COED CADW
WOODLAND
TRUST

Parc Mawr

Management Plan
2017-2022

MANAGEMENT PLAN - CONTENTS PAGE

ITEM **Page No.**

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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:	Parc Mawr
Location:	Henryd, Conwy
Grid reference:	SH757737, OS 1:50,000 Sheet No. 115
Area:	33.94 hectares (83.87 acres)
Designations:	Ancient Semi Natural Woodland, Ancient Woodland Site, National Park, Planted Ancient Woodland Site

2.0 SITE DESCRIPTION

2.1 Summary Description

Parc Mawr is an ancient woodland dotted with impressive veteran trees. Visit in spring for a fantastic display of bluebells and other spring flowers, or at any time of year to enjoy panoramic views across the Conwy valley.

2.2 Extended Description

Occupying the very steep easterly facing side of the Conwy valley, Parc Mawr is an ancient woodland occupying a very prominent position in the landscape. Historically, the wood was managed most probably as high forest, with gradations between upland oakwood and ash / elm with a hazel understorey.

The woodland, however, has been much modified over the years. A busy lead mine was established in and around the northern tip of the property, finally closing in 1956, with the woodland no doubt providing fuel for the various processes. Coniferisation and the planting of beech in the 1960s drastically altered the character of the site and in the 1970s Dutch elm disease devastated the elms that were once common in the wood.

Nevertheless remnants of the original woodland have endured, with the survival of many mature canopy trees that pre-date exotic introductions. There are fine displays of ground flora including bluebells, ramsons and wood anemones in the spring. The wood is well connected to surrounding woodlands and hedgerows, within a relatively well-wooded landscape.

Following the acquisition of the site by the Woodland Trust, management access was improved: in 1997/8 a lay-by was created at the northern tip and the path and track network extended. These works have enabled successive management interventions aimed at reducing the threat to ancient woodland components, focused on the gradual removal of the non-native conifer and thinning of beech. Early interventions saw extraction of timber, although recent light thinnings have been to waste. A permissive bridleway has been established on the main tracks.

Where dense Sitka spruce stands were removed and restocked with native broadleaf trees in the upper sections of the wood, this has opened up very fine views over the Conwy valley.

The lead mines have been made safe by fencing around mine shafts and adit entrances have been grilled. These modifications have benefited the colony of lesser horseshoe bats by lessening disturbance. A fine smelter chimney and underground flue on site has also been conserved.

The woodland is now a valued local amenity for walking and horse-riding, boasting a network of permissive and public rights of way and fantastic views.

The key features of the wood are:

Ancient Semi-Natural Woodland
Plantation on Ancient Woodland Site (PAWS)
Connecting People with Woods and Trees
Species or community
Archaeological features

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

General location
Parc Mawr is located on the western side of the lower Conwy valley, on the lower slopes of the Carneddau Mountains in Snowdonia. It is about 3 miles south of the mediaeval town of Conwy, near the villages of Henryd and Rowen. The route to the wood is along a narrow country lane signposted to the village of Henryd off the B5106 Conwy to Llanrwst road: after passing through Henryd, follow the twisting lane, ignoring all junctions off it, as it eventually climbs steeply past an old mill (now a house) to reach the wood about a mile from the junction off the B road. The woodland is also accessible from other lanes and the many public footpaths in the surrounding countryside, and is traversed by an old byway leading up to the ancient church of Llangelynnin above the wood.

Overview of paths and entrances
Parc Mawr lies on a very steep valley side and the paths and tracks in the woodland are generally unmade or roughly surfaced, all are in parts very steep, and some can be rather muddy especially in winter. Almost all the entrances into the wood are gated (but some have heavy counterweights to prevent sheep access); the minor footpath entrance at the extreme south of the wood is a stile. There are many paths and tracks in Parc Mawr which afford numerous possibilities for circular routes, but whilst the main entrance and the entrance at the bottom of the ancient byway have information panels with maps, there are no waymarked routes. Any circular walk in Parc Mawr from the main entrance to the southernmost part of the wood and back is at least 2 miles in length. From the main entrance from the lay-by at the northern end of the wood, a wide forest track with a stony surface climbs southwards, very steeply at times: this route eventually levels out (after a vertical rise of over 110m) and affords excellent views up the Conwy valley and down to the sea; a bench is located to enjoy these views. Several other paths run across the slope through Parc Mawr north-south, whilst other linking routes exist, often very steep, some of which have many flights of timber steps. The relatively least strenuous walk follows the public footpath down the farm track near the lay-by at the main entrance, entering Parc Mawr up a short flight of steps to a gate in 100m; following this (keep left at all junctions) leads via a wider and fairly level track to the old byway in less than a mile. The old byway itself is a very steep track with an extremely uneven surface.

