



COED CADW
WOODLAND
TRUST

Pant yr Eos

Management Plan 2018-2023

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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 Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.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:	Pant yr Eos
Location:	Moelfre
Grid reference:	SJ176285, OS 1:50,000 Sheet No. 125
Area:	8.44 hectares (20.86 acres)
Designations:	Planted Ancient Woodland Site

2.0 SITE DESCRIPTION

2.1 Summary Description

Pant-yr-Eos is a mixed broadleaf and conifer plantation lying on a steep slope. Formerly agricultural land, remnants of former field boundaries can be identified by the large old field boundary trees, mainly oak and sycamore.

2.2 Extended Description

Pant-yr-Eos is a mixed broadleaved and conifer plantation comprising a total of 8.48 ha. Situated on a steep north-east facing slope the woodland is dominated by conifer plantation with larch and western hemlock the predominant species. The key features of the site are Plantations on Ancient Woodland and Informal Public Access.

There is a small isolated block of semi-mature Japanese red cedar at the southern corner of the woodland. The lower slopes at the south-eastern end of the woodland comprises planted oak with the occasional conifer and the ground flora is dominated by bluebell with stitchwort and some bramble. The woodland was probably planted up (c.1960-70) on former agricultural fields, with the exception of the oak stand, which is probably planted ancient woodland site judging by the profusion of bluebell. Remnants of the former field boundaries can be identified by the large old field boundary trees, mainly oak and sycamore. The woodland has not been managed i.e. the stands have not been thinned until the PAWS restoration that has taken place in 2014 and 2015.

An area of approximately 2.3 ha of conifer was clear felled in the 1990's and replanted. It appears that the planting was only partially successful. Some young conifers of mixed species (Douglas fir, grand fir, sitka spruce, pine spp., western red cedar) and groups of broadleaves (rowan, field maple, beech, poplar, horse chestnut) can be identified amongst a thicket of bramble and natural regeneration, mainly of broadleaf species, (sallow, rowan, oak, sycamore, hawthorn). A small stream originates in the centre of the wood and flows to the woodland roadside boundary.

The woodland is surrounded on three sides by agricultural pasture, mostly semi-improved, with a minor road along the north-east boundary. On the north-east side of the road is a large lake Llyn Moelfre surrounded by wet woodland and marshy grassland. The main public access to the woodland is via a pedestrian gate from the road (there is an adjoining management gate). A second gated entrance from the road is for management purposes only. There are two main rides and several interconnected footpaths providing circular walks through the woodland. A public footpath at the northern end of the woodland has two access stiles, one in the north corner from the road and the other on the western field boundary.

Pant yr Eos woodland was donated to Coed Cadw by Mr and Mrs Bullard in memory of their son. There is a commemorative plaque at the entrance to the site.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

Pant yr Eos occupies the slopes of a hillside close to the small hamlet of Molefre. There are two public access points off the minor road, one being a kissing gate the other a stile. From the stiled entrance a public footpath runs directly uphill and exits the wood via another stile on the south-west boundary. This footpath then continues across open pastureland (further barriers unknown). There are a number of paths and tracks within the wood all of which are unsurfaced. For the most part the tracks follow the hillside contours and are relatively level with shorter sections of paths/tracks uphill linking them. Running parallel with the road is a path which has a footbridge crossing. Paths towards the top of the hill are more uneven underfoot.

Parking is available in a large public carpark in the village of Llansilin approx 1.5 miles to the east. The walk to the site is along narrow country lanes with no pavements.

Public transport: there are no local bus services to Llansilin from Oswestry.

Nearest public toilets: there are no facilities within 5 km, the nearest being in Oswestry.

3.2 Access / Walks

4.0 LONG TERM POLICY

The long term aim for this site is for the conversion of Pant yr Eos to a woodland of predominantly locally native broadleaved species. Although not officially designated as a plantation on an ancient wood site (PAWS) there is such a high proportion of the site with all the necessary characteristics it will be treated as such in terms of future management. The process of restoration will be achieved through continuous cover management: successive selective thins to favour native species, gradually reducing the cover of conifers (over 20+years) whilst encouraging the natural regeneration of native tree/shrub species and development of the field layer. It is envisaged that over time the abundant bluebell and stitchwort which dominates in the existing oak in compartment 1A will eventually establish in other areas of the woodland. Open habitat also contributes to the site's biodiversity and this will be further enhanced through the management of ride edges/junctions as open shrubby woodland edge habitat. The quantity of valuable dead wood habitat will be increased through the retention of a proportion of felled trees on site. *Rhododendron ponticum* has been mostly eradicated but its presence will be monitored and controlled. The public footpath and rides will be maintained for public access. Other internal paths will be maintained according to site usage and the situation reviewed during future plan periods.

