Ancient Woodland Restoration

Deri Wood / Coed y Deri









Woodland Name: Deri Wood / Coed y Deri Location: Llanfair Caereinion, Powys Grid ref: SJ097066 Total Woodland Area: 5.35ha Area PAWS: 4.14ha (On Inventory as RAWS) Area ASNW: None (Riverside section of Goat Field could be considered ASNW) Area RAWS: None Area AWI Unknown: None Designations: None Ownership: Llanfair Caereinion Town Council Managed By: Montgomeryshire Wildlife Trust & Llanfair Caereinion Town Council Field Survey: 16th May 2016, 17th June 2016, 18th August 2016 & 10th October 2016 Report Date: 20th October 2016 Report Author: Alastair Hotchkiss (Ancient Woodland Restoration Officer, Woodland Trust)

1. Introduction

This report provides an overview of the ancient woodland at Deri Wood / Coed y Deri, near Llanfair Caereinion, Powys. The woodland is currently in the ownership of Llanfair Caereinion Town Council and the focus of a 1-year project by the Montgomeryshire Wildlife Trust. The report is produced as part of the Woodland Trust Heritage Lottery Fund (HLF) funded ancient woodland restoration project. Particular focus is upon the plantation on ancient woodland (PAWS) areas, their remnant ancient woodland features, and their restoration. It sets out recommendations for the management of the PAWS, and associated woodland where relevant.

2. Context

Our ancient woodlands provide us with a unique link to our past. They are steeped in our cultural history and are one of our most precious habitats. Ancient woodland is land that has been continually wooded since at least 1600AD. However, these woodlands are under increasing threat and today cover only 2% of the UK. Almost half of the ancient woodland we have left has been planted with non-native trees, which can significantly impact its biodiversity and cultural value, although the impact of this depends to a certain extent on how the plantations were established, their subsequent management (or lack of management), and to an extent the variety of different species of conifers and broadleaves (e.g. beech in this area of mid-Wales) planted on these sites. Much of this activity began in the mid-1900s, when many of our ancient woodlands were felled and replaced mainly with non-native conifers. This coniferisation was carried out on a large scale by the public and private sectors as a result of a policy drive to replenish the national timber reserve and produce faster-growing softwood timber. At the time there was a lack of understanding of the biodiversity value of these important woodlands or the impacts that this activity would cause. Dense shade-casting conifers and broadleaves (such as beech) often smothered the remaining ancient woodland flora and fauna, resulting in the decline of many of these species.

The Ancient Woodland Inventory for Wales (see figure 1 and 2), most recently updated in 2011, attempts to identify woodlands that have been more or less continuously wooded since the 1600's. This should still be seen as provisional, and field survey or desk-based evidence can be used to more accurately assign the woodland status, if the status or boundary on the inventory is considered incorrect. In Wales, the inventory is managed by Natural Resources Wales (NRW). The relevant definitions are:





Ancient Semi Natural Woodland (ASNW) are native woodlands comprising mainly semi-natural native tree and shrub species which have been in existence for over 400 years. They generally have a more natural woodland structure and species composition.

Plantation on Ancient Woodland Sites (PAWS) are believed to have been continuously wooded for over 400 years but currently have a canopy cover of more than 50% non-native conifer or non-native broadleaf tree species (e.g. beech and red oak) as a result of past clearing and replanting.

Restored Ancient Woodland Sites (RAWS) are those sites for which there has been evidence that dense nonnative plantations have occurred on the site in the past, but that the woodland now has more than 50% cover of native trees.

Ancient Woodland of Unknown Category (AWu) are ancient woodland sites which at the time of the inventory were generally lacking a canopy or where trees were too young to identify whether broadleaved or coniferous from aerial photography. These were generally sites that had been recently clearfelled and restocked.

The main part of Deri Wood is mapped on the most recent Ancient Woodland Inventory for Wales (2011) as Restored Ancient Woodland Site (RAWS). This is considered incorrect, and the site is best regarded as almost entirely plantation on ancient woodland (PAWS). This is not clear from the aerial photographs, and it is rather unusual in that many of the conifer and beech stands have been underplanted beneath large old oaks which still dominate the canopy in places. The dominance of beech is also another factor why this has been incorrectly mapped as RAWS, simply because the aerial photography could not distinguish beech from other native broadleaved trees. None of Goat Field is mapped as ancient woodland on the Inventory. This has not been particularly investigated further, and it is understood that this part of the site was more open (as the name suggests), and it does appear to have been planted more recently. However, the strip nearest the river is rich with ancient woodland indicator plants, and older coppiced trees like alder, ash, hazel, yew and oak, and it is felt that this riverside strip has probably had woodland cover for a long time, and is perhaps best considered as ancient semi-natural woodland (ASNW), as the dingle woodland on the edge of the stream which joins the Banwy near the old pump house.

3. Ancient Woodland Restoration

The Woodland Trust's general approach to Ancient Woodland Restoration can be summarised as follows;

- The approach assumes that all PAWS are likely to retain some of the ecological and archaeological value from their ancient woodland history.
- We advocate two operational phases, which may occur at the same time within different parts of the woodland:
 - Maintain and enhance remnant ancient woodland features by reducing immediate threats to their survival.
 - Make long term improvement to the general ecological value of the site, by gradually shifting the canopy towards a more semi-natural species composition and structure.

Planning and operations are based on site surveys, as set out within this report, that identify the type, distribution and condition of remnant ancient woodland features, which fit broadly into the following categories:







Figure 1 - Ancient Woodland Inventory for Wales (2011) in the area around Deri Wood (shown by red star in centre). Blue is PAWS, Orange is RAWS, Green is ASNW and Pink is AW of unknown category. This shows the fragmented patchwork of ancient woodland.



Figure 2 - Ancient Woodland Inventory - Deri Wood - Showing amended category. The light blue PAWS area is on the inventory as orange (RAWS). The slither of RAWS showing at the eastern edge of the site alongside the stream is more appropriate.





- Ground flora and other important woodland specialist species.
- Pre-plantation trees, i.e. trees that predate the establishment of the plantation. These will usually be native species, and of significant age, size, and/or have 'veteran' characteristics.
- Significant dead or decaying wood.
- Archaeology

Action to conserve and enhance remnant ancient woodland features is prioritised based on the level of threat, with attention being directed to those most at risk. The threat levels of the site (or compartments within the site) are considered in three categories; those being secure, threatened and most critical. Furthermore, a scoring system of 1 to 5 is used to help prioritise further in considering the short-term management aims (1 being highest priority), which will also take into account various operational constraints or other objectives. Wherever possible, the approach is about gradual change, in particular the management of light levels, as most threats to remnant ancient woodland features may come from either excessive shade or light. The emphasis is not simply on replacing the plantation crop with native trees, and should seldom require rapid or complete removal of non-native conifers. Indeed, depending on the owners' objectives for the site, this report can also make recommendations on the potential for growing quality softwood timber through a more semi-natural system of silviculture. Sometimes, circumstances may mean that the most appropriate management is to fell and replant and where this is recommended the report will outline the reasons why.