Parking
Parking is available in the lay-by at the main entrance to Parc Mawr, located at the northern end of the wood. There is no convenient parking at any of the other entrances to the site.

Public transport
The nearest railway station is at Conwy (request stop usually), but more frequent trains stop at Llandudno Junction about a mile to the east. Buses travelling hourly (on weekdays) between Conwy and Llanrwst via Dolgarrog along the B5106 stop at the junction of the lane to Henryd village. From here it is a walk of about 1 mile along a country lane without pavements: follow the lane through Henryd, ignoring all junctions off it until you reach the lay-by at Parc Mawr's main entrance just after a farm entrance on the left. For up to date and more detailed information about public transport, please see the There is also a twice daily bus service from Conwy to Henryd village itself. Traveline website www.traveline-cymru.org.uk or phone 0871 200 22 33.

Public toilets
The nearest public toilets are in the village of Rowen, south of the wood. There are several public toilets in the town of Conwy, 4 of which contain RADAR accessible toilets: some are open only April-September, but the toilets on the Quay are always open.

3.2 Access / Walks

4.0 LONG TERM POLICY

Parc Mawr will continue to be a valued rural amenity for walking and horse-riding, with a well-maintained infrastructure welcoming to visitors. Visitors will appreciate the special features of the wood.

In the long term, planted ancient woodland stands will all be restored to a semi-natural state. Parc Mawr will ultimately be a semi-natural upland woodland managed as high forest under continuous cover with a diverse species and age composition. Some areas will be largely oak-dominated, however, there will be a broad range of other native species in the canopy, with well-developed and site-typical shrub and field layers, including strong regeneration of various native trees. Beech, sweet chestnut and Douglas fir will remain a scattered component of the woodland but will no exceed twenty percent of the canopy. There will be many old trees with developing veteran features, abundant standing and fallen deadwood, and a great display of spring flowers throughout the wood, with ancient woodland species re-colonising the plantation stands from the surrounding areas. Threats such as invasive species or dense bramble growth will be rare or absent.

The bat communities will continue to thrive and remain undisturbed (with the exception of formal monitoring) and the grilles over entrances to Trecastell Mine will be maintained in order to ensure this. All archaeological features will be preserved in at least their present condition as far as is reasonably possible.

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 Connecting People with woods & trees

Description

Parc Mawr is a valued local amenity providing opportunities for walking and off-road horse-riding. There is a well-used layby available for parking (<10 cars) at the main entrance to the wood, with a notice board and recent orientation panel welcoming visitors to the wood. From here, visitors can access a network of paths ranging from broad but occasionally steep tracks, rough byways and narrow pedestrian-only trails. There is a circuit with two permissive bridleways linking to a historic byway which bisects the site, linking the community with the iconic and ancient Llangelynin Church on the hillside above. Bridleway gates were recently installed here by the Snowdonia National Park (the site is close to the park boundary) to facilitate horse access. There are an additional four public entrances, where public footpaths enter the site. There are also private access points provided for the benefit of site neighbours: the Community Riding School; and the Scout Association, who maintain an orienteering course on the site. The byway (and permissive riding routes) also attract a small number of cyclists and a growing number of motorbikes and 4x4s, the impact of which latter has perhaps helped to render the byway difficult for horse-riders to negotiate. Small wooden welcome signage is in place at all these entrances, with most of these having been fairly recently replaced.

The North Wales Pilgrim's Way (linking Basingwerk Abbey with Ynys Enlli) passes through the site from the south and climbs to the ancient church: a further information panel is provided near this route at the bottom of the byway. There is significant historical interest in the locality: the sunken way to the church is thought itself to be of some antiquity, perhaps as old as the Bronze and Iron Age remains that are to be found on the flanks of Tal y Fan above, while the church was founded as early as the 6th century.

The site is quite rural in nature, with a majority of visitors probably coming from the nearby village of Henryd (population c 700) or via one of the adjacent community sites, with horse riding and dog walking being the main activities. However, the wood is just a few miles from Conwy (population 14,750) and surrounding urban centres; both Conwy and Betws y Coed to the south are also tourist hotspots, with about 9000 visitors coming to Conwy each year. Those travelling from further afield are often in search of our dedicated tree plot: tree dedications are available for the wood on the Trust's website. Most visitors are mature walkers, although occasional den building activity suggests use by educational groups or older families.

The site offers fantastic views toward Conwy Castle, the Great Orme and the Conwy Valley, with a number of benches placed at strategic points. The woodland is very diverse, with an excellent display of spring flowers. It is an ancient woodland in the process of restoration and current interpretation focuses on both the Trust's restoration programme and the area's historic interest, including some (rather well-hidden) lead mining remains and a population of lesser horseshoe bats.

