

# Woodland Management Plan

To be completed by the plan author:	
<b>Woodland or Property name</b>	<b>Acorn Bank</b>
<b>Woodland Management Plan case reference</b>	<b>1268158</b>
<b>The landowner agrees this plan as a statement of intent for the woodland</b>	<b>Yes</b>
<b>Plan author name</b>	<b>Dunnewoods</b>

For FC Use only:				
<b>Plan Period</b> <i>(dd/mm/yyyy - Ten years)</i>	<b>Approval Date:</b>	<b>2023</b>	<b>Approved until:</b>	<b>2033</b>
<b>Five Year Review Date</b>	<b>2028</b>			

Revision No.	Date	Status (draft/final)	Reason for Revision
1	19/06/2023		Consultation

**Template user support:**

The functionality in this version of the management plan template has been downgraded to ensure compatibility with Word 2003. This document is not protected and as such rows can be added & deleted or copied and pasted from tables where needed.

## UK Forestry Standard management planning criteria

Approval of this plan will be considered against the following UKFS criteria.  
Prior to submission review your plan against the criteria using the check list below.

UKFS management plan criteria		Minimum approval requirements	Author check <input checked="" type="checkbox"/>
1	<p><b>Plan Objectives:</b> Forest management plans should state the objectives of management and set out how an appropriate balance between social, economic, and environmental objectives will be achieved.</p>	<ul style="list-style-type: none"> <li>Management plan objectives are stated.</li> <li>Consideration is given to environmental, economic and social objectives relevant to the vision for the woodland.</li> </ul>	Yes
2	<p><b>Forest context and important features in management strategy:</b> Forest management plans should address the forest context and the forest potential and demonstrate how the relevant interests and issues have been considered and addressed.</p>	<p>Management intentions communicated in <b>Sect. 6</b> of the management plan are in line with stated objective(s) <b>Sect. 2</b>.</p> <p>Management intentions should take account of:</p> <ul style="list-style-type: none"> <li>Relevant features and issues identified within the woodland survey (<b>Sect. 4</b>)</li> <li>Any potential threats to and opportunities for the woodland, as identified under woodland protection (<b>Sect. 5</b>).</li> <li>Relevant comments received from stakeholder engagement and documented in <b>Sect. 7</b>.</li> </ul>	Yes
3	<p><b>Identification of designations within and surrounding the site:</b> For designated areas, e.g. National Parks or SSSI, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.</p>	<ul style="list-style-type: none"> <li>Survey information (<b>Sect. 4</b>) identifies any designations that impact on woodland management.</li> <li>Management intentions (<b>Sect. 6</b>) have taken account of any designations.</li> </ul>	Yes
4	<p><b>Felling and restocking to improve forest structure and diversity:</b> When planning felling and restocking, the design of existing forests should be re-assessed and any necessary changes made so that they meet UKFS requirements.</p> <p>Forests should be designed to achieve a diverse structure of habitat, species and ages of trees, appropriate to the scale and context.</p> <p>Forests characterised by a lack of diversity, due to extensive areas of even-aged trees, should be progressively restructured to achieve age class range.</p>	<ul style="list-style-type: none"> <li>Felling and restocking proposals are consistent with UKFS design principles (for example scale and adjacency).</li> <li>Current diversity (structure, species, age structure) of the woodland has been identified through the survey (<b>Sect. 4</b>).</li> <li>Management intentions aim to improve / maintain current diversity (structure, species, and ages of trees).</li> </ul>	Yes
5	<p><b>Consultation:</b> Consultation on forest management plans and proposals should be carried out according to forestry authority procedures and, where required, the Environmental Impact Assessment Regulations.</p>	<ul style="list-style-type: none"> <li>Stakeholder engagement is in line with current FC guidance and recorded in <b>Sect. 7</b>. The minimum requirement is for statutory consultation to take place, and this will be carried out by the Forestry Commission.</li> <li>Plan authors undertake stakeholder engagement (ref FC Ops Note 35) relevant to the context and setting of the woodland.</li> </ul>	Yes
6	<p><b>Plan Update and Review:</b></p>	<ul style="list-style-type: none"> <li>A 5-year review period is stated on the 1st page of the plan.</li> </ul>	Yes