A precautionary approach should be adopted towards all work on ancient woodland sites. This report attempts to identify as many visible features as possible during the time visited. However it is not exhaustive in its scope, and there will almost certainly be additional important features that remain unrecorded or not identified during this assessment. Therefore it is prudent to assume that there may be vulnerable features present within any area of operations, and to therefore proceed with a degree of due caution at all times. An example of this is the importance of ancient woodland soils, and their microbiology. Soils are particularly vital within ancient woodland, and it is crucial that they are considered during woodland management, irrespective of whether any more conspicuous features have been identified above ground.

4. Site Description:

This area of woodland is to the west of the town of Llanfair Caereinion, which lies downstream on the Afon Banwy. The woodland includes Deri Wood, which is the main focus of this report and is owned by Llanfair Caereinion Town Council, and also the adjoining area of woodland known as 'Goat Field' which is owned by Powys County Council, and is largely recent secondary woodland. Deri Wood occurs on a strip of sloping land on the southern bank of the Afon Banwy. The site comprises various stands of conifers and broadleaves and has been compartmentalised in the attached map. Internal access and track infrastructure is actually relatively good, mainly due to the good central track, albeit without a turning circle at the far end. Most of the slopes above and below the track are made accessible to vehicles and timber harvesting because of this. Vegetation has not been fully surveyed to National Vegetation Classification (NVC) level, but in a semi-natural condition this site would be probably be considered to be mainly oak wood on quite acidic, infertile soils (NVC W11, with some Great Wood-rush *Luzula sylvatica* dominated examples), with ground flora consisting of typical herbs, grasses, sedges, rushes mosses, liverworts and ferns. That said, there are areas with signs of base-enrichment, particularly along streams and flushes, where remnant ash and alder woodland would occur (NVC W7/8/9), adding additional floristic diversity. Adjacent land-use is predominately agricultural to the South West, but there is immediate connectivity to other woodland areas along the well wooded Afon Banwy.





5. Brief History:

The site was donated in 1919, by John Cooke Hilton, and partly by John Peckmere in 1926. It was given to the community and its visitors as a ground for their recreation and public walks. The Epoch 1 Ordnance Survey Map (Fig. 1 - mid 1800s – approx. 1850-1870) is the earliest mapping we have of the site, and it shows the wood to be mainly broadleaved woodland, but perhaps even at that time, there may have been some conifers here, as marked by a few single conifer symbols on the map. This is confirmed by the slightly clearer OS Six Inch map (Fig. 5 - 1888-1913). Interestingly though, these conifer symbols appear to be mainly focussed in the southern part of the site, which is now more dominated by beech and oak, and there are few conifers. That said, curiously, this is also the part of the wood with the fewest large oaks, which may be because they were cleared to make way for an earlier conifer planting rotation, prior to the existing stand. Goat Field is also shown as mainly open on this map, although some riverside tree cover is showing, which helps to explain the richness of ancient woodland plants along this section of the site. The earlier history (pre-1850) of the site is not known, but there are indicators of ancient woodland, particularly when looking at the ground flora. The precise planting year for the current mixed stands of conifers is not known. Some of the largest conifers are of some considerable size, particularly the grand fir and some of the larger Douglas fir and western hemlock. Many of the beech too are of some considerable size. That said, there are also stands of smaller conifers, particularly the western red cedar, some of the Norway spruce and also some smaller diameter beech planted in rows, which are thought to be have been planted in more recent decades. Recent management interventions mainly seem to have dealt with any windblown trees, and general maintenance of paths.



Figure 3 - Epoch 1 OS Map (Mid 1800's) showing Deri Wood as mainly a broadleaved woodland, but with a few conifer symbols too.



We will keep you updated on news and events about ancient woodland restoration, and you can contact us at any time if you do not want any further mailings. We are working in partnership with Coed Cymru on this project and occasionally share information with them – again contact us if you would prefer us not to.

Supported by The National Lottery® through the Heritage Lottery Fund



Figure 4 - 1969 aerial photograph of Deri Wood, showing a clear distinction between the westernmost part of the site and the southern part nearest the road which appears to be perhaps a younger stand of trees.



Figure 5 - OS Six Inch Map (1888-1913) clearly showing the main part of Deri Wood as a broadleaved woodland, but with the density of conifer symbols in the southern part of the site near the road. The fringe of riverside woodland in Goat Field is also shown.







Figure 6 - Deri Wood - An old image (unknown date) of a postcard found on the internet. Presumably this is the bridge of the main stream where it joins the Banwy, between Deri Wood and Goat Field – The current bridge shown below (Oct 2016).







6. Long-Term Aims:

The primary objectives for the woodland have not been fully explored with the Town Council, however it is thought likely that the following aims will be quite high on the list:

- Enhance the site as a place for the community to visit, walk, and enjoy.
- Ensure that any general maintenance and management costs are kept to a minimum.

7. General Description of Ancient Woodland Features and Condition

Taken as a whole, this area of Plantation Ancient Woodland (PAWS) is considered to have the potential to be a significantly more diverse and much richer ancient woodland site. There are many ancient woodland features still occurring at Deri Wood, and to realise this potential it is important that these remnant features are secured and given the opportunity to recover. In parts of the site, this is now underway, and some remnant mature broadleaved trees have already been opened up by halo-thinning which will also benefit the ground flora and wider biodiversity (Western red cedar in Cmpt 3a – August 2016).

The most strikingly visible ancient woodland features are the numerous old and impressively large oaks, and in the areas where the conifers and beech are not so dense, where more remnant ancient woodland plants occurs, and along the track edges and the main stream and riverside areas, as well as a few wet flushes. Despite the remnant ancient woodland vegetation being impoverished and reduced in abundance compared to how this site would historically have been, a good number of ancient woodland indicator plant species have been recorded in Deri Wood (at least 39). The 2008 report produced by Countryside Council for Wales (Castle et al 2008 - CCW report 819) on ancient woodland indicators concludes that a 2ha plot supporting 28 of the listed 'potential vascular plant indicator species' is reasonably likely to be 'probable ancient woodland'. The Deri Wood list of nearly 40 therefore helps to give a strong indication that this has probably been a wooded site for many centuries. These are most abundant and thriving in the more semi-natural areas, particularly along the streamside and riverside banks, and generally in the worst condition under the densest conifer and beech areas. These include: Barren strawberry, betony, bitter vetch, bluebell (which is abundant in places), bugle, bush vetch, common figwort, dog's-mercury, great wood-rush, hairy wood-rush, hard fern, hard shieldfern, hart's-tongue fern, honeysuckle, opposite-leaved golden saxifrage, pignut, polypody fern, primrose, Ramsons/wild-garlic (which is particularly abundant along the streamside), red campion, red currant, remote sedge, sanicle, scaly male fern, slender St. John's-wort, water avens (a locally uncommon plant), wood anemone, wood melick grass, wood speedwell, woodruff, wood-sedge, wood sorrel, yellow archangel and yellow pimpernel. The riverside rocks at Deri Wood also support Globeflower, a locally scarce plant of conservation importance in the UK. This also occurs further downstream in Llanfair.

