



COED CADW
WOODLAND
TRUST

Coed Hafod y Llyn

Management Plan 2017-2022

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THE WOODLAND TRUST

INTRODUCTION

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

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

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

PLAN REVIEW AND UPDATING

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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

There is a formal review of this plan every 5 years and a summary of monitoring results can be obtained on request.

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland. Our strategic aims are to:

- Protect native woods, trees and their wildlife for the future
- Work with others to create more native woodlands and places rich in trees
- Inspire everyone to enjoy and value woods and trees

All our sites have a management plan which is freely accessible via our website www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) 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 Hafod y Llyn
Location:	Maentwrog
Grid reference:	SH648412, OS 1:50,000 Sheet No. 124
Area:	16.57 hectares (40.95 acres)
Designations:	Ancient Woodland Site, National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation

2.0 SITE DESCRIPTION

2.1 Summary Description

This secluded ancient oakwood, once part of an historic estate, slopes gently down to Llyn Mair. A network of easy paths allow spectacular views over Snowdonia National Park, while steam trains of the iconic Ffestiniog Railway snake around the boundary - making it the perfect woodland destination for train buffs!

2.2 Extended Description

Coed Hafod y Llyn is situated on a "horseshoe" of ground which slopes down to Llyn Mair. This old estate woodland has a partly ornamental history but was also coniferised in 1968/9. Scattered mature oaks remain and there is some lichen interest. Under Coed Cadw ownership conifers have been removed entirely or thinned throughout as part of an incremental PAWS restoration project. This process allows the natural regeneration of broadleaves to supplement the restocking with native broadleaves. A variety of specimen exotic trees were planted during coniferisation and these are being retained selectively as part of the historical landscape. Rhododendron ponticum has been removed comprehensively but reinfestation from external seed sources remains a problem. Rocky ridges and several small streams add to habitat diversity.

Coed Hafod y Llyn is part of an extensively wooded locale in the Vale of Ffestiniog. It lies adjacent to a National Nature Reserve and woodlands owned by the Snowdonia National Park Authority. It is well-used in the tourist season but is also an appreciated local amenity. It has excellent internal tracks which also link to a network of walking routes on surrounding land, which are promoted by way of a leaflet.

Additional features of interest include a small Victorian ornamental pond near Llyn Mair and two sculptural seats.

The key features of Coed Hafod y Llyn are:

- Connecting People with woods and trees;
- Planted Ancient Woodland Site in restoration;
- Historic Features.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

By bus:

The nearest bus stop is next to the Oakley Arms on the A487. Route 1 (Porthmadog - Penrhyndeudraeth - Maentwrog - Blaenau Ffestiniog), or X32 (Bangor - Porthmadog - Dolgellau - Machynlleth - Aberystwyth).

By train:

The nearest mainline train station is Penrhyndeudraeth, around two miles (3.2km) away. This is serviced by Arriva Trains Wales (Cambrian Coast timetable). Ffestiniog Narrow Gauge Railway has a train station at Tan y Bwlch, half a mile (0.8km) away from the wood.

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

By car:

Heading north along the A487 towards Porthmadog, ignore the left turn for Maentwrog and Harlech (A496), and continue for a further quarter of a mile (0.4km). Then turn right at the next junction, next to the Oakley Arms and signposted for Rhyd (B4410). Continue until you can see a lake (Llyn Mair) to the left. Coed Hafod y Llyn is located at the back end of the lake. Enter through the Snowdonia National Park picnic area on the left side just after the lake. There is parking available in the Natural Resources Wales car park opposite the picnic area.

3.2 Access / Walks

Coed Hafod y Llyn is accessible via a network of footpaths from parking at either Plas Tan y Bwlch (the National Park study centre), Tanybwllch station on the Ffestiniog Railway or the NRW car park at Llyn Mair. Numbered waymarker posts exist to help with orientation throughout the woodland complex.

There are seven public entrances:

- two entrances on either end of the lake. These are accessed through Snowdonia National Park properties.
- three top entrances with wooden vehicle gates/stiles, situated where the footpath crosses or goes beneath the Ffestiniog Railway line.

* A circular route around Llyn Mair also crosses the site, entering by the pond and exiting through a low wall.