Management of the forest should conform to the plan, and the plan should be updated to ensure it is current and relevant.	• <b>Sect. 8</b> is completed with 1 indicator of success per management objective.
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## Section 1: Property Details

Woodland Property Name		National Trust Acorn Bank	
Name	Sam Stalker, NT Lead Ranger	Owner National Trust	Tenant
Email	sam.stalker@nationaltrust.org.uk	Contact Number	07795603099
Agent Name (if applicable)		Jackie Dunne	
Email	j.dunne@dunnewoods.com	Contact Number	07775514996
County	Cumbria	<a href="#">Local Authority</a>	Westmorland in Furness
Grid Reference	NY 612 281	Single Business Identifier	106327021
What is the total area of this woodland management plan? (In hectares)		15.63 hectares (includes area of new planting)	
You have included an Inventory and Plan of Operations with this woodland management plan?		Section 1 Woodland Management Plan Section 2 Woodland Compartment Inventory Section 3 Plan of Operations for 10-year FLA Section 4 Photo Gallery	
You have listed the maps associated with this woodland management plan? (PLEASE NOTE: Google Maps/ images of maps will not be accepted because they are copyright protected and should not be used commercially without the appropriate licencing from Google).		Map 1 Woodland compartments and RPA parcel details Map 2 Woodland sub compartments Map 3 Features & designations Map 4 Historic features Map 5 Woodland key species composition Map 6 10-year Felling Licence details Map 7 Other notes for review Appendix 1 Acorn Bank 2014 Nature Conservation Evaluation Appendix 2 Acorn Bank 2014 Historic Landscape Report Appendix 3 Ranger list birds, bees and butterflies of Acorn Bank 2018-2022 Appendix 4a Veteran Tree Report 2022 Appendix 4b Veteran Tree Data Sheet	



	Appendix 5 NCA Eden Valley ref 9 Appendix 6 Trees for Red Squirrel Conservation Appendix 7a Country Wildlife Site citation Appendix 7b County Wildlife Site map Appendix 8 NT GUI Integrated PMS Appendix 9 The UK Forestry Standard	
Do you intend to use the information within this woodland management plan and associated Inventory and Plan of Operations to apply for the following?	Felling Licence	Yes
	Thinning Licence	Yes
	Woodland Regeneration Grant	N/A
You declare that there is management control of the woodland detailed within the woodland management plan?	Yes	
You agree to make the woodland management plan publicly available?	Yes with all sensitive information redacted	

## Section 2: Vision and Objectives

To develop your long-term vision, you need to express as clearly as possible the overall direction of management for the woodland(s) and how you envisage it will be in the future. This covers the duration of the plan and beyond.

### 2.1 Vision

Describe your long-term vision for the woodland(s). (*Suggest 300 words max*)

All National Trust properties are managed to meet the charitable purpose and strategy which aims to maximise the benefit for nature, people, and climate. The management of the National Trust woods sits directly within the national strategy to play our part in restoring a healthy, beautiful natural environment by:

- *improving our habitats, soils, and water to a good condition for nature on our estates,*
- *working with others to conserve and renew the nation's most important landscapes,*
- *developing and sharing new economic models for land use that support nature,*
- *championing the importance of nature in our lives today.*

Management of Acorn Bank aims to protect and enhance the woodland contribution to the designed landscape and historical context of the property, whilst maximising the ecological nature and resilience of the woodlands to threats from climate change, pests and disease.

Conserving the historical, cultural and designed landscape of Acorn Bank is a key driver for the management of the whole property, the garden and the woodlands



which have been in integral part of the property for centuries, developing and changing with historic needs and use.

With such a historic property this means focussing on understanding the designed landscape of the property and its unique features within the gardens and woodlands which have a species mix unique to the site and its historic management.

Protecting the designed element and the unique plant species present within Acorn Bank woodland is a key vision to be managed alongside continued work to develop the woodlands for diversity, native species, water resource, soil and carbon and the visitor experience.