As mentioned, numerous mature pre-plantation trees occur across the site. Their size has sometimes resulted in the oaks themselves suppressing the underplanted conifers and beech. This is usually the other way around on PAWS sites with the fast growing conifers over-topping remnant oaks. However, this will not be the case for ever, and the lack of oak regeneration across the site is a clear sign that the shading beech and conifers will eventually replace the oaks here if no management is carried out. All of the notable oaks (generally >70cm Diameter at Breast Height – DBH) and notable trees of other species have been GPS mapped and shown in the condition maps section. This exercise revealed that there are almost 100 individual large oaks of >75cm DBH. There is fairly frequent pre-plantation deadwood in places, usually old oak stumps, but significant large fallen and standing deadwood is quite infrequent and has presumably been 'tidied up' over the years.





As with all ancient woodland sites, there is potential for other less visible ancient woodland remnant features to occur here. These may either be not so detectable at this time of year; or more thorough or specialist survey effort may pick up further features (particularly for difficult groups such as fungi, lichens, or invertebrates). Some further taxonomic groups have been recorded at Deri Wood, thanks to efforts of the Montgomeryshire Wildlife Trust – for example, small mammals, bats, birds and moths. These include various species which are more associated with old woodlands, such as wood warbler and pied flycatcher as well as nuthatch, tawny owl, redstart, great-spotted woodpecker. Lesser horseshoe bats have also been recorded foraging in the woodland. The Banwy River also adds further interest with dippers regularly seen and almost certainly used by otters. A number of moths associated with woodlands and native trees have been recorded, such as Black arches moth (caterpillar feeds on oak), September thorn moth (oak, birch and lime), copper underwing (oak, honeysuckle, ash), Alder moth (caterpillar feeds on birch, oak, hawthorn), Bird-cherry moth (feeds on bird cherry), blue-bordered carpet (alder, blackthorn, birch). The wild-garlic hoverfly (*Portevinia maculata*) was also found during this assessment, the larvae of which feed solely on the bulbs of the wild-garlic plants, and so is generally restricted to old woodland sites.

A significant proportion of the site is considered to be in a critical condition, given the dominance of the most shade-casting conifers and beech, both in the canopy and in areas in the sub-canopy and regeneration layers. A large part of the site is also considered to be in a threatened condition, where the most shade-casting conifers and beech are perhaps having slightly less impact, but where in the long-term the condition will probably continue to decline further without management. The most secure parts of the site are in the southwest corner of the site, along the main stream corridor between Deri Wood and Goat Field, and also Goat Field itself – despite not being regarded as ancient woodland, the riverside section in particular is still considered to be in a fairly secure condition. Secure condition does not necessarily mean that no management is required, but it does help focus where the priorities are.

Further detail is provided below on how different areas have different levels of priority, in terms of what remnant features occur and works could be achieved in the short-term. This is based on operational constraints and access as well as those which are considered more threatened than others. The management recommendations below outline what works could be undertaken in the short-term to continue to improve the condition of the site.

8. Ancient Woodland Features Survey and Management Recommendations

The following section provides some detail on the ancient woodland features on the site, their occurrence and condition (8.1), and some management recommendations to enhance these features (8.2).

The following terms are often used, and their meanings are described below:

<u>Ancient Woodland Remnant Features</u>: Their status can be categorised as follows (this is not an appraisal of the stand quality):

• Secure: likely to remain the same or improve given current conditions.

• Threatened: unlikely to be lost in the short term, given current conditions, but long term survival is doubtful without intervention.

• Critical: need urgent action to avoid irreversible loss or serious deterioration.

Abundance descriptions





The DAFOR scale stands for: D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare. This is mainly used for ancient woodland flora and other features. Occasionally estimated percentages are used for canopy trees:

D for **Dominant** - a species/feature is the most common plant by far, generally covering over 75% of a given area. For example in a conifer plantation, Sitka spruce *Picea sitchensis* might score **D**;

A for Abundant - A is only used if the species/feature was really very common in across the area. For most species this would mean that there were thousands of individual plants present. In most woods, only a few species will score as highly as A and in quite a few woods there will be no species that score that highly. (Sometimes LA – Locally abundant, if there is one or a few patches where the species is much more abundant than elsewhere).

F for Frequent - **F** is used if the plant is found in several places in the wood and there was usually more than just a few individuals in each of these places. **F** is used if the plant was only present in one part of the wood but was very common in that part (sometimes called **LF** – locally Frequent), with many individuals and covered a substantial area

O for Occasional - O is used for species/features that occur in several places in the wood, but whose populations are usually not very big. Use **O** for species that are very common in one bit of habitat within the wood that occupied just a small area. **O** is used for many species in most squares.

R for Rare –**R** is used for any feature/species that occur as a small number of individuals in the wood. This small number of individuals may be located in one place in the wood, or scattered over several different locations within the wood. In many PAWS woods **R** is likely to be the score that a lot of species get.

<u>Compartment map</u>: The site has been compartmentalised into 13 sub-compartments, largely based on stand species and/or condition.

8.1 Compartment Descriptions, Ancient Woodland Features and Condition (Photos in Section 9)

Cmpt	Compartment Description –	Ground Vegetation	Other Important	Threat	Specific Threats
(Ha)	Including Tree Canopy and Sub-canopy (*=Considered an Ancient Feature		Features (Pre-	Level	
	species:	Woodland Indicator Plant)	plantation deadwood,		
	(Red = Considered Non-Native)		hindiversity		
	(-any notable, pre-plantation,		*=Considered to be		
	veterall of ancient trees		indicative of ancient		
			woodland)		
1a	In the southwest corner of the site,	Ground vegetation is	Pre-plantation	Secure	Beech, both
(0.52)	mainly oak (A) and <mark>beech</mark> (F) in the	generally quite abundant (fig.	deadwood is mostly		mature/seeding
	canopy, but also understory rowan,	Some ancient woodland	old large oak stumps,		canopy trees and
	hazel, birch, holly, beech and generally	plants noted include	with little standing or		also regeneration.
	more semi-natural in structure. Fewer	*bluebell (O/LF), *wood	fallen large		Disturbance to
	larger/older oaks than elsewhere on	speedwell (O), *honeysuckle,	deadwood. No		ground nesting
	the site, but generally more abundant	gooseberry, Also bramble is	obvious		birds. Potentially
	in the canopy. No track access for	quite abundant. Oak	archaeological		vigorous bramble
	vehicles making extraction more	regeneration and saplings are	features. Noted Red-		if opened up too
	difficult. Infrequently visited by the	occasional here, where they	headed cardinal		rapidly.
	public as no paths. Considered a good	are sparser elsewhere. The	beetles, which are		
	place to try to encourage ground	bank above the car park has a	associated with old		
	nesting birds away from disturbance by	good richness of woodland	broadleaved trees		
	dogs etc.	flora on it.	and live under loose		
	Photographs in Section 9 (Figure 7)		bark.		
1b	An area more dominated by mature	Flora most abundant along	Pre-plantation	Threatened	Beech,
(0.37)	Beech (A) with abundant beech	top edge (hotspot 3 on map)	deadwood mainly of		mature/seeding
	understory in places. Also some larch	with *wood melick grass (F),	old large oak stumps		canopy trees and
	(O). Oak is still fairly abundant in the	*bluebell (F). Flora is sparsest	(e.g. Fig. 13), with		also regeneration
	canopy, and the developing oak is of	where the beech is most	little standing or		creating shade
	good quality in places. Oak is fairly	dominant/shading, but within	fallen large		and heavy leaf-
	sparse in the understory. Like 1a, there	the stand where sufficient	deadwood. No		litter, and
	are not many large diameter oak	light is reaching ground, small	obvious		suppressing
	(>70cm DBH), although 3 were	hotspot pockets occur, with	archaeological		native tree