The wood contains a network of well-surfaced and drained paths. These include wide forest roads, an old horse and cart sunken track, and less defined link paths. Paths are not steep and are suitable for most abilities. The most difficult section is the sunken track, which is relatively steep and wet in the winter months.

There is a Japanese-style stone seat by the Victorian ornamental pond near Llyn Mair, and a naturalistic wooden carved seat near a woodland stream.

Details of local walks can be found on the National Park website: <http://www.eryri-npa.gov.uk/visiting/walking/leisure-walks/dyffryn-maentwrog-and-llyn-mair-footpaths>.

Café facilities are available seasonally at both Plas Tan y Bwlch and Tanybwllch station. The nearest public toilets are open year round and can be found at the bus stop in Maentwrog by the Rhyd turning.

4.0 LONG TERM POLICY

In recognition of its status as both a Plantation on an Ancient Woodland Site and a woodland set in an important recreational, historical and cultural landscape, this ancient woodland site will be gradually restored to a predominantly native broadleaved woodland. However in designated parts of the site selected specimen exotics, both conifer and broadleaf, will be retained in order to reflect the wood's historical past, where these do not threaten the special features of this SSSI site.

In the long term, the woodland will be dominated by native broadleaves with a high proportion of oak in the canopy, many of which will ultimately be allowed to reach over-maturity and take on veteran features. There will be a diverse age structure with sufficient natural regeneration to maintain woodland cover. The ground layer and epiphytic vegetation will include many oceanic mosses, ferns, lichens and liverworts, alongside some vascular woodland plant species, and will not be dominated by coarse vegetation. Invasive species will be rare or absent.

The woodland will remain part of a well-connected wooded landscape in the valley. It will also be well-connected in terms of visitor access, with a well-maintained and safe network of easy-to-follow paths that link up to wider networks in the Maentwrog woodland area. Visitors and local people will be aware of and value the woodland for its good views, conservation value and quiet recreational opportunities. The wood, part of a cluster of Coed Cadw woods in Meirionnydd, will attract walkers wanting to explore off the beaten track in Snowdonia National Park. Features of interest to visitors such as the pond and viewpoints will be maintained.

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

The whole of Coed Hafod y Llyn is an Ancient Woodland Site which was coniferised in the 1960s. Subsequent invasive expansion of *Rhododendron ponticum* then occurred. Remnant mature oak is present throughout in varying proportions and the typical ericaceous ground flora persists under suitable canopy and is gradually expanding. During the 1990s Coed Cadw initiated a programme over the whole site whereby conifers were periodically thinned or removed entirely. Storm damage early in 2012 selectively removed conifer from most of the remaining denser zones, postponing the need for intervention in some of the PAWS zones, although all remaining scattered larch was removed during the last plan period (following the arrival of *Phytophthora ramorum* at a nearby site). Native trees (principally oak with ash and hazel) have been planted in cleared areas, and natural regeneration (especially birch and some oak) is both augmenting these restocked areas and will be recruited in areas as subsequent thinning of non-native trees occurs. *Rhododendron* thickets have been removed, but reinvasion from external seed sources continues to occur.

At the latest review, re-stocked areas were judged to be established and effectively restored, whilst much of the site was judged 'secure', with less than 20% conifer canopy, good regeneration of native species and a developing ground flora. Only some small patches were of concern, due to a strong bramble response following extensive windthrow.

Significance

The site has high potential for restoration primarily to native upland oakwood (W17) - a UK and SNP Biodiversity Action Plan (BAP) and European priority woodland habitat; indeed this process has progressed significantly over recent decades, with much of the site now secure PAWS or effectively restored. Locally native woodland species are represented alongside a range of exotics. The site is a SSSI and is designated as part of the Meirionnydd Oakwoods and Bat Sites SAC.

It is likely that the woodland is of value to a variety of fauna species, including woodland bird species and bats, for which the site provides both foraging and tree-roosting opportunities. The woodland is a prominent component of the local landscape and part of an extensively wooded area. Some lichens of interest (e.g. *Hypotrachyna taylorensis*, *Lobaria scrobiculata*) have been recorded.