Species decline is broadly attributed to lack of structural diversity in woodlands and increased browsing pressure. Our vision is to develop the age structure and tree species diversity from tree seedling and sapling to the woodland canopy. Using targeted interventions and the management of natural processes enable tree succession to develop the diversity of tree species and create a dynamic forest ecosystem.

Within the woodlands and the wider landscape of Acorn Bank identify and understand how to protect and support priority woodland habitats, designated SSSI & SAC river habitat of the Crowdundle Beck and priority species of high conservation importance.

Minimise carbon outputs and sequester as much carbon as possible through the promotion of natural processes to enable good growth of natural regeneration, ground flora and dead wood habitat, minimising soil erosion and seeking opportunities to extend and connect woodlands through woodland creation, field trees and parkland trees.

The vision includes the management and development of quality conservation work with partners, local communities, and key stakeholder organisations to provide rich and inspiring educational and recreational experiences for visitors which are sympathetic to the woodland habitat and features.

The management of the woodlands is expected to conform to the requirements of the UK Forestry Standard and the UK Woodland Assurance Scheme (UKWAS).

## 2.2 Management Objectives

State the objectives of management demonstrating how sustainable forest management is to be achieved. Objectives are a set of specific, quantifiable statements that represent what needs to happen to achieve the long-term vision.

No.	Objectives (include environmental, economic and social considerations)
1	Targeted thinning and felling interventions, where feasible given other constraints, to maintain tree species structural diversity and develop the full woodland ecosystem creating a high nature status enabling wildlife to thrive. Utilise natural processes such as natural regeneration and dead wood decay to develop niche habitats within the woodland ecosystem.



No.	Objectives (include environmental, economic and social considerations)
2	Management and protection of veteran the habitats they provide as well as future recruitment of potential veteran and notable trees.
3	Management of ash dieback to ensure the impacts on tree species diversity is monitored and the risks to all visitors and staff is mitigated and utilising the change as an opportunity to develop resilience and species diversity into the woodland.
4	Control of non-native invasive species within the woodlands including rhododendron and snowberry as well as ensuring invasives from the garden species is monitored and controlled to meet overall habitat tolerance and to maintain the historic landscape features of the designed woodland areas.
5	Management of priority species across the woodlands and Estate habitats including red squirrels, woodland birds, flora and fauna including those associated with the Crowdundle Beck SSSI river system.
6	Management and protection of historic and designed features, plant species and cultural interest within and adjacent to woodland, mitigating potential negative impacts on the woodlands and associated habitats whilst developing facilities to inspire visitor interest.
7	Review opportunities to manage the woodland resource alongside the management of the gardens, parkland, meadows, and field trees. To ensure there is a unified and agreed plan across the whole very interconnected landscaped property.
8	Continue to manage and develop the key opportunities for visitor and community access and education within the woodlands and the wider property; providing good woodland access facilities and volunteer programmes.
9	Ensure the health & safety and environmental risks of all proposed works is assessed at key stages with suitable mitigation measures employed.
10	The management of the woodlands is expected to conform to the requirements of the UK Forestry Standard and the UK Woodland Assurance Scheme (UKWAS)

### Section 3: Plan Review – Achievements

Use this section to identify achievements made against previous plan objectives. This section should be completed at the 5 year review and could be informed through monitoring activities undertaken.

<b>Objectives</b>	<b>Achievement</b>

## Section 4: Woodland Survey

This section is about collecting information relating to your woodland and its location, including any statutory constraints i.e., designations.

