.04	Mixed broadleaves	1950	High forest	Archaeological features, Housing/infrastructure, structures & water features on or adjacent to site, No/poor vehicular access to the site	Connecting People with woods & trees	Special Landscape Area, Tree Preservation Order

Mixed mature plantation mainly of non-native broadleaves (probably planted early in 20th century) in and around an old quarry working to the east of Coed Bryngwenallt. Frequent species include Norway maple, sycamore, beech, sweet chestnut, holm oak, common lime, larch and pine. The shrub layer also includes many exotic species such as box, rhododendron, cherry laurel and oregon-grape though wych elm, ash, hawthorn, wild privet and hazel also occur. The field layer comprises dog's mercury, ivy, false-brome, hart's-tongue fern, spurge laurel, woodruff, sanicle and wood sage. A public footpath passes through the sub-compartment and there are numerous old boundary walls. The eastern boundary follows a road. The area was once connected to the rest of the Bryngwenallt estate by a passageway under the road, no longer in use.

3b	6.90	Corsican pine	1970	PAWS restoration	Archaeological features, Sensitive habitats/species on or adjacent to site	Connecting People with woods & trees	Ancient Woodland Site, Special Landscape Area, Tree Preservation Order

Corsican pine plantation (planted 1970) on the upper slopes (western side) of Coed Bryngwenallt, first thinned in 2005 (and again in 2014). Although outside the area confirmed as PAWS, there has been a strong response to a precautionary thin and there is a diverse broadleaved component including some mature specimens. Shows good potential for restoration to a more semi-natural state. Native tree regeneration is abundant in the ground, field and shrub layers, especially ash but also oak, cherry, elm, spindle, blackthorn and hawthorn, hazel and holly, alongside frequent sycamore and birch with these species locally dominant on rocky outcrops and in thinned areas. There are a few pre-plantation trees including oak and a coppiced sweet chestnut, not overtopped by conifer. The field layer includes abundant Dog’s mercury with frequent bluebell and occasional Spurge laurel, Galium and Arum. The ground flora is more robust and varied than in some areas of confirmed PAWS further northward, although to the south of the footpath, the ground is mainly bare with sparse dog's mercury, ivy and broad buckler-fern, not helped by extensive fire damage here sustained in spring 2011. Stinking hellebore is also present.A small area of semi-natural woodland occurs on the southern edge of the compartment. Here ash, sycamore, oak, blackthorn, hawthorn, hazel and spindle are frequent over a well-developed field layer including ivy, false-brome, dog's mercury, wood avens, herb robert, honeysuckle, bluebell, wild madder, spurge laurel and stinking hellebore. The main ride and a public footpath pass through the sub-compartment.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2017	2e	Thin	2.00	80	160
2020	1b	Thin	1.15	60	69
2020	2f	Thin	2.98	50	150
2020	2g	Thin	2.78	60	166
2020	3b	Thin	6.90	60	417
2021	1a	Thin	2.97	60	177
2021	2a	Thin	2.12	60	128
2021	2b	Thin	1.65	60	99
2021	2c	Thin	5.65	60	337
2021	2e	Thin	6.04	60	360
2028	1b	Thin	1.15	60	69
2028	2f	Thin	2.98	60	180
2028	2g	Thin	2.78	60	166
2028	3b	Thin	6.90	60	417
2029	2a	Thin	2.12	60	128
2029	2a	Thin	2.12	60	128
2029	2c	Thin	9.99	50	500
2029	2e	Thin	5.00	60	300
2031	2a	Thin	2.00	0	0

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.