Opportunities & Constraints

The large adjacent areas of woodland, both semi-natural ancient woodland and replanted ancient woodland sites, all with broadly convergent restoration aims, suggest great potential for a large contiguous area of woodland restored to native species.

The interconnected and relatively busy nature of the woodlands present significant difficulties should grazing ever be felt to be an appropriate management technique, as has at times been suggested in connection to improving lichen and bryophyte interest. However, small scale management to safeguard individual colonies of significance would be relatively easy to achieve.

Some of the retained Douglas fir are of good quality and could in the future provide a high value large diameter timber crop if sensitively extracted. However, conifers retained in the medium term within the PAWS area (especially external to the site) may be a seeding threat to the native species composition of the woodland during restoration.

Factors Causing Change

The site has proven prone to windblow, of native trees but primarily of crop trees, especially in wetter areas. These sudden changes in light levels and chemistry can open up areas to bramble invasion, as well as impacting on humidity levels (and therefore bryophyte flora).

Seeding regrowth of Rhododendron continues to be a persistent threat.

Impacts of landscape scale factors, in particular tree disease and climate change, could impact on the site: in the immediate term, the likely arrival of ash dieback could reduce native canopy tree diversity.

Changing patterns of public access could cause localised issues in future.

Long term Objective (50 years+)

The ancient woodland at Coed Hafod y Llyn will be restored to native woodland dominated by a high diversity of predominantly site-native trees and shrubs, including a high proportion of oak, many of which will start to take on veteran features. Ground flora and epiphytic vegetation will include a high proportion of oceanic mosses, liverworts, ferns and lichens, alongside vascular woodland plants. Nowhere will coarse vegetation dominate. There will be a diverse age structure with sufficient regeneration to maintain canopy cover. Invasive species, notably Rhododendron, will be rare or absent. Exotic species will not expand at the expense of natives (although a small proportion of non-site native broadleaves and specimen conifers will be retained for historic and landscape interest).

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

By 2027, the last areas of the site which remain 'threatened' will be judged secure: natural tree regeneration - or, where this is proving insufficiently slow to establish, under-planted shrubs - will be sufficient to constrain dense bramble growth below c 1m depth in PAWS zone 3. The rest of the site will remain secure, with rhododendron and conifer regeneration being rare or absent as a result of periodic control (by pulling, cutting, or herbicide as required).

Natural regeneration will continue to establish in more open areas of the site and include a range of native species. Mature trees will be retained wherever safe to do so, with a gradual increase in deadwood. Woodland ground and epiphytic flora will be maintained at least at its current abundance. Known sites of lichen interest will be protected during any site work and where possible, shading/ encroaching vegetation cleared to benefit particularly rare species.

The remaining Douglas fir will be retained until a target diameter of around 90cm is achieved, at which point careful felling and extraction of a number for timber should be considered.

The impact of ash dieback will be monitored; given the potential loss of ash, non-site native broadleaves may be retained where they contribute to species diversity and are do not dominate the canopy or regeneration.

Important lichen colonies identified by Alan Orange's most recent survey will be located and marked; if required, removal of shading exotics/ coarse vegetation will be undertaken in a targeted fashion at these locations in line with the report's recommendations.

5.2 Connecting People with woods & trees

Description

Coed Hafod y Llyn is a relatively accessible wood, one of a cluster of attractive woodlands owned by the Trust in Meirionnydd. The tracks in the site are mainly broad and have a good surface and moderate gradient, suitable for visitors with a range of abilities, although no formal less-able access provision is made. A number of benches provide resting points. A viewpoint exists from the main track overlooking Llyn Mair. An information board and ladderboard has been provided at the main entrance. There are six other entrance points to the wood, all accessed on foot through adjacent woodlands and sporting wooden welcome signage. There is local parking at the nearby Llyn Mair NNR (c10 cars), Plas Tan y Bwlch (c40 cars), or Tanybwloch station (c20cars). The woodland is part of an intimate network of woodlands owned by a range of partners, including the National Park, NRW and private owners: the distinction between the different owners, despite signage, may not be discerned by all visitors.