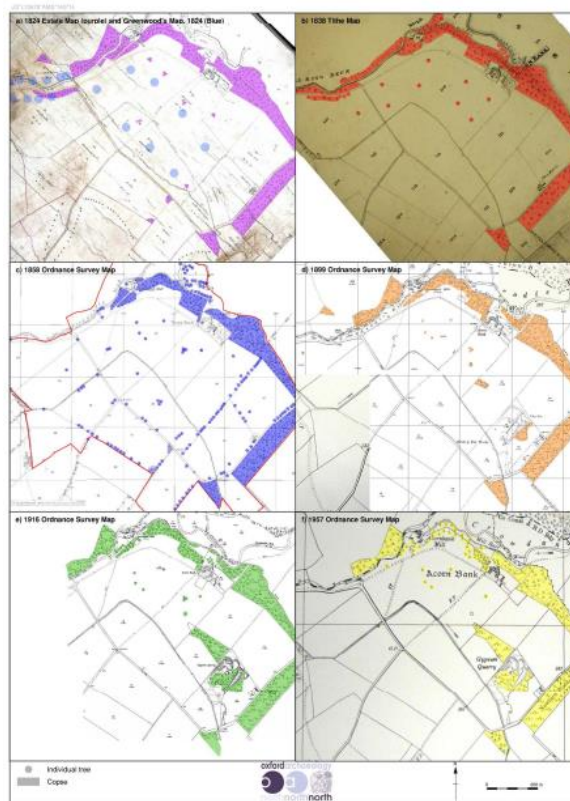
### 4.1 Description

#### Description of the woodland property:

The site of Acorn Bank was, within the medieval period closely associated with the village of Temple Sowerby, the Knights Templar and subsequently the Knights Hospitaller (c1185). Acorn Bank House was taken over by the Crown during the Dissolution and bought by the Dalston's in 1544. The property was gifted to the National Trust in the 1930's by the then owner Dorothy Una Ratcliffe. Today Acorn Bank includes 75 hectares of woodland, parkland, grasslands and formal gardens <https://www.nationaltrust.org.uk/visit/lake-district/acorn-bank>

Woodlands are an integral feature at Acorn Bank and the old oaks on the ridge are likely to have given the name Acorn Bank to the site. The site is not on the Ancient Woodland register yet there is evidence of woodland and mature trees south of Crowdundle Beck in 17<sup>th</sup> century documents, including a reference to *the 'oak woodland at Accornebanke was felled' sometime before 1771*, pg72 of Historic Landscape Survey Report 2014. From a review of many sources the likely time of the woodland establishment at Acorn Bank was 1690-1740. The woodland and parkland locations were shown on Greenwoods 1824 County of Westmorland map and have remained in the same location to date. The 2014 Historic Landscape report (Appendix 2) includes a map dated timeline of the Estate from 1824 to 1957 showing the relative consistency of location, apart from Quarry Wood which is post mining abandonments in 1937.

Figure 1: Map dated timeline of woodland and trees extracted from the 2014 Historic Landscape report page 196.