	recorded on the top edge with Cmpt 3a. Rowan, Holly, Hazel are all	*great wood-rush, *bluebell, broad bucker fern, and in	features.		regeneration and ground
	occasional but suppressed by beech. A	places ash regeneration which requires releasing or			vegetation. Only a
	was noted on the corner of the main	will not become established			considered a
	track – probably the largest of the	(e.g. in Fig 12). Abundant			particular threat
	avenue of these planted trees. Track	beech regeneration. Sparse			and add amenity /
	access from below compartment	oak or other native			diversity value at
	enabling vehicular/winching access for	broadleaved regeneration.			current level.
	extraction.				
	Photographs in Section 9 (Figures 8 to				
10	IZJ. Woodland surrounding the open stope	Flora is rich along the stream	*insects recorded	Threatened	Beach in the
(0 35)	circle area, the brick nump house and	corridor (hotspot 1 –see fig	along the streamside	(although	canopy and
(0.55)	running alongside the main stream	13) with a number of ancient	included the garlic	some of the	regeneration
	between Deri Wood and Goat Field.	woodland plants which are	hoverfly (Portevinia	streamside	creating shade
	The streamside woodland is amongst	much rarer or don't occur	maculata) which	woodland is	and heavy leaf
	the richest and most semi-natural	elsewhere in Deri Wood like	feeds as larvae on	more	litter, and
	woodland on the site. Canopy here	*wild garlic/Ramsons (A/LD)	wild-garlic bulbs so is	secure and	suppressing
	includes oak (F), beech (F), cherry (O),	*woodruff (F), valerian (O).	generally restricted to	ASNW in	native tree
	alder (O), ash (O), sycamore (O). Sub-	l here is also *wood-	ancient woodlands.	character)	regeneration and
	canopy with wych eith (O) , hazer (O) , vew (O) bolly (O) bazel (O) .	(F) *bluebell (F) *vellow	deadwood mainly of		ground vegetation Small
	maple (Ω) . Some of the compartment is	nimpernel (0) *wood melick	old large oak stumps		natch of
	accessible to vehicles from the main	(O),*red campion (F),	with some large fallen		Rhododendron in
	track, although parts of the	*greater stitchwort (F). Away	deadwood in the		the corner of 1c .
	compartment would be more difficult	from the stream, and	stream area which is		Potentially also
	to extract timber from. Generally not	particularly on the corner	of biodiversity value.		yew where it
	many large oaks, but around the stone	near the pump-house, the	No obvious		becomes too
	circle are a couple of examples of large	ground flora becomes more	archaeological		abundant in the
	mature beech (80-85cm DBH) which	dominated by "great wood-	the brick nump-		understory.
	impactful are also probably of some	such as $*$ hard-fern (O) and	house		
	amenity value as significant trees	slender St. John's-wort (O).	nouse.		
	(marked on features map below).				
	Photographs in Section 9 (Figures 13				
	to 14).				
20	Peach (A) and Dauglas fix (O) form the	Cround vegetation is	Dro plantation	Threatoned	Dominance of
Za (0.26)	majority of the tree cover in this	generally quite sparse where	deadwood mainly of	Inreatened	beech
(0.20)	compartment, with some mature oak	the beech is most dense, and	old large oak stumps.		particularly
	(O) scattered amongst them, including	generally most of notable	with little standing or		understory
	4 marked on the features map below	ground vegetation is along	fallen large		/regeneration of
	(which are >70cm DBH). Some of the	the more open path-side	deadwood.		beech and the
	Douglas fir are of considerable size (up	bank below, where various			large seeding
	to 70 cm DBH) and potentially timber	woodland species occur such	NO ODVIOUS		trees within this
	value, although they are generally not frequent across the site, so their	as "wood sorrel (U), "hairy	archaeological		compartment
	amenity/diversity value is also	rush (O/LF). *slender St			shade and leaf-
	significant. The main track above	John's-wort (O). The more			litter and
	makes vehicular access and	inaccessible riverside banks			suppressing
	extraction/winching more	and rocks are probably more			native tree
	straightforward, but it is steep in places	rich in woodland plants.			regeneration and
	and direction of felling (upslope) is				ground
	crucial given the steep slopes to the				vegetation.
	nver, and the rootpath/barrier fencing				
	Photographs in Section 9 (Figure 15)				
2b	A mixed compartment with half of it	Path-side bank with *wood	Pre-plantation	Threatened	The most threat is
(0.39)	with very large mature grand fir (A) (up	sorrel, *hairy wood-rush,	deadwood mainly of	(parts of the	where the grand
. ,	to 80 cm DBH – e.g. fig. 22) and the	*great wood-rush, *slender	old large oak stumps,	densest	fir is densest and
	other half with much denser grand fir	St. John's-wort. Ground	with little standing or	Grand Fir	creating the most