The wood is seemingly well-visited, used both by local people and visitors to the area, being situated a few miles from the town of Porthmadog (population c4000) and within the Snowdonia National Park, which attracts 3.67 million visitors per annum (2013), although exact visitor numbers are not known. The majority of visitors are mature walkers, although in recent years, family cyclists and orienteering groups have been seen more often: there is regular use by organised groups (primarily schools visiting local residential outdoor centres) using the trail network and temporary markers to devise orienteering routes around Llyn Mair. In recent times, a family cycle route around Llyn Mair has been promoted by Plas Tan y Bwlch, briefly crossing Trust property. Two not-for-profit groups currently (2017) have a licence to use the site for Forest School and woodland craft type activities with local children and vulnerable adults, although this is exercised on an occasional basis.

The nearby NRW car park and Snowdonia National Park picnic area near Llyn Mair draw visitors to the site, as does the nearby Snowdonia National Park Study Centre at Plas Tan y Bwlch, which has adjoining grounds. The site is encircled by the heritage Welsh Highland & Ffestiniog Railway line, whose Tanybwloch station is nearby and draws further visitors. In addition, adjacent landowners have formed the Dyffryn Maentwrog Footpath Network and publish a walks leaflet which includes Coed Hafod y Llyn and is available from the local cafes at Tanybwloch station and Plas Tan y Bwlch/ on the SNPA website. A corresponding set of numbered waymarkers are in place which relate to this map to aid visitor orientation. A number of internal paths were for a time part of the Wales Coast Path (diversion) and have been maintained as a Coastal Communities route promoted by Gwynedd Council.

In recent times the Trust has not held events at the wood, although there may be potential to do so in future. There is currently no volunteer activity at the wood.

Significance

Coed Hafod y Llyn is located in South Snowdonia , an area where the Trust will focus our landscape scale partnership work over the coming years. One of the objectives of this programme is to ‘promote the distinctive identity of the Meirionydd Tree-scape, with the Trust at its heart, increasing visitor appreciation of woods and trees and encouraging everyone to explore beyond the key tourist areas.’

The wood is part of a well-wooded and historically interesting landscape within the Vale of Ffestiniog and is one of a concentration of woodlands owned by the Trust in Meirionnydd. It is a moderately large site with features of historic/ visual interest and relatively good access and parking/ transport links in comparison to many managed locally by the Trust, and which is enjoyed by a significant number of visitors in a popular tourist area (Snowdonia National Park). The site is well situated close to other visitor amenities. The woodland is attractive to a variety of user groups including walkers, family cyclists, forest school groups and community projects such as Actif Woods, who encourage local people into the outdoors.

Opportunities & Constraints

There are significant opportunities for partnership working to promote access to woodlands in the locality, on the foundation of the Dyffryn Maentwrog Footpath Working Group and alongside neighbours including Snowdonia National Park (Plas Tan y Bwlch), Natural Resources Wales, the Ffestiniog Railway company, Gwynedd Council and private landowners who share an interest in maximising the visitor appeal of the locality, while still raising the profile of the Trust. The site illustrates the Trust's commitment to ancient woodland restoration and has a number of interesting historic features to interpret for visitors, as well as being part of a cluster of woodlands managed by the Trust in Meirionnydd.

There is potential to engage with both local people and the significant visitor demographic through improved site-appropriate interpretation (including creative projects e.g. sculptures) and events: in particular, environmental education/ orienteering events targeting older families, and guided walks aimed at a mature audience. The site is one of a number of woods suitable for promoting as part of a package for woodland walking in Meirionnydd and it is likely that this would be welcomed by the National Park Authority (who have an aim to spread the visitor pressure in the Park away from key honeypot sites).

There is potential to build on the on-going recruitment of guided walk leaders through the Ancient Woodland Restoration project and provide opportunities for volunteers to be involved in scoping, describing and promoting walking routes across the South Snowdonia Estate, both as downloadable gpx files/ leaflets available through the Trust website (perhaps as a specific 'Visit the Celtic Rainforest' type page) and as guided walk events advertised in conjunction with our partners.

In terms of constraints, there is a potential for conflict between user groups and between the demands of recreation and the site's conservation status (for instance, fires/ den building in areas of lichen and bryophyte interest could be detrimental and are not currently permitted under SSSI legislation/ consent for Forest School use). S28E Consent for any physical installations/ changes to the site's recreational usage may be required. There may also be limitations on the type of signage and installations permitted within the National Park: there will be a need to respect the current landscape qualities of this scenic rural area.