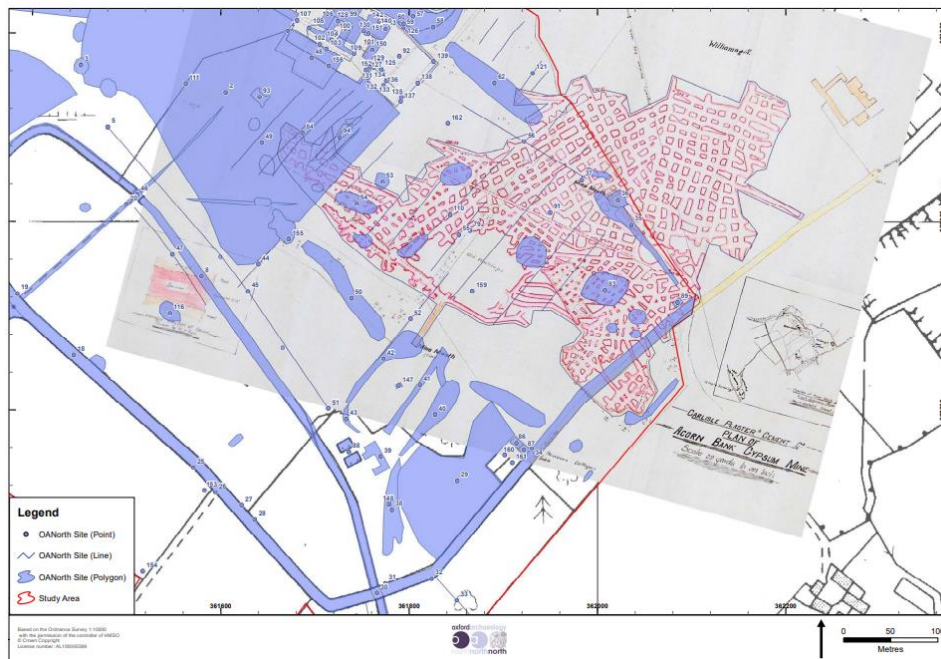


Acorn Bank Mill (GII\* Listed) is a late eighteenth early-nineteenth water powered corn mill. There is some evidence that a sawmill was added in 1892. The millrace (not listed) feeding Acorn Bank corn mill is orientated roughly east west in cpt1 of the woodland north of Acorn Bank House. The race takes the water off Crowdundle Beck via a sluice and weir and the 390m along the bottom of the break of slope within the woodland. The Crowdundle Beck is the County Parish boundary in parts. From the historic mapping shown within the Historic Landscape Report 2014 it appears that the Crowdundle Beck position has moved over time potentially due to engineering for the mill and to create landscaped ponds and pools.

Crowdundle Beck is part of the River Eden and Tributaries SSSI (Site of Special Scientific Interest) and the River Eden SAC (Special Area of Conservation) statutory designations. Crowdundle Beck is SSSI unit 214, an extensive length of the river covering 48 hectares from Cross Fell to the River Eden just west of Acorn Bank. The SSSI unit condition is classed as unfavourable no change (19/01/2023) with the general comments that water framework directives WFD for phosphate targets is not being met. Salmon egg deposition targets are not being met with salmon stocks at risk. Areas of invasive freshwater plants. Overall, for this unit, the river is in unfavourable condition due to poor water quality. The unit was not included within a previous River Restoration Strategy. Natural England report that are opportunities for river restoration as there is river protection and some barriers (including a major weir) that may require removal/modification; consequently, the unit cannot be considered as recovering.

The formal gardens around the house were likely originally constructed around 1656. Since then, there has been several interventions and appendix 2 records a timeline of the 19<sup>th</sup> Century Park and Garden development. Acorn Bank Woodland cpt1a was part of the wilderness garden created in the late 1930's; located on the steep north facing slope of Acorn Bank between the formal walled garden and the Mill Leat. A Lower Garden northeast of the Crowdundle Beck is shown on an 1824 map in appendix 2 page 179. The key elements of the designed garden and woodland landscape are integral features of Acorn Bank today.

Figure 2: Map showing the Mine Abandonment Plan for Acorn Bank Gypsum Mine from 2014 Historic Landscape report page 192.