5.0 KEY FEATURES

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

5.1 Planted Ancient Woodland Site

Description

The woodland is a mixed plantation of broadleaves and conifer. It is not all PAWS but we are treating it as ancient woodland for management. The conifer plantation is relatively recent (estimated c. 1960's) and was probably planted on former pasture. There are few shrubs and the field and bryophyte layers are species poor. The oak stand (estimated c. 1970) is probably planted ancient woodland the field layer contains abundant bluebell (although not designated as such) Some large mature trees (oak, sycamore and ash) remain as remnants of former pasture and field boundaries. Badgers favour the areas of dense conifer cover although they clearly forage and commute throughout the woodland. Wide rides and an area that was felled and replanted (1990's) provide more open woodland edge habitat. PAWS thinning was carried out in 2014 and 2015 in compartments 1a and 1b funded by Glastir.

Significance

The local area is not heavily wooded, although there are trees and hedgerows in the vicinity. The woodland provides refuge for species such as badger and supports (potentially) a diverse range of plant, animal and bird species. The PAWS compartments have significant potential for restoration.

Opportunities & Constraints

Badger activity will restrict forestry operations. Landscape - visible from the minor road and surrounding hills. Opportunity to retain some conifer /non native broadleaf element as this adds to site biodiversity/amenity.

Factors Causing Change

Instability of conifer stands leading to windblow. Spread of invasive rhododendron., Young trees growing up in replanted area, including natural regeneration, forming thickets among dense vegetation particularly bramble. Squirrel damage (particularly noticeable on sycamore but may be destructive to other young trees). Increase in proportion of sycamore. Western Hemlock regeneration.

Long term Objective (50 years+)

The woodland will gradually be converted to high forest comprised of predominantly native broadleaves, with some groups /individual conifers/non native broadleaves being retained for their lifetime, as they contribute to the overall site biodiversity. Conversion will be achieved through continuous cover management: successive thinning to favour site native trees and shrubs and to encourage natural regeneration and the natural development of the field layer through the increase in light levels to the woodland floor. Conifers close to existing mature /field boundary trees will be removed gradually to avoid sudden changes in microclimate. This management will also enhance the structural diversity which will be further enhanced by encouraging the development of open shrubby woodland edge habitat along the along ride edges/junctions through conifer removal followed by the implementation of a programme of regular ride-edge coppicing. Woodland edge habitat will also be encouraged to develop along the perimeter of the woodland boundary through conifer felling during thinning operations. Dead wood (both standing and fallen) will increase naturally over time, a proportion of felled timber to be retained on site to increase amount of dead wood habitat. Invasive rhododendron will be eradicated from the site. The badger population will continue to thrive and badger surveys will establish setts and activity in order to avoid disturbance by forestry operations.

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

Monitor the effect of the PAWs thins in 2014 and 2015 with Woodland Condition Monitoring and continue the work of PAWS thinning into compartment 1c in 2017.
Continue to sweep site for Rhododendron.

5.2 Informal Public Access

Description

Pant yr Eos is a remote site. It has a history of open public access, the previous owner allowing use by the local community. Public access is from the road and the main ride extends to provide circular walks through the oak stand at the south-western end of the site and on up through the conifers and re-planted section to the upper slopes beneath the larch plantation. An alternative route on the lower slopes is over a footbridge to a clearing, where there is a seat, and along a ride through the stand of western hemlock. A public footpath at the north end of the site is accessed via stiles, from the road at the north corner and from a field on the western boundary. Several smaller footpaths interconnect with the main rides.

Significance

A local amenity providing circular walks. Oak stand notable as a bluebell wood. Wide rides create woodland edge habitat which adds visitor interest.

Opportunities & Constraints

Parking is limited to a pull in by the main gate suitable for only one car. The main ride is fairly extensive in terms of maintenance, but it also creates a woodland edge habitat. Steep slope up to the upper section of the woodland. Views limited by tree cover.

Factors Causing Change

The rides require regular maintenance to prevent them becoming overgrown by vegetation.

Long term Objective (50 years+)

The main rides and public footpath will be maintained. Other internal footpaths and seats will be maintained depending on site usage.

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

The main rides and footpaths will be maintained.

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	2.30	Oak (pedunculate)	1970	PAWS restoration	Sensitive habitats/species on or adjacent to site	Planted Ancient Woodland Site	Planted Ancient Woodland Site
<p>On the lower slopes at the south-east end of the woodland this sub-compartment is dominated by oak. The trees are probably planted and are generally even aged (an estimated 40-50 years old). The occasional Norway spruce is present, with birch, holly, ash and beech also represented. There is little understory apart from some sycamore and ash regeneration and the occasional young Norway spruce, Western red cedar and Douglas fir. In the south corner the oak are all young mature and spaced an average of 2-3 m apart and have become severely etiolated as a consequence of lack of management. Ground flora is dominated by bluebell with stitchwort, grass spp. some wood sorrel and male fern. Honeysuckle is present and bramble is beginning to invade in some areas. The profusion of bluebell suggests this section of Pant yr Eos is planted ancient woodland. This sub-compartment is bounded by the road to the north-east, by fenced field boundaries with mature ash to the south-east and a large mature sycamore to the south-west and a compartment of conifer (cmpt. 1C) to the south. The north boundary is partially delineated by a small stream. The compartment was thinned in 2015, with only conifers removed. PAWS survey in 2017 recorded an abundant understory of natural composition and abundant blue bells.</p>							
1b	5.70	Norway spruce	1960	PAWS restoration	No/poor vehicular access to the site, Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/mine shafts/sink holes etc	Planted Ancient Woodland Site	Planted Ancient Woodland Site

This sub-compartment is highly variable and for the purposes of future management has been divided into a number of distinct zones. Refer to the PAWS survey undertaken in 2010 for their location and size.