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	(A) with pockets which are probably in a more critical condition (e.g. fig. 16). Beech is also frequent throughout the compartment, and scattered large mature oaks also occur in the canopy (including 9 significant oaks which are mapped on the features map below). In places, additional species such as cherry and ash occur. 3 particularly notable ash are mapped on the features map below (up to 73cm DBH) and are being overtopped and suppressed by adjacent conifers. The main track above makes vehicular access and extraction/winching more straightforward, but it is steep in places and direction of felling (upslope) is crucial given the steep slopes to the river, and the footpath/barrier fencing below. Photographs in Section 9 (Figures 16 to 17).	vegetation and regeneration more frequent in the area with large grand fir where more light is reaching the ground, with ash (F) and other conifers such as western hemlock (O) regenerating. In the densest grand fir areas, ground vegetation is sparse and restricted to small pockets which need opening up.	fallen large deadwood. Archaeological features – an area of excavations into the slope have been recorded on the features map below (blue hatched area) – Initially some thought was given to whether these were charcoal burning platforms (as are quite often encountered on ancient woodland sites in this part of Wales), but this could not be confirmed.	are more Critical)	shaded conditions, which need opening up. Also where they are overtopping remnant broadleaves (particularly the mapped ash). Conifer and beech regeneration needs to be controlled, particularly where having an obvious impact on any nearby native regeneration.
3a (0.11)	This small compartment is distinguished by the dense underplanting of Western Red Cedar (A) beneath large mature oaks (approximately 5 recorded on the features map below – up to 110cm DBH). Some beech also occurs around the compartment. During the survey this was seen as a critical part of the site and has subsequently been thinned (Aug 2016) through a joint operation between the Wildlife Trust and Woodland Trust in co-operation with the Llanfair Caereinion Town Council. The resulting timber was extracted using horse-logging and stacked in an area below, near the main track. The timber may be used on site for fencing. Photographs in Section 9 (Figures 18 to 21).	Ground vegetation is generally very sparse or non- existent, in very dark conditions (Fig. 26). A small fringe of ancient woodland plants occurs along the top edge of the wood, where *wood-melick, *bluebell, *red campion, do occur. The reaction to the thinning will be interesting to see what seed-bank will re-establish or what plants will move into the area. The adjacent area of Cmpt 4a has fairly frequent understory including hazel and rowan which would be good to see here.	Pre-plantation deadwood mainly of old large oak stumps. Some fallen large deadwood (large oak branch). No obvious archaeological features.	Critical during survey (Now considered Threatened since thinning works Aug 2016)	Western red- cedar is now thought to be at a level where it is hoped some regeneration of ground vegetation and native saplings will establish, but needs to be monitored and further thinning will be required in a few years' time.
4a (0.57)	This mixed compartment is generally mostly a mix of canopy beech (F) and large oaks (F) and occasionally cherry (O), sycamore (O) and rarely birch (R – generally across the whole site). Approximately 24 large oaks were GPS recorded and mapped on the features map below, including some notably large ones (up to 130cm DBH). In places, the understory is more semi- natural, with Hazel, Rowan, Wych elm, Holly, Yew, but most of the compartment is characterised by dense shading understory of beech, some of which is naturally regenerating and some of which is clearly planted in lines and being suppressed/kept in check by closed-canopy. Some planted Turkey	Ground vegetation is quite scattered in places, particularly with <i>Dryopteris</i> ferns, but never abundant or well developed, and usually away from the densest beech understory areas which are most bare. Perhaps most frequent along the top-edge of the site, with the thin hotspot of *wood melick, *bluebell, *red campion, etc. (although this also has the edge-effect of more coarse vegetation such as bramble).	Pre-plantation deadwood mainly of old large oak stumps, with little standing or fallen large deadwood. No obvious archaeological features.	Threatened	Beech, canopy and dense understory creating dark conditions, heavy leaf litter and suppressing native tree regeneration and ground vegetation.



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	oak (trackside) and Large-leaved lime				
	(trackside) and Large-leaved line (trackside) occur. Access is good, and most of the slope could be worked by winching down to the main track. Photographs in Section 9 (Figures 22 to 23)				
4b (0.06)	A small open area where windblown oak fell. Now mostly open canopy with a few individual trees of Spruce, Red Oak, Rowan, Ash. Photographs in Section 9 (Figure 24)	The sudden open conditions created by a large canopy- gap are quite revealing - a flush of Ash regeneration and ground flora with *Common figwort, *yellow pimpernel, *great wood-rush, *wood speedwell, *bluebell, *red campion Foxglove. The sudden increase in light and nutrients has also created a flush of rosebay willowherb, bramble (A/D) and nettle, which helps demonstrate why opening up the canopy more gradually is preferred.	Small compartment. No obvious archaeological features. Fallen mature oak has been extracted from the site.	Threatened	Coarse bramble growth may choke up regeneration which may take longer to establish. Small amount of red oak
5a (0.28)	Mature Western Hemlock (D) is the main canopy species here, though several pre-plantation large (up to 130cm DBH) mature oaks occur within the stand (GPS mapped and marked on feature map below). The slope is quite gentle here and vehicular access to fell and extract timber here is possible, although there is no turning circle at the end of the track so and lengthy vehicle/trailer would have to be backed down. Photographs in Section 9 (Figures 25 to 27).	Generally, there is very little ground vegetation beneath the western hemlock here. Small canopy gaps have created pockets of ground vegetation, where Ash regen is quite frequent, along with *bluebells, *wood anemone and celandines (e.g. Fig 27), and could be secured by opening up the canopy further.	Pre-plantation deadwood mainly of old large oak stumps – because of the lack of ground vegetation these are quite obvious although whether these were felled to make way for the current hemlock, or at some point previous to that, it is not known. Little standing or fallen large deadwood. No obvious archaeological features.	Critical	Dense western hemlock, particularly where small pockets of ground vegetation and natural regeneration could do with opening up/releasing.
5b (0.26)	Western Hemlock (D) and Western Red Cedar (F) are the most dominant canopy species here. Some mature oaks are scattered in the stand, with the occasional other native species such as one mature alder (a species generally quite sparse across the site, but would probably naturally occur more frequently in the west flushes on the lower slopes) and ash which are generally being overtopped by the hemlock. The main track above makes vehicular access and extraction/winching achievable, but it is steep in places and direction of felling (upslope) is crucial given the steep slopes to the river, and the footpath/barrier fencing below. Photographs in Section 9 (Fig. 28 &29).	Some of the barest ground in the wood, with most of the ground vegetation limited to the riverside bank at the bottom and in pockets where canopy gaps have been created by windblown trees. *Wood sorrel, as a more shade tolerant species, is one of the few ancient woodland plants to be noted here, along with some *hard-fern and *great wood-rush along the lower path.	Pre-plantation deadwood mainly of old large oak stumps – because of the lack of ground vegetation these are quite obvious. Little standing or fallen large deadwood. No obvious archaeological features.	Critical	Dense conifer canopy cover, particularly where small pockets of ground vegetation and natural regeneration will eventually be shaded out unless halo-thinning of conifers around these hotspots is carried out.