Recent events have been restricted to guided walks, mostly offered through the Cerdded Conwy walks programme, and led with the help of trained volunteers. These events have generally proven popular, with between 12 and 20 attendees, and attract walkers typically in the 45+ bracket. Linking in to local amenities such as the Ty Gwyn pub in Rowen has generally been positively received. There is current an active volunteer site warden and occasional third party group volunteering.

There is little antisocial activity currently affecting the wood, although occasional vandalism to gates and dumping in the car park occurs. The site has occasionally been used for forest school activity, although not recently, and there is some informal eco-den building (presumably by local families or school groups).

The woodland has been a venue where supporters can dedicate a tree, bench, grove or acre, which occasionally drives visitors to make a special visit to the site to view their tree.

Significance

Parc Mawr is moderately well used by the public on a local basis for quiet recreation. The local horse-riding community in particular value the opportunities for safe off-road riding the site provides. The woodland offers a particularly varied internal landscape, with visual interest most pronounced in the spring and autumn, as well as offering spectacular views across the wider landscape. The historical connections add to the appeal of the site for visitors and provide potential themes for events and guided walks. There is potential for increased educational usage, although large flat areas where groups can congregate are rare. The site in an ancient woodland in the process of restoration, priority work for the Trust. At present, although no visitor survey information is available, it is assumed that awareness of the site outside the immediate community is limited, with relatively few visitors making a trip from nearby tourist hotspots, although it offers good opportunities for walkers.

Opportunities & Constraints

Access infrastructure: the extensive access network allows for the provision of permissive riding routes and pedestrian-only paths. Steep ground nonetheless impedes development of access for less able visitors. Entrance is typically by gate; while the replacement of the one remaining stile would technically improve accessibility, this footpath already requires walkers to surmount a large ladder stile (off Trust land) and a series of steep steps, therefore the real benefits to users would be minimal. The nature of the terrain entails provision of steps and footbridges which require on-going maintenance. One internal track has third party usage and needs to remain open and passable. The retention of views up and down the Conwy valley revealed by conifer removal will require vegetation management as trees become established.

Surfacing of trails in ancient woodlands is generally to be avoided, although some imported inert stone has proven necessary on the main tracks to combat erosion by water/ vehicle damage and horses' hooves. Any creation of new trails could be damaging to the PAWS key feature and resident wildlife (bats, badgers etc). Some users have asked whether the byway could be upgraded to make it easier for horses, however, its challenging terrain deters some offroader usage and is part and parcel of its historic character, so any changes would need to be undertaken sympathetically and with considerable thought (and consent from the highways authority).

The historic byway remains an important route for local farmers herding livestock from the lowland fields to the ffridd above; recreational users can sometimes impede these operations. There is an

opportunity to improve information for visitors on both the historic context and on helpful behaviours around livestock.

Access to the site is via a network of narrow and rather complex lanes, so significant increases in traffic would not be desirable.

Some visitors who are unfamiliar with the site have commented that waymarked routes could be helpful (however, the primary audience at present is local and therefore does not require more orientation materials). The visibility/ placing of some of the wooden Trust signage could perhaps be improved, subject to planning constraints. The lack of availability of an online site map has been raised in the past as a barrier by those hoping to visit the site: there is an opportunity to provide a simple downloadable visitor guide (pdf) on the wood's web page to help orientate and encourage first time visitors.

There is an opportunity to work with site neighbours such as the Community Riding School and Scout Association to offer occasional educational sessions and perhaps to develop orienteering as an activity, using the existing fixed markers. A materials developed in this way could then provide a resource that would increase the wood's attractiveness to visiting schools on self-led visits.

There may be opportunities to engage with existing local audiences through equine or canine-themed events, working in partnership with local groups. Events could also be scheduled to work in conjunction with activities on the North Wales Pilgrim's Way (http://www.pilgrims-way-north-wales.org/index.html).

The Cerdded Conwy Walks Programme of volunteer-led walks is a go-to for local walkers. There are also local tourism businesses such as campsites, pubs and B&Bs which may welcome information on local walks to give to their guests (for example, the disused phone box in Rowen hosts various local leaflets for visitors).

Community woodland groups in the Conwy valley have in the past been offered the opportunity to become involved in certain aspects of management e.g. thinning of beech for firewood, but it proved uneconomic and was not taken up at the time: the Trust would in any case want to maintain control of the restoration process given the site's ancient woodland status. There is, however, the opportunity to revisit the idea of community firewood during the next scheduled beech thinning operation.

There are further dedications opportunities at the wood, which could be signposted using on-site banners and the webshop.