There is currently a risk that Trust messaging will be confused by the complexity of landownership within the area. On the flipside, of course, this provides potential to work with partners to improve roadside signage and host Trust literature at adjacent cafes/ attractions, or to design collaborative events that are mutually beneficial e.g. an event where people book to take the train from Porthmadog to Tanybwllch and attend a woodland walk or family activities as part of a day out, or that utilises Plas Tan Y Bwlch facilities and employ the considerable field studies education expertise there.

Access across the railway requires visitors to cross at level crossings: any replacement of stiles with more accessible kissing gates should be done in consultation with the Railway, for safety reasons.

Viewpoints and site infrastructure will need on-going maintenance.

While there is scope to offer educational visits to local schools, this will rely on the availability of materials and delivery through the medium of Welsh.

Factors Causing Change

Increasing and changing usage/ visitor demographic e.g. growing demand for Forest School sites, cycling opportunities, orienteering may put pressure on conservation features.

Priorities of neighbours may change, although the trend at present appears to be to diversify and expand the appeal of local tourist attractions e.g. by promoting local café walks in the area. There may be limitations in the availability of resources among other local bodies e.g. NRW, SNPA to deliver engagement. NRW are currently reviewing how they fund delivery partners.

Long term Objective (50 years+)

Coed Hafod y Llyn, as part of the network of woodlands in Dyffryn Maentwrog, will remain a popular destination for visitors. Visitor numbers can be expected to increase somewhat over time (numbers/targets xxx?), although any conflicts with the conservation interest of the site will be minimised. The majority of visitors will be walkers, with a wide demographic, although family cyclists will continue to use the lake loop and organised groups will participate in a range of educational activities such as forest school or orienteering. Most of this will be self-led activity, however, occasional walking events and 'older family outings' will offer opportunities for both volunteers and visitors to engage directly with the Trust. Both local people and tourists will benefit from the recreational opportunities the site provides.

Working with our neighbours, the Trust will promote the site for appropriate recreational access and maintain the current provision of paths. Access infrastructure will be well-maintained and in-keeping with the historic rural setting. Visitors to the site will have access to printed or online materials as well as in situ waymarking/ signage to aid with orientation and understanding of the wood's special features.

Visitors to the wood should go away recognising on some level the importance of our ancient woodlands and how the Trust is involved in their protection and restoration. The experience for visitors should be a relaxing, tranquil one, with low-key site infrastructure and historic features providing some intrigue and opportunities to deepen engagement through exploration and educational activities.

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

All existing entrances, tracks, seating, waymarking, interpretation and footpaths will be maintained in good, safe condition for public use, with infrastructure replaced as it reaches the end of its life. (Where possible stiles will be replaced with kissing gates at the point of replacement to improve accessibility). Tree safety work will be carried out where essential to the safety of visitors and our neighbours, including road and railway users. Tree growth will be coppiced or pruned as necessary to maintain existing viewpoints. At the end of the plan period, the site infrastructure will be audited and will conform to Welcoming Entrances criteria.

The Trust will continue to be an active partner in the Dyffryn Maentwrog Footpath Network and assist with future re-prints or re-designs of the local leaflet (available from Plas Tan y Bwlch, Tan y Bwlch station and on the National Park website). During the coming plan period, the Trust will seek to work with SNPA and NRW to improve roadside signage highlighting woodland walking opportunities.

As part of a cluster of Trust 'welcome sites' within Meirionnydd, by end 2019, walking opportunities at the site wood be promoted via a cluster booklet and a feature sculpture installed as a focal point. Gpx files and further information will be made available on the Trust website and guided walk leader volunteers will run a programme of scheduled and on-demand walks for local and tourist audiences.

Between 2018 and 2022, the site will host at least one public event in conjunction with our neighbours and partners, particularly targeting mature visitors and/ or older families visiting the Park during the summer months. E.g. a combined heritage rail ride and guided (storytelling?) walk.