6a (0.29)	A distinctive stand of mainly Norway Spruce (A) at the far end of the site, but the canopy is also characterised by the frequent mature pre-plantation oaks throughout - 14 significant oaks were mapped on the features map below (up to 120cm DBH). Some of the Norway spruce has self-thinned and remains as standing dead trees. Other canopy species include ash, mature cherry, sycamore, and in places the understory is quite well developed with hazel, rowan, holly, and a group of mature elders. The main track narrows towards the end of this compartment and there is no turning circle for any vehicles. Any vehicular extraction would have to be reversed in, or timber forwarded further along the track. Photographs in Section 9 (Figure 30)	In places the ground vegetation cover is quite well developed, including locally abundant *bluebells and *wood anemone in spring, *yellow archangel, *red campion, *greater stitchwort, and patches of *red currant. The more dominant canopy of the large oaks (can be made out on aerial photos) in this compartment is probably helping contribute towards a better ground flora cover, but this could still be greatly enhanced by thinning out the Norway Spruce.	Pre-plantation deadwood mainly of old large oak stumps No obvious archaeological features.	Threatened	The Norway spruce are having an impact on the ground vegetation and natural regeneration potential of the compartment, and should be gradually thinned over several interventions.
7a (0.68)	Beech (A) is abundant in the canopy and sub-canopy here, although there are also a lot of mature oaks (incl. 25 mapped significant oaks - one at 135 cm DBH, the largest recorded on the site). Notably, there is also a small pocket of mature field maple near the fork in the path (record on the feature map below). Elsewhere, there are some Ash (LF associated with flushes), Holly, Rowan, Hazel, Elder (R). The main track narrows and heads upslope before the end of this compartment and there is no turning circle for any vehicles. Any vehicular extraction would have to be reversed in, or timber forwarded further along the track. Photographs in Section 9 (Figure 31 & 32)	Beneath the densest beech canopy and understory, the ground is very bare. Where this thins out slightly, and where the canopy is more of oak, there is a more scattered ground flora. *Bluebells are quite frequent in places, along with occasional *wood- anemone, *hard-fern, *honeysuckle, *great wood- rush, *wood-sorrel, *hairy wood-rush, *sanicle. Wet flushes (e.g. hotspot area 5) occur in places on the lower slopes, where ash regeneration is occurring along with more damp- woodland ground flora such as *Opposite-leaved golden saxifrage (A).	Deadwood includes a large standing wind- snapped snag of oak (with tree bumblebee colony <i>Bombus</i> <i>hypnorum</i>), which is mapped on the features map. Also pre-plantation oak stumps throughout. No obvious archaeological features.	Critical	Beech mature and seeding and regeneration, creating heavy shade and leaf- litter and suppressing native tree regeneration and ground vegetation.
8a (1.21)	Goat field has been extensively planted with a wide-range of locally native, nationally native and non-native trees. On the whole there are frequent native trees in the canopy such as ash, oak, alder, along with frequent sycamore. There examples of other species such as small leaved lime (planted), wild- service tree (planted), Crab apple, Yew, Field Maple, Dogwood, Wild cherry etc. Photos in Section 9 (Fig 33 to 34).	Riverside hotspot is rich with *wild garlic, *pignut, *great wood-rush, *dog's mercury, *bluebell, *wood anemone, *red campion, *water avens, *harts-tongue fern. Also riverside rocks support the locally scarce globeflower (1 plant noted here in 2016 – larger stands occur downstream and upstream).	Deadwood not noted. No obvious archaeological features.	Secure	Himalayan balsam threat to riverside flora. Vigorous bramble growth in places.

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September 2016 - Deri Wood, Llanfair Caereinion - Aerial Image (Google)





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8.2 Recommendations for Restoration Management and Priorities

<u>Work Priorities:</u> are prioritised ranging from 1-5, this is based on the threat posed to the relevant ancient woodland feature, and the operational constraints. These recommendations are based on an ideal scenario and timescales are not expectations, with numerous considerations which may delay, such as access, timing/season, felling licence applications, contractors, other constraints etc. Depending on contractors and marketing of timber, it may also make most sense to bundle operations together in order to scale up quantities and potentially being more attractive to potential contractors/buyers. For example in this case, a contractor may be interested in thinning all the beech compartments for firewood, and potentially the same contractor may also be interested in some of the softwood thinning for sawlogs, biomass, fencing etc.

Priority 1. Critical works to offset an immediate risk e.g. immediate action as is reasonably possible (such as halo thinning of dying overtopped pre-plantation broadleaves).

Priority 2. Pressing work to threatened areas – Ideally undertake within 1 year.

Priority 3. Works definitely to be completed in plan period – Undertake 1-3 years.

Priority 4. More medium term work priority, might carry over into a next plan period – Undertake 3-5+ years.

Priority 5. Longer term priorities e.g. thin to remove the last 10% of conifers on the site – Undertake 5-10+ years.

Priority	Timescale	Cmpt	Recommendations
1	Immediate	3a	Thin and extract western red cedar, all stems <10cm diameter and 5m3 of larger
			diameter material targeted on those surrounding mature oaks and canopy. Brash to be
			piled neatly beneath most shading trees remaining (i.e. on the barest ground). Potential
			use as fence and strainer posts on the site (<u>completed 08/2016</u>).
			Observe/monitor/record tree regeneration and any ground flora returning. Depending on
			this regeneration, consider repeat thinning again in 2-5 years, where potentially a
			significant proportion of the remaining western red cedar and beech could then be felled
			and extracted for sale or use. The larger diameter trees would probably be for a
			contractor, but any smaller diameter trees could be felled and brashed using hand tools
			by volunteer work groups.
		5a	Thin the Western hemlock, western red cedar and any other conifers/beech in this
			compartment to begin the gradual canopy transformation. Initially focus this on halo
			thinning around remnant native broadleaves (particularly the 7 mapped oaks) and any
			hotspots of flora and natural regeneration (e.g. the pockets of ash regeneration); to
			approximately remove approximately 20 to 25% of the standing trees (1 in 4 or 1 in 5
			trees). Where obviously in rows, it may useful to cut racks/line-thin to make felling-space
			and extraction more straightforward, but may not be required. Brash to be piled neatly
			beneath most shading trees remaining (i.e. on the barest ground). All trees for felling to
			be marked prior to operations to ensure maximum benefit and clarity for contractors.
			Extraction and sale of timber should be possible here to the track below. Consider
			standing sale of all marked trees. Observe/monitor tree regeneration and any ground
			flora returning. Consider enrichment planting of locally sourced oak, birch, hazel, rowan
			etc. if regeneration is not frequent. Likely to repeat thinning again in 4-6 years. Control
		-1	subsequent confer regeneration.
		50	I nin the Western hemlock, western red cedar and any other conifers/beech in this
			compartment to begin the gradual canopy transformation. Initially focus this on halo the mapped alder) and any
			hotspots of flora and natural regeneration, to approximately remove approximately 20 to
			25% of the standing trees (1 in 4 or 1 in 5 trees). Where obviously in rows, it may useful
			to cut racks/line-thin to make felling-space and extraction more straightforward, but may
			not be required. Brash to be piled neatly beneath most shading trees remaining (i.e. on
			the barest ground). All trees for felling to be marked prior to operations to ensure
			maximum benefit and clarity for contractors. Extraction/sale of timber should be possible
			here to the track below. Consider standing sale of all marked trees. Observe/monitor tree