Factors Causing Change

Increasing use may cause deterioration in surface conditions; in particular, offroad motorbikes and 4x4s tend to cause some erosion of trails and unauthorised access away from the permitted byway route should be discouraged. Significant track repairs were required following a recent big slump following heavy rains and these extreme weather events are likely to increase. Internal tracks may also be at times used for timber stacking and extraction during PAWS operations.

There have in the past been some user group conflicts and some fencing has been installed to help constrain dog trespass onto neighbouring farmland/ yards, however, at present these issues are not major.

Natural tree and shrub growth will tend to obscure the viewpoint vistas. Ash dieback may increase the investment required in tree safety, given a large number of mature ash adjacent to paths and tracks.

Neighbours at the community riding school have plans to expand their facilities, including toilets which could be available for public usage: if this happened, it would improve facilities available to wood visitors and possibly increase footfall at the site.

Transport costs are increasingly limiting schools' ability to travel for off-site visits.

Long term Objective (50 years+)

Parc Mawr will continue to be a valued rural amenity for walking and horse-riding. The existing permissive bridleway access will be maintained, with a further network of pedestrian-only paths available to explore. Visitors will be aware of the Trust and the wood's special significance via information provided at the main entrances to orientate visitors; all other paths and entrances will be well-maintained with visible but in-keeping Trust welcome signage. First-time visitors will be able to access maps and visiting information via the wood's web page and a simple waymarked loop with be developed to reassure new visitors. Visitors will continue to enjoy spectacular views from the path network. Low level educational usage will continue, including activities such as orienteering and environmental games and the wood will add value to the experiences of young people visiting the adjacent community riding school and scout camp. Local people will continue to be involved as volunteers, particularly in maintaining the site's welcoming appearance and in leading others to appreciate the site through occasional events and guided walks. Community woodland groups will have the opportunity to be involved as appropriate with elements of the restoration work e.g. beech thinning for firewood. Visitors who have enjoyed their visit may be inspired to dedicate a tree, bench or acre in support of our work.

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

All existing entrances, tracks, footpaths and facilities will be assessed against an agreed grading system and then maintained to that standard. This may include addressing erosion issues on some routes. Open rides and viewpoints will be maintained by flailing/ coppicing as required. The location of welcome signage at the entrance will be reviewed and a new relocated ladderboard installed to maximise visibility on approach. The orientation panels and welcome signage should be replaced as they reach the end of their life [c 5 and 10 years respectively]. Steep drop warning signs and no horse-riding in foamex will be removed or replaced with less obtrusive wooden signage.

By 2020, walking and riding circuits within the wood will be waymarked (replacing the prohibitive 'no horses' red-and-white disc signage with appropriate horseshoe and foot symbols). Information for users will highlight the heritage interest of the site and encourage behaviour to reduce user conflict.

Before the end of the current plan period, explore partnering with the Scouts to develop/ revamp the orienteering trail and produce a map as a downloadable pdf on the WT website. Delivering initial training for at least 2 local schools and clubs to encourage wider use of this resource.

By end 2020, Parc Mawr, 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 Parc Mawr walk could be the four seasons (highlighting the best locations for spring flowers, autumn colour etc).

At least one low-key event, for example a guided walk or ride, will be hosted each year, aimed at engaging local walkers and/ or riders, with a minimum of 20 participants (such events having a fairly small audience but offering intensive interactions). Where local demand exists among local schools and groups, the Trust will also offer occasional group visits or guided walks for these groups, with the support of Trust guided walk leader volunteers. WT volunteer speakers will be provided with information on Welcome Sites in their region so that they can effectively promote the sites to their audiences.

A small number of local volunteers will help with the wardening of the site, the maintenance of rideside bluebell glades and the leading of guided walks/ events, with occasional volunteer days to tackle specific on site issues as required, such as invasive cherry laurel or path maintenance.

In planning the next phase of PAWS operations, the opportunity for community woodland group involvement/ firewood will be explored again.

By spring 2018, Parc Mawr will be available on the revamped Trust webshop as one of our primary woodland dedications sites in Wales (acres, benches, dedicate-a-tree etc). Where appropriate, this may be highlighted by on-site signage encouraging supporters to dedicate a tree or area.

5.2 Archaeological Feature

Description

In 1996 a commissioned report on the site's archaeological features found that the old mine workings situated in compartment 1 were part of a lead mine, which may date back to mediaeval times, but was mainly worked between 1892 and 1956. Important industrial archaeological features include the underground workings, a fine smelter chimney and its unusual underground flue – all of which have received conservation treatment.

The mediaeval track which bisects compartment 3 was also noted as being one of the site's more important archaeological features, having provided access to Llangelynnin Church over many centuries. It continues to be an important route for local farmers moving livestock from low-lying fields to summer grazing on the mountain above (the hafod and hendre system). Internal drystone walls also add some visual interest.