Appropriate third party usage will continue under licence (e.g. Forest Schools, community group visits), however, impacts such as trampling and scavenging of deadwood will be monitored and restrictions on numbers and frequency of group use imposed if necessary; this will be reviewed at the expiry of each short-term licence.

At the end of the plan period, a visitor survey should record xxx (?) visits per annum, and visitors and event attendees, when questioned, will be able to identify the importance of ancient woodlands such as Coed Hafod y Llyn and be aware of the Woodland Trust's role in managing and restoring the site??? (we need a visitor survey to inform our programme now???)

5.3 Historic Features

Description

The site's historic context is as a part of the once-extensive garden of the nearby Plas Tan y Bwlch (now the Snowdonia National Park Study Centre). Tangible evidence of this history are the ornamental pond near Llyn Mair and the occasional mature specimen conifers. Previous owners also introduced new specimen exotic trees at the time of coniferisation in the 1960s. In Coed Cadw ownership, this heritage has been augmented by the installation of two Seats in The Woods (Miles legacy) projects (a stone seat with Japanese ambience near the pond and a naturalistic oak bench near one of the streams, which latter has been recently replaced). External boundaries with Snowdonia National Park land are drystone walls: these are in generally good repair and interesting features in themselves.

Significance

These features form part of a local historic landscape and provide additional enjoyment to visitors; the history of the local landscape is interpreted at local sites including the study centre and via walks leaflets.

Opportunities & Constraints

There is an opportunity to retain a sample of the planted specimen exotics to over-maturity without compromising the overriding ancient woodland restoration objective, given that current levels of regeneration are low and relatively manageable. Indeed, the planted poplar avenue supports *Lobaria scrobiculata*, a lichen of relative rarity.

Some of the introduced plantings such as bamboo and yellow azalea may, however, have invasive characteristics and require control in coordination with neighbours.

Features such as the pond require occasional maintenance but enhance the visitor experience.

Factors Causing Change

There is a low risk of vandalism to historic features; in the long term heavy rain events/ frost etc may also cause deterioration. Senescent trees will eventually be lost to old age or windblow, although some younger successors can be allowed to take their place in the long term.

Long term Objective (50 years+)

A selection of mature exotics will be retained to senescence (where compatible with public safety) and occasional regeneration will be tolerated, providing future specimen trees, although there will be no further planting of exotics. Historic features, notably the pond, will be maintained in good condition as a focal point adding interest for visitors.

Invasive exotics will be controlled in coordination with neighbours.

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

The pond and drystone boundary features will be maintained as necessary to prevent collapse/ flooding/ siltation.

Specimen conifers earmarked for long term retention will be identified and tagged with appropriate metal ID tags.

There will be no expansion of invasive shrubs such as bamboo or yellow azalea: these will be treated in the same way as rhododendron should problems become apparent.

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	2.87	Oak (sessile)	1990	High forest	Landscape factors, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation
<p>A young plantation of mainly native broadleaves at the eastern end of the site, restocked after conifer clearance in 1989/90 with sessile oak, ash, beech, rowan and birch, much augmented by natural regeneration especially of birch. Some remnant mature oaks are present, with notable specimens in the northern corner. Occasional residual Douglas fir and Nothofagus sp are also present. The ground layer is generally dominated by carpets of ivy and strong growth of bramble and honeysuckle but there are pockets of bracken, mossy areas and scattered heather / bilberry along track edges and under remnant oaks. The track along the northern edge is rough and drainage requires maintenance to avoid flooding. Occasional rhododendron and conifer regeneration occurs. A low voltage electricity line crosses the area near the eastern boundary wall. The Ffestiniog Railway line runs along the southern boundary.</p>							
2a	1.06	Oak (sessile)	1850	PAWS restoration	Very steep slope/cliff/quarry/mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation
<p>A plantation of Douglas fir with red oak at the eastern extremity, thinned in 1993/4 and again in 2008 to favour remnant mature native oaks. It lies above Snowdonia National Park woodland running down to Llyn Mair. Mosses and heather / bilberry dominate under the oaks, but ivy and bramble are common under the conifers. Rhododendron ponticum regeneration continues to reappear.</p>							