Zone 1 (1.38 ha.) lies between the road and the parallel track some 100 metres up the slope. Its southern boundary being the stream channel and its northern the ancient field boundary. The zone contained a significant number of dominant broadleaves, Oak, Ash and Sycamore with inter-planted Western hemlock of good form. In 2010 and 2014 a number of the Hemlock were felled as part of the PAWS restoration process and as a consequence the ground flora and broadleaved regeneration is doing well. Wood sorrel, Bluebell, Stachys, Male fern and Foxglove are beginning to appear. The larger conifers that remain are predominately around badger setts.

Zone 2 (0.9 ha.) lies to the north of Zone 1 beyond the old field boundary. It contains a number of dominant and suppressed Norway spruce within a matrix of severely etiolated Ash. Oak, Ash, Sycamore and Elder form the sparse sub-canopy and Bramble, Nettle, Bluebell and Herb Robert the ground layer. The felling of the Norway spruce will contribute to the gradual restoration of the zone. Thinned in 2015.

Zones 3 and 4 are located above the parallel track which bisects the wood.

Zone 3 (2.83 ha.) represents an area clear-felled in 1990, prior to acquisition by the Trust. It was planted with a large variety of exotic conifers in small coups spread throughout the zone. Larch, Douglas fir, Grand fir, Norway and Sitka spruce are abundant. The native broadleaves form a small proportion of the stock and are confined to the occasional Willow, Ash, Birch and Rowan. The ground layer is coarse and is mainly Bramble, Bracken, Male fern, Raspberry. The northern part of the zone has a higher proportion of native broadleaves within the exotic mix. Thinned in 2016.

Zone 4 (0.55 ha.) appears to be a remnant of the former plantation before the 1990 felling operation. Being on the exposed edge of the upper wood many of the trees are windblown and of poor form. Larch and Western red cedar are dominant with the occasional Western hemlock and Douglas fir. Both the sub-canopy and field layer are very sparse. Again the section against the north-western boundary has more variety with Ash, Hawthorn and Elder being included in the mix and a more diverse ground flora which includes Herb Robert, Dog's mercury, Ground ivy and Wood sorrel. There is evidence of both squirrel and rabbit damage in this zone. Thinned in 2016, apart from tree on the exposed upper edge left as a wind break.

There are isolated clumps of Rhododendron towards the west of the compartment.

1c	0.40	Japanese cedar	1970	PAWS restoration	Landscape factors, Sensitive habitats/species on or adjacent to site	Planted Ancient Woodland Site	
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This sub-compartment comprises almost entirely of semi-mature Japanese red cedar (*Cryptomeria japonica*). The trees are generally very densely spaced (1-2 m apart) and the majority are curved at the base. Many of the trees have collapsed. Some young ash and a small hawthorn and young sycamore are also present but are severely etiolated. Ground flora is very sparse and comprises a limited variety of moss spp. and localised herb Robert and wood sorrel. Adjacent to the south-west boundary fence there is a large mature oak and along the south-east boundary fence mature oak and ash. Access to the sub-compartment is from a disused track overgrown with bramble and up a steep bank upon which grows an ash and a sycamore. There is evidence of extensive badger use within this compartment and several setts were noted. Some selective felling of the *Cryptomeria* was undertaken during the last plan period (2010) and again in 2015.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2019	1c	Selective Fell	0.40	0	0
2020	1b	Selective Fell	1.70	0	0

GLOSSARY

Ancient Woodland

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

Ancient Semi - Natural Woodland

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

Ancient Woodland Site

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

Beating Up

Replacing any newly planted trees that have died in the first few years after planting.

Broadleaf

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

Clearfell

Felling of all trees within a defined area.

Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

Continuous Cover forestry

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

Coppice

Trees which are cut back to ground levels at regular intervals (3-25 years).

Exotic (non-native) Species

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

Field Layer

Layer of small, non-woody herbaceous plants such as bluebells.

Group Fell

The felling of a small group of trees, often to promote natural regeneration or allow planting.

Long Term Retention

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

Minimum Intervention

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

Mixed Woodland

Woodland made up of broadleaved and coniferous trees.

National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

Native Species

Species that arrived in Britain without human assistance.

Natural Regeneration

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

Origin & Provenance

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

Re-Stocking

Re-planting an area of woodland, after it has been felled.

Shrub Layer

Formed by woody plants 1-10m tall.

Silviculture

The growing and care of trees in woodlands.

Stand

Trees of one type or species, grouped together within a woodland.

Sub-Compartment

Temporary management division of a compartment, which may change between management plan periods.

Thinning

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

Tubex or Grow or Tuley Tubes

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established. Either by hand cutting or with carefully selected weed killers such as glyphosate.

Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.