Significance

While none of the site's features were scheduled, nine of the twenty identified were classified as sites of regional or county importance at the time of assessment. The features associated with the lead mine are also important for bat communities. The historical interest of the wood is part of its local appeal for visitors, although the lead mining remains are not very visible to visitors.

Opportunities & Constraints

The out-of-the-way location of the lead mine is beneficial from a safety/ vandalism perspective although it reduces its interpretative value for visitors and make eventual repairs more difficult. The underground flue is in a relatively sheltered position and is unlikely to deteriorate quickly or be damaged.

Work on any structures will require a bat licence where utilised as a hibernacula/ roost.

The trackway in compartment 3 is an active right of way used by offroaders and horseriders, with an interest in retaining their access and the potential to cause surface damage through wheel-spin or activities such as unauthorised digging. The route is also an old droving route, still an important access for the movement of livestock between lowland fields and common land above the wood: this usage should be reflected in any future plans.

Factors Causing Change

Over time, lead mine features will weather and could require further conservation work, either due to natural degradation/ collapse or accidental damage during forest operations. The trackway will be subject to water damage and erosion, whilst the demands of public access may conflict with maintaining the historic appearance and usage of the route.

Long term Objective (50 years+)

All archaeological features will be preserved in at least their present condition as far as is reasonably possible.

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

Take account of all archaeological features in planning and implementation of visitor access and management operations. The smelter chimney will be checked periodically for any external signs of deterioration or damage.

5.3 Ancient Semi Natural Woodland

Description

Ancient woodland in a semi-natural state, dominated by site-native broadleaved trees, is the objective for the whole woodland area at Parc Mawr. At present, perhaps only 15% of the wood has either escaped the influences of plantation or can be considered as 'restored' plantation on ancient woodland (RAWS): the western end of sub-compartment 2a is now largely ash-dominated (W9 upland mixed ash woodland type) and there are pockets of oak-dominated woodland (with W11 upland oakwood characteristics) toward the south end of the site.

Replanted woodland in compartment 3a can also be sensibly considered under this key feature: following the removal of a stand of conifers here in 1998-2001, native woodland was (re-) established by planting, consisting of principally sessile oak and ash, with wild cherry, hazel and a few sweet chestnut (2000-02). Canopy closure has now been reached and the native composition is well above 80%. While this may in effect be secondary woodland (the conifer planting was probably onto former grazing land as open ground vegetation was prolific), the stand includes some pre-crop broadleaves and some ancient woodland flora is present in parts.

The woodland is reasonably well buffered and connected by other semi-natural woodland habitats, including scrub on the adjacent ffridd, and hedgerows.

Significance

Ancient woodland comprises just 2% of UK land area, is among our most biodiverse habitats and cannot be recreated: its protection is therefore a high priority for the Trust. Upland oakwood (W11) and upland mixed ashwood (W9) are priority habitats in the Wales & UK Biodiversity Action Plan. Semi-natural woodland supports a range of native wildlife, including providing foraging and shelter for a number of mammals including bat species. The woodland is an important local landscape feature, particularly for the nearby villages of Henryd and Rowen.

The wood is adjacent to 'daffodil mountain', the only known woodland stronghold in North Wales for the native daffodil, although the species is not currently recorded on site.

Opportunities & Constraints

The steep slopes within the woodland constrain management options. Care is required during active management in the vicinity of the several subsidiary badger setts. Bramble and in some areas bracken seem to have a strong response on these soils and may become dominant in canopy gaps.

Adjacent newly-planted native woodland and planted ancient woodland in restoration offer buffering protection to the ASNW areas. Volunteers may be available locally to aid with management tasks such as tree guard removal and laurel control. Natural regeneration seems to be abundant and able to replenish the canopy through much of the wood.

There are opportunities, given appropriate conditions, for the native daffodil population to expand to suitable habitat areas with Parc Mawr, which could improve the resilience of this isolated population.

Factors Causing Change

Seeding of nearby retained conifers, laurel and sycamore/beech may be a threat to the site-native characteristics of the ASNW areas. Ash dieback is thought to be present at the site and in recent years, many mature ash have been suddenly lost, either standing dead, windblown or to subsidiary infections such as honey fungus: it is possible that the disease has been present for longer here than first thought, although other factors could be at work. In any case, the ash appear to be in a generally vulnerable condition, although natural regeneration is prolific.

At present, browsing levels appear to be very low, although this could change with the spread of deer westward or in the event of boundaries deteriorating as fencing reaches the end of its life. Squirrel damage is already apparent on a wide range of species and could potentially impact on canopy recruitment of certain favoured species in future.