Priority	Timescale	Cmpt	Recommendations
			regeneration, and any ground flora returning. Consider enrichment planting of locally
			sourced oak, birch, hazel etc. if regeneration is not frequent. Likely to repeat thinning
			again in 4-6 years. Control subsequent conifer regeneration.
2	0 - 1 yr	6a	Thin Norway spruce to favour all remnant broadleaves in this compartment. Much of the
			initial thinning would focus on halo-thinning around the significant mature oaks (as
			mapped on the features map). It would be envisaged that this would equate to
			approximately 20% of the Norway spruce in the first intervention. The larger diameter
			trees would be for forestry contractors, but any smaller diameter trees could be felled
			and brashed using hand tools by volunteer work groups. All trees for felling to be marked
			prior to operations to ensure maximum benefit and clarity for contractors. Brash to be
			piled neatly beneath most shading trees remaining (i.e. on the barest ground).
			Extraction/sale of timber should be possible here to the track below, although limited
			turning options might be an issue. Consider a standing sale of all marked trees, or
			extraction and sale of smaller quantities at road-side or delivered-in to nearby fencing
		41-	contractors of suitable diameter fencing timber.
		10	Mature beech to be marked and selectively thinned and where feasible extracted for
			The wood through whiching to track below. Where obviously in rows, it may be useful to
			ine thin/cut racks to make reling-space and extraction more straightforward, but it hot
			required then best to keep it selective. Some smaller diameter (approx. 20-55cm DBH)
			oak would benefit generally from thinning. All trees for felling to be marked prior to
			operations to ensure maximum benefit and clarity for contractors. Significant proportion
			of beech understory to be cut and stacked focussing where there is an immediate
			impact/competition with nearby native broadleaf understory (particularly hazel, rowan
			ash here). Brash from felled beech to be ideally stacked neatly in the most shaded places
			remaining, or the barest ground areas.
		7a	Selectively fell mature beech and large proportion of beech understory, consider through
			small glade creation (perhaps 10m x 10m clears) as opposed to general selective thinning,
			giving enough light to demanding oak/birch/ash/rowan. Extract for firewood via track
			above. Consider rake/disturbing thick beech leaf litter depending on disturbance created
			during harvesting. Monitor regen, and add oak/birch/rowan/hazel if regen is not
			forthcoming. Control all beech/conifer regen.
		2a	Mature beech in stand to be marked and selectively thinned and where feasible
			extracted for firewood through winching to track above. All trees for felling to be marked
			prior to operations to ensure maximum benefit and clarity for contractors. Significant
			proportion of beech understory to be cut, focussing where there is an immediate
			impact/competition with nearby native broadleaf understory (particularly hazel, rowan,
			ash here). Brash from felled beech to be ideally stacked neatly in the most shaded places
			remaining, or the barest ground areas. Some of the large-diameter Douglas fir are
			probably of value, but will likely increase in value as they increase in size (as opposed to
			most of the other confirers on the site). Also considering there are only perhaps less than
			to on the site, retaining a rew of the larger specimens as a cultural reference to the sites
			to fell/cut it until you have a spec from a merchant. Most of the other conjers and heech
			are likely to be of firewood/chin
3	1 - 3 vrs	2b	Priority is to thin the smaller diameter and most shade-creating Grand Fir and any other
5	1 <i>3</i> y 3	25	conjfers and beech in the compartment (hemlock/beech). A number of the larger
			diameter Grand Fir are probably worth retaining as they are not having such a significant
			impact on the ground vegetation, they are also a difficult timber to market, and they
			have value as amenity/diversity, particularly given their size.
		4a	Similar to 1b, priority is to mark and selectively thin mature beech and where feasible
			extract for firewood through winching to track below. Where obviously in rows, they can
			be line thinned to make felling-space and extraction more straightforward. All trees for
			thinning to be marked prior to operations to ensure maximum benefit and clarity for
			contractors. Where, for practical reasons, these marked trees cannot be felled/extracted

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Priority	Timescale	Cmpt	Recommendations			
			easily, then they will be retained for now. Significant proportion of beech understory to			
			be cut and stacked, focussing where there is an immediate impact/competition with			
			nearby native broadleaf understory (particularly in the areas with more hazel and rowan			
			here). Brash from felled beech to be ideally stacked neatly in the most shaded places			
			remaining, or the barest ground areas.			
		1c	Control small area of Rhododendron. Consider some thinning of the beech and any			
			conifers in this compartment, but extraction is trickier as a lot of the compartment is not			
			so readily accessible for vehicles. Some thinning to waste along the stream section may			
			be of value, especially if some additional deadwood is left in the stream – deadwood in			
			watercourses is a valuable habitat. Control any beech and conifer regeneration.			
4	3 – 5+ yrs	1a	Consider fencing off this compartment from the adjacent 1b, to create an area with less			
			disturbance to ground nesting birds. Selectively fell-to-waste or ringbark mature beech to			
			create more standing and fallen deadwood on the site. Also, access is not so			
			straightforward here so timber extraction is not so likely and may be too damaging to the			
			ground flora/other trees.			
		4b	Monitor the regeneration of any saplings and consider controlling the vigorous bramble			
			growth if this is seen to be inhibiting the re-establishment of tree cover here.			
5	5 – 10+ yrs	8a	Generally to be managed for public amenity, with no particular silvicultural management			
			seen as a priority. Control the Himalayan balsam (by pulling before seed setting) which is			
			occurring along the riverside.			
		-				

General Constraints, Considerations and Suggested Recommendations

Badgers - There is an active badger sett in Cmpt 1a. This will need to be considered during any felling works in this compartment, although it is not recommended that any timber is extracted here, and most operations would be ringbarking or fell-to-waste to increase deadwood.

Public Access – Careful thought will need to be given to managing public access during any tree felling and extraction operations.

Grey Squirrels – there are grey squirrels in the wood, and there are some signs of tree damage from the squirrels.

Felling licence – See section 10 (further information). Generally most of the thinning operations recommended above will be at a scale requiring a felling licence. There are exemptions to this, and some smaller-scale works will be possible without a licence.

Engagement with School/Community – consider a day getting children and community to collect tree seeds and woodland flora seeds (like bluebells, red campion etc.) to grow-on or scatter in areas that are being managed and opened up. A small part of the site could be used to create a small nursery to grow on tree seeds which could be later planted out into areas which had been thinned (this could include propagating/taking cuttings from the large Llanfair Elm tree near the station).