2b	1.02	Oak (sessile)	1994	High forest	Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation
<p>To the east of the main access track, previously a plantation of Douglas fir felled in 1993/4 and restocked principally with sessile oak with ash, hazel and rowan in 1994. Some remnant mature oaks present and three large over-mature conifer specimens, including a notable Douglas fir overlooking the pond. Birch regeneration has occurred. Ground flora has become dominated by bramble and coarse grasses, although heather patches are present especially along track edges. Despite extensive clearance and follow-up control <i>Rhododendron ponticum</i> regeneration continues to re-appear. A fine viewpoint down to Llyn Mair was revealed after conifer removal and a bench has been installed at the track edge at this point. As well as along the main track, public access is provided via a lower path which was improved by the National Park in 1990 as part of their lakeside route and is now part of a loop promoted by Plas Tan y Bwlch for family cycling. A small stream forms the southern boundary and feeds a pond, dating from the period when the wood was part of Plas Tan y Bwlch's extended garden; this is an attractive feature alongside the lower path. The stone facing of the pond dam was refurbished in 2004 and a supplementary flood overflow installed to avert periodic flooding of the path. A stone seat, designed by Noelle Griffith, was installed overlooking the pond in 1990.</p>							
3a	5.68	Oak (sessile)	1850	PAWS restoration	Gullies/Deep Valleys/Uneven/ Rocky ground, Mostly wet ground/exposed site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation

A plantation in the south-western corner of the wood, comprising mixed conifers thinned in 1997/8 and 2008. There are three distinct areas. The western end, established on old fields, was, prior to thinning and powerful storms in 2012, dominated by Japanese larch with some Norway spruce. The northern and eastern parts (and other scattered rocky knolls) consist of native woodland including mature oaks which had been intermixed with Douglas fir, only a few of which remain after thinning. In a central sector is an area of fed by several drainage ditches in which the flow has become impeded, and post-thinning remnant Norway spruce are suffering from windblow and willow is invading strongly. A line of poplars run along the track edge at the eastern end. Pockets of poorly grown planted beech are present. A small stream runs through the northern sector. Heather and bilberry and carpets of moss dominate in broadleaved areas, whilst bramble and ivy are common elsewhere, except in the wet and windblown areas where sedges, coarse grasses and rosebay willowherb have established. Despite extensive clearance and follow-up control *Rhododendron ponticum* regeneration continues to reappear. The Ffestiniog Railway line runs along the southern boundary whilst the compartment is otherwise bounded by access tracks. Public access is also along a footpath which bisects the compartment. A bench is provided.

4a	5.14	Oak (sessile)	1850	PAWS restoration	Mostly wet ground/exposed site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation
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Previously a plantation of predominantly Douglas fir with some Japanese larch and Corsican pine on rocky knolls in the north-western area of the property - all removed in two phases in 1995/96 & 1997/98. A good remnant oak canopy prevails over much of the sub-compartment, especially on each side of the northern stream, but some areas are dominated by birch. A few over-mature beech and a single very large Douglas fir also occur near the northern stream. Pockets of poorly grown planted beech are present. Natural regeneration of oak and birch is occurring into the canopy gaps throughout. Another small stream passes through the southern end. Ground flora is quite sparse but ivy and bramble are common and heather, bilberry and mosses dominate the rocky knolls. *Rhododendron ponticum* regeneration continues to reappear. The Ffestiniog Railway line forms the western boundary and a minor road lies to the north.

4b	0.50	Mixed conifers	1969	PAWS restoration	Landscape factors, Mostly wet ground/exposed site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Ancient Woodland Site, Connecting People with woods & trees, Historic Features	National Park, Planted Ancient Woodland Site, Site of Special Scientific Interest, Special Area of Conservation
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Previously part of the plantation that dominated the remainder of the compartment, but augmented by a varied selection of exotic specimen conifers and broadleaves planted along the main access track as an ornamental feature. The sub-compartment was thinned in 1997/98 and 2008, removing conifers competing with native oaks, but retaining specimen exotics, and selecting other conifers (principally Douglas fir and some Corsican pine) to be retained as part of the site's ornamental and historical context.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2019	3a	Coppice	0.10	50	5
2023	2a	Thin	1.06	47	50
2023	3a	Thin	5.68	6	36
2023	4a	Thin	5.14	10	50

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.