Long term Objective (50 years+)

In the long term, the whole woodland will fall under this key feature heading as the remaining PAWS zones are restored. Parc Mawr will be a semi-natural upland woodland managed as high forest under continuous cover with a diverse species and age composition. Some areas will be largely oak-dominated, however, there will be a broad range of other native species in the canopy, with well-developed and site-typical shrub and field layers, including strong regeneration of various native trees. Beech, sweet chestnut and Douglas fir will remain a scattered component of the woodland but will not comprise more than twenty percent of the canopy or recruitment. There will be many old trees with developing veteran features, abundant standing and fallen deadwood, and a great display of native spring flowers throughout the wood. Invasive species will be absent. Coarse vegetation will be occasional and nowhere dominant.

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

The regeneration of conifer and potentially invasive species such as laurel into native woodland areas will be monitored and controlled where necessary. The site will be maintained as stockproof, in conjunction with our neighbours where appropriate. Any last tree guards present in the restocked areas will be identified and removed with the help of volunteers. Any loss of ash to ash dieback will be met by adequate natural regeneration of native species to fill canopy gaps in the long term and maintain canopy cover. There will be no increase in coarse vegetation. The current diversity of ancient woodland ground flora will be maintained or enhanced.

5.4 Species or community

Description

Surveys of Trecastell Mine for bats in 1997 found that two of the adits were of regional importance to bats and that two others were accessible and used by bats. The principal importance of the site is as a hibernaculum for a significant colony of lesser horseshoe bats, typically numbering between 25 and 85 bats during peak hibernation. Protective measures (including two grilled entrances) have been installed to allow continued access by bats whilst controlling potential human disturbance. Work has been undertaken to provide further niches for bat communities in nearby archaeological features (capping the smelter chimney and repairing its underground flue). Greater horseshoes have also been known to use the site.

Significance

The lesser horseshoe bat is a protected species under the Habitats Regulations 2010 (as amended). It is regarded as endangered and in need of special consideration as a priority species under Wales and UK law.

Opportunities & Constraints

The main potential threat to the bat communities is disturbance either during management operations or by persons entering the mine. Work to the chimney and flue has expanded the potential roost habitat available.

Factors Causing Change

Populations of bats may shift their range due to climatic factors (including northward movement by species such as greater horseshoe). Any increase in unauthorised activity around the mines could be detrimental. Storm events or unpredictable collapses could block access, change humidity or reduce the suitability of the features for bats. Increasing availability of mature and veteran trees and a shift toward broadleaves in the surrounding woodland should over time provide improved surroundings.

Long term Objective (50 years+)

The bat communities will continue to thrive and remain undisturbed (with the exception of formal monitoring) and the grilles over entrances to Trecastell Mine will be maintained in order to ensure this. The whole site will provide good habitat for bat communities (see ASNW key feature).

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

Bat grilles will be maintained. Co-operate with monitoring programme of bat numbers in hibernacula in winter, as provided by Gwynedd Bat Group: results when received, while these can be expected to fluctuate, should indicate on-going usage (typically by a minimum of 25 bats).

5.5 Planted Ancient Woodland Site

Description

The majority of Parc Mawr is classed as ancient woodland, much of which was substantially modified by plantation of exotics in the post-WWII period. (Even where its classification is uncertain, or where substantial earlier clearance is likely to have taken place, for instance in cpt 1 in the vicinity of the active Trecastell lead mine, PAWS features such as ground flora and mature pre-crop trees persist to some degree). Conifers (principally Douglas fir but also Japanese larch and Norway spruce) and beech were extensively inter- and under-planted throughout the wood in 1963, amidst scattered remnants of mature oak, ash, hazel and occasional sycamore (and, at the time, mature elm). Veteran trees are present, with concentrations along and near the ancient trackway that bisects the woodland in the south. In some parts, non-natives established poorly and have grown up alongside a dense young broadleaved woodland component, with birch, wild cherry and a hazel understorey along with regeneration from the original canopy trees.

A gradual programme of thinning of conifers and beech throughout the woodland areas was commenced during 1998-2004, within repeat interventions in 2014, releasing mature native trees and providing improved light penetration for the benefit of ancient woodland features.

As at spring 2017, approximately 60% of the site was deemed effectively restored, with a semi-native component above 80% (see ASNW key feature), however the remaining 40% still has >20% non-native cover and roughly a third of the site requires further intervention to deal with threats to PAWS features (largely from shade and coarse vegetation).

Significance

The restoration of PAWS is the only feasible means of expanding the area of semi-natural ancient woodland habitat. The restored habitats at the end of the process (upland mixed ashwood (W9) and upland oakwood (W11)) are priority habitats in the UK/ Wales Biodiversity Action Plans. The woodland is an important local landscape feature, particularly for the nearby villages of Henryd and Rowen.