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9. Site Photographs



Figure 7 - <u>Cmpt 1a</u> - Secure, with many characteristics of ASNW. Abunant ground flora with bluebell (F), Dogs mercury (F), Bramble (A), Scaly male fern (F). Canopy with abundant oak, and understory with hazel. Good ground cover for ground nesting birds and generally less disturbance than the rest of the wood (May 2016)



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Figure 8 - <u>Cmpt 1b</u> - Western end of compartment near car park. Canopy oak and beech and abundant beech understory with pollarded large-leaved limes on trackside. Showing pockets of bluebells and ground vegetation on track edge where light is getting in, and the bare ground and heavy leaf litter in the denser beech understory areas. (May 2016)



Figure 9 - <u>Cmpt 1b</u> - Oak and beech canopy and dominant beech understory in the middle of Cmpt 1b. (October 2016)







Figure 10 - <u>Cmpt 1b</u> - Mature beech and oak in canopy - showing two marked beech on right as example of what could be thinned to let light in and give space to develop oak (two trees to the left for example) (October 2016)







Figure 11 - <u>Cmpt 1b</u> - Pre-plantation deadwood - an old oak stump. These features are typical throughout this compartment and the site, and many of the remaining large oaks on the site give an indication of what some of these old trees would have been like (October 2016)



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Figure 12 <u>- Cmpt 1b</u> - Example of the hotspot pockets of native tree regeneration (ash in this case) and ground vegetation (great wood-rush) where some light is getting to the ground. An example of what could be 'released' and enhanced through thinning the beech.







Figure 13 - Figure 15 - <u>Cmpt 1c</u> - the rich streamside woodland fringed with wild-garlic and with species indicative of more base-rich soils such as wych elm and woodruff. (May 2016)



Figure 14 - <u>Cmpt 1c</u> - The wild-garlic hoverfly (Portevinia maculata) which feeds on wild-garlic both as an adult and only on the bulbs of this plant as a larvae. Generally only found in ancient woodland sites (May 2016)

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Figure 15 - <u>Cmpt 2a</u> - Mature canopy oak and beech with dense dominant and heavily shading beech understory with sparse ground vegetation.



Figure 16 - <u>Cmpt 2b</u> - Dense Grand Fir amongst large mature oaks. Sparse ground vegetation but pockets of ground vegetation and natural tree regeneration can be seen in places (e.g. in this photo left of centre). These pockets could be enhanced through thinning the Grand Fir (October 2016).



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Figure 17 - Cmpt 2b - Large mature grand fir, with more ground cover beneath than in the denser conifer stands (May 2016)







Figure 18 - Cmpt 3a - looking down into 3a - Western red cedar underplanted beneath large mature oaks. Supressed western red cedar of thin diameter and highly shading of ground, leaving no ground vegetation or natural regeneration (May 2016). Marked trees for thinning in August 2016. (Photo June 2016)



Figure 19 - Cmpt 3a – Same view after thinning (Photo August 2016)







Figure 20 - <u>Cmpt 3a</u> - during the Wildlife Trust Bioblitz event, Woodland Trust funded horse-logging demonstration to extract the felled western red cedar to be stacked nearby. Interpretation signage produced by Woodland Trust to provide interpretation/information to passers-by (August 2016)



Figure 21 <u>- Cmpt 3a</u> (left) - looking down the main track, with stacked timber ready for use.







Figure 22 - Cmpt 4a - Typical view of the stand composition in this compartment, with large mature oaks, mature beech and abundant beech regeneration and underplanting (October 2016)



Figure 23 - Cmpt 4a – Mature oak with dense beech understory and occasional pockets of hazel, rowan, birch, cherry.

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Figure 24 - <u>Cmpt 4b</u> – Small windblown area is a useful example of both the dormant ground vegetation (including ancient woodland plants such as bluebell, wood anemone, yellow pimpernel, and great wood rush here) but also the potential issues with opening up the stand too quickly and the subsequent growth of coarse vegetation including bramble and willowherb which later in the year are a lot more dominant (May 2016)



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Figure 25 - <u>Cmpt 5a</u> – on the right of the photo, with the edge of Cmpt 4b on the left, showing the bluebells and ground vegetation in the sunlight, with the heavy shade further into the stand. (May 2016)



Figure 26 - <u>Cmpt 5a</u> (on the other side of the track, 5b in the foreground) – Showing the mature hemlock with occasional large mature oak and pockets of ground vegetation/regeneration where light is reaching the ground – needing opening up (May 2016)

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Figure 27 - Cmpt 5a - Mature pre-plantation oaks surrounded with western hemlock and western red cedar. A small trackside pocket of ash regeneration and ground vegetation (with bluebells, scaly male fern, wood speedwell etc.) can be seen in the foreground – an example of the sort of feature which needs 'releasing' through opening up the conifer canopy. (October 2016)







Figure 28 - <u>Cmpt 5b</u> – The lower part of the 5b, with dense, heavily shading, Western hemlock with no ground vegetation or regeneration. (May 2016)



Figure 29 - Cmpt 5b (right) and 5a (left), with the main central track. (May 2016)







Figure 30 - <u>Cmpt 6a</u> - a distinctive stand of Norway Spruce with mature oak and also mature cherry, some ash above. Also reasonable ground vegetation cover, including locally frequent bluebells in spring.



Figure 31 - Cmpt 7a - Some of the densest beech on the site with bare ground beneath. (October 2016)



We will keep you updated on news and events about ancient woodland restoration, and you can contact us at any time if you do not want any further mailings. We are working in partnership with Coed Cymru on this project and occasionally share information with them – again contact us if you would prefer us not to.

through the Heritage Lottery Fund



Figure 32 - <u>Cmpt 7a</u> - An example of one of the largest oaks on the site (135cm DBH).







Figure 33 - Cmpt 8a - Riverside woodland in Goat Field with rich ground vegetation.



Figure 34 - Globeflower on the Afon Banwy (May 2015). Photo taken from the rocks in the river Banwy further downstream toward Llanfair, but this uncommon and notable species also occurs on the river rocks at Deri Wood.



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Supported by The National Lottery® through the Heritage Lottery Fund

10. Further Information

The Woodland Trust is working with Coed Cymru to provide advice and support to owners of ancient woodland sites, particularly those planted with non-native species where ancient woodland features may be damaged or destroyed without positive intervention for more information visit http://www.woodlandtrust.org.uk/about-us/ancient-woodland-restoration/ or email restoration@woodlandtrust.org.uk

Grants: Previously there has been a Glastir Woodland Management (GWM) grant scheme for some of the recommended woodland management operations. The management grant is not currently available and may only offer grant assistance for certain elements of the management operations. Glastir Woodland Management could potentially be available from the Welsh Government and you can place your name on an interested owners list in preparation. Tel: 01597 823777 or email: GlastirTargetedElementQueries@Wales.gsi.gov.uk. We will also make note of any interest you have in grant schemes and let you know if any opportunities arise.

Customer Reference Number: In order to be eligible for Welsh Government grant support you will require a Customer Reference Number (CRN) if you do not already have one. This is a requirement when claiming European based grants and starts A00...... A CRN package can be sought from the Welsh Government Agricultural Department. Telephone: 01597 823777 or email: GlastirTargetedElementQueries@Wales.gsi.gov.uk

Felling Licence: Tree thinning & felling operations will require a felling License subject to the amount of felling that you intend to undertake and the diameter size of those trees. There are exemptions and you can fell a certain amount without a license. Application forms and guidance can be found on line – https://naturalresources.wales/forestry/tree-felling-and-other-regulations/tree-felling-licences/?lang=en