Opportunities & Constraints

With adjacent Semi Natural Ancient Woodland there is high potential to restore the woodland to native tree species and retaining and expanding its ancient woodland characteristics. A high proportion of native trees and shrubs remain and natural regeneration of ash especially is abundant. Flora typical of Semi Natural Ancient Woodland remains at the site. There are many veteran trees (mainly oak, but also ash and sweet chestnut), especially in the vicinity of the medieval trackway, and the number of mature trees (particularly oak, ash and wild cherry) provide opportunities for natural regeneration, as well as for future veterans and increased dead wood.

The abundance of bramble in the field layer is a constraint, as over-exposure can stimulate its growth and dense bramble could impede regeneration or shade out AWI species. Steep slopes limit the available techniques for low impact timber extraction. Archaeological features will require protection during operations. Environmental assessments must also consider any potential disturbance to the several large active badger setts and the population of bats which occupy the mine features during the winter months.

Some of the planted trees, in particular the impressive Douglas fir, are prominent landscape features, which may have value to local people: retention of a number of large specimens would be appropriate and compatible with conservation objectives. Local people also value the uninterrupted views of dense bluebell under beech: local opinion should be considered when specifying brash treatment in these areas.

Factors Causing Change

Whilst at present, natural regeneration of beech and Douglas fir is relatively modest, this could change over time. Invasion by invasive shrubs such as laurel could occur if not controlled. The arrival of ash dieback in the locality could impact of the survival of mature pre-crop trees and the abundance of natural regeneration (at present, ash comprises a good proportion of both canopy and recruitment), bringing about a shift in species over time. Increased stochastic weather events could destabilise thinned stands and create canopy gaps/ opportunities for coarse vegetation to dominate the field layer.

Long term Objective (50 years+)

Over the coming twenty years, the whole site should attain 'restored' condition: the proportion of site native trees in the canopy in every stand will increase to more than 80%, with a small proportion of beech and specimen Douglas fir retained as part of the woodland mix. Non-site native species will not be more than occasional in the ground and understorey layers. In the long term, ancient woodland flora will be abundant and recolonise throughout planted ancient woodland stands. Mature broadleaved trees will be retained and there will be a significant number of large and veteran trees within a structurally diverse woodland, as outlined in the Ancient Semi-natural Woodland key feature objectives.

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

By the end of this plan period, PAWS zone 9 will be effectively 'restored', with non-natives comprising less than 20% of the stand. This will be achieved by a last light thin (extracting higher value Douglas if possible).

PAWS zones 1,3,4 & 7 will be in robust and improving condition: shade levels impacting on ground flora will be reduced and coarse vegetation cover will not increase/ exceed 50% coverage except on a very localised basis. The canopy area occupied by non-native plantation species will not exceed 50%. All pre-crop broadleaves will have been well-haloed and show signs of canopy recovery. Following operations, brash will not obscure ride-side displays of AWI flora. This will be achieved by a further thinning operation(<20% thin) and the management of ride-side bramble by targeted cutting. Where possible, timber will be extracted by low impact methods, within the constraints of terrain, archaeology and sensitive or protected species features.

Natural regeneration of site-native tree and shrub species will be frequent or abundant throughout (with conifer and beech being no more than occasional [<20%]). Invasive species will be rare or absent.

There will be no increase in browsing pressure or mammal damage. Stock exclusion will be maintained.

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	5.65	Douglas fir	1963	PAWS restoration	Housing/infrastructure, structures & water features on or adjacent to site, Landscape factors, Mostly wet ground/exposed site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Archaeological Feature, Connecting People with woods & trees	National Park, Planted Ancient Woodland Site

Steeply sloping and generally uneven east facing sub compartment. Thinning of conifers in 1997-2004 has reduced the predominance of Douglas fir (planted around 1963) and given space to the sessile oak, beech and sycamore which are also present in the canopy. More heavily thinned areas are now dominated by bramble but with natural regeneration present of birch, elder and hazel. In more shaded areas understorey is fairly sparse but includes occasional hazel and rare elder coppice with some ash regeneration that is locally abundant. The very northern tip of the sub-compartment consists of broadleaf natural regeneration whose canopy mostly consists of sycamore, with sessile oak and downy birch is also present and with frequent hazel coppice forming the understorey. Ground flora generally consists of bramble and grasses, although foxglove, gorse, nettle, ferns, moss, wood sorrel and bracken are also present within the sub compartment. Several archaeological features are also present in this sub compartment, the most prominent being the Trecastell Mine workings. The most notable of these is an intact smelter chimney with underground flue. The mine has become a hibernaculum for the rare lesser horseshoe bat. A car park/stacking area situated on the north-eastern edge forms the main entrance to the site and a track runs southwards through the sub compartment from this point, forming the permissive bridleway and other permissive paths and public footpaths are also present.

2a	4.88	Beech	1963	PAWS restoration	Landscape factors, No/poor vehicular access within the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Archaeological Feature, Connecting People with woods & trees	Ancient Semi Natural Woodland, Ancient Woodland Site, National Park
Moderately sloping, east facing sub- compartment of mature oak and ash, underplanted with beech in 1963. The majority of this beech has been damaged by squirrels. Understorey occurs principally in the vicinity of the mature oak and ash maidens and is heavily dominated by hazel coppice, although rare elm and holly maidens can also be found. The sub-compartment was thinned in 1998-2002, favouring against beech. There is a spectacular display of bluebells, ransoms and other spring flowers, although bramble dominates areas where the canopy is more broken, especially where mature specimens of oak and ash have been windblown in this area. Abundant ash and rare oak regeneration is also present in these areas. A large active badger sett is also present in this sub compartment. The permissive bridleway forks into upper and lower sections and public and permissive footpaths also run through the sub compartment.							
3a	13.34	Ash	1971	PAWS restoration	Landscape factors, Mostly wet ground/exposed site, No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site, Services & wayleaves, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Archaeological Feature, Connecting People with woods & trees	Ancient Semi Natural Woodland, National Park, Planted Ancient Woodland Site

Moderately sloping, east facing sub compartment with uneven, rocky ground. Much of the sub-compartment was planted with Douglas fir and pockets of beech around 1963, all of which were thinned 2001-04. Semi-natural components include: an area of sessile oak dominated Semi Natural Ancient Woodland the southern end and extending up the small and steep stream valley; a variable intermixed canopy of ash contemporary with the conifers, especially in the northern sector; mature and veteran ash, sessile oak, sycamore, sweet chestnut and wild cherry scattered throughout, with a concentration (mainly oak) along the old track which bisects the sub-compartment. Understorey is generally sparse, although the mixed woodland contains frequent hazel coppice and the south eastern corner contains abundant elm maidens. Holly may also be occasionally found on the southern boundary. Ash regeneration is frequent in more openly thinned areas in the northern sector. Ground flora is sparse, generally grassy under oak, but bramble, moss, bracken and foxglove are present; primrose is present in the spring display together with ransoms and bluebells. Some small old stone quarries are also found within the sub-compartment. Additionally there is a water supply from a stream to the adjacent scout camp. Several old field boundaries have been identified as minor archaeological features but the most notable archaeological feature is the bisecting track which is a medieval route to St Celynin's Church. The track is a Byway Open to All Traffic and a public footpath skirts the northern sector. Parts of the permissive bridleway pass through the northern sector, the section running along the eastern edge linking to the byway, whilst permissive footpaths provide access around the southern sector.

3b	10.08	Oak (sessile)	2000	Wood establishment	Mostly wet ground/exposed site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc	Archaeological Feature, Connecting People with woods & trees	National Park

Moderately sloping, east facing sub compartment that used to contain dense stands of conifers planted on previous rough grazing, which were clear felled in the winters of 1998-2001. Brash left over from the felling operations was either burned, chipped or windrowed. Several mature sessile oak, ash and occasional sycamore maidens are scattered throughout the sub compartment. The sub-compartment was then restocked predominantly with sessile oak and ash, with wild cherry, hazel and a few sweet chestnuts in 2000-2002, with open ground retained along the upper, western boundary. The sub-compartment now also has a significant proportion of conifer regeneration which has been periodically controlled. The felling of the mature conifers opened up fine views of the Conwy valley from the harvesting track which runs through the centre of this sub compartment and which will be retained at viewpoints. The track is a permissive bridleway and links to the bisecting track which is a medieval route to Llangelynin Church and a Byway Open to All Traffic. Conifer felling allowed the reopening of a lost public footpath and a new permissive footpath was created in 2003 to link the end of the track in the southern sector to the path network in the adjoining sub-compartment.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2019	1a	Thin	5.35	59	315
2019	2a	Thin	2.95	24	70
2019	3a	Thin	1.90	42	80
2019	3a	Thin	2.15	28	60
2024	1a	Thin	5.63	53	300
2025	3a	Thin	1.94	41	80
2028	2a	Thin	3.88	23	90

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.

The Woodland Trust, Kempton Way, Grantham, Lincolnshire NG31 6LL.
The Woodland Trust is a charity registered in England and Wales no. 294344 and in Scotland no. SC038885.
A non-profit making company limited by guarantee. Registered in England no. 1982873. The Woodland Trust logo is a registered trademark.