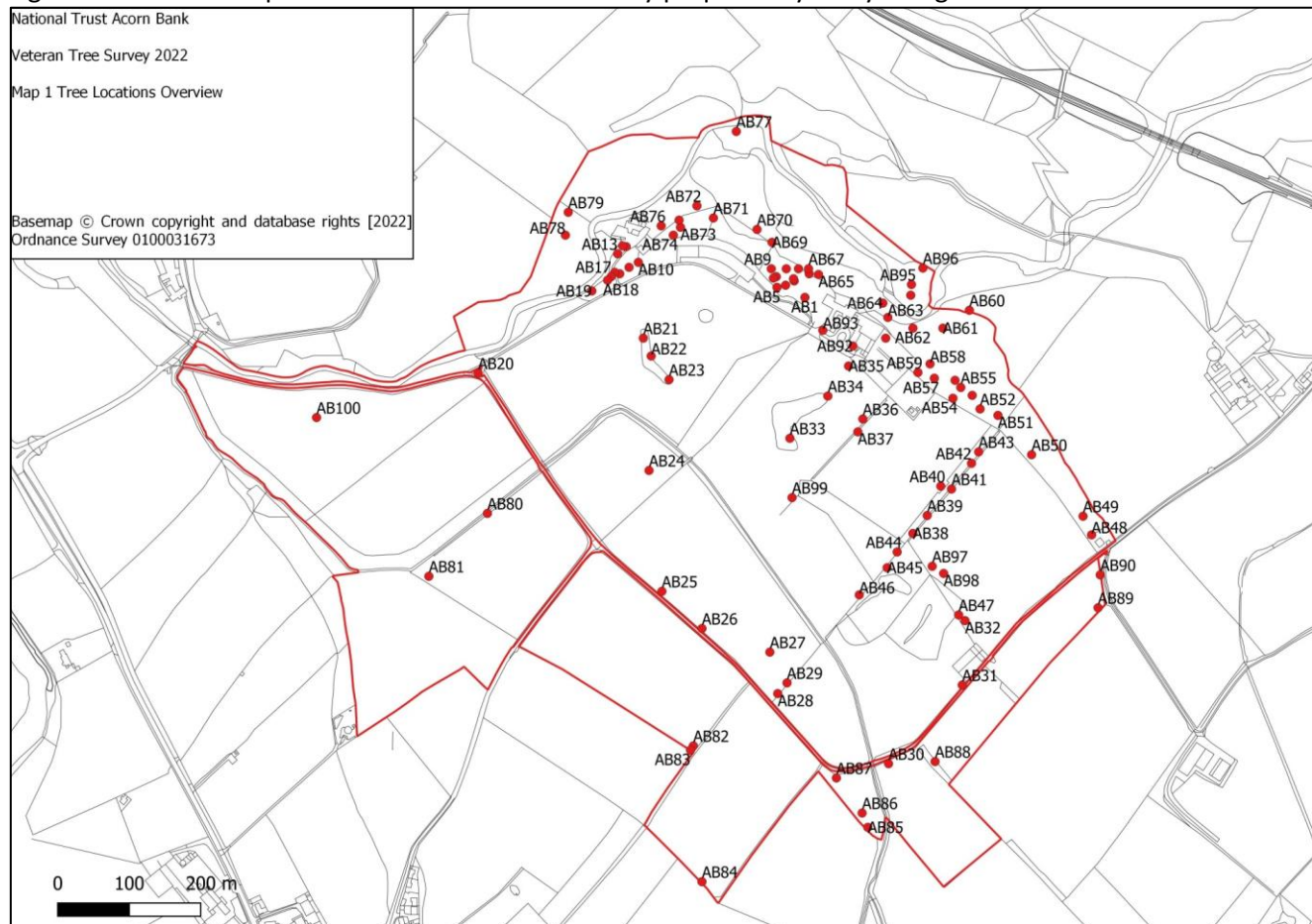


There are extensive earth work remains and several built structures present that relate to historic gypsum mining from the late nineteenth and early-twentieth century (see page 92 for the Historic Landscape Survey Report appendix 2). There is an extensive band of depressions, surface quarry scoops and potential subsidence

of land. Clay extraction took place in Quarry Wood cpt 5 and possibly mineral extraction in Newbarn Wood cpt5. The mining in Quarry Wood is now seen by two ponds and through Newbarn Wood 'depressions' exist in the land; see blue areas on Figure 2 extracted from the 2014 report titled Mine Abandonment Plan for Acorn Bank Gypsum Mine. This has been included here as a reference due to the potential impact on woodland management that needs to be considered. Note there are similar mapped areas in Acorn Bank Wood cpt1 and 2 and across the Estate land. The Gypsum Mine was abandoned on 8<sup>th</sup> January 1938. Post closure the Air Ministry planned for the site to become an explosives store but due to the mining and winter flooding this didn't occur.

The Veteran Tree Survey Report 2022 (appendix 4a) identifies and maps 100 veteran or notable trees across the whole Estate; appendix 4b lists all the trees. 74 of these trees are oak, 9 ash and lime, copper beech, wild apple, pear, Turkey oak, alder, giant redwood and cedar of Lebanon. Using the tree diameter, the report estimates the age of the largest oaks (AB40 The Dalston Oak and AB65 in woodland compartment 1a) to be between 300 and 350 years old. The majority of the oaks with diameters between 110cm and 120cm suggest an age of 160-230 years. In appendix 4b a column has been added to identify readily the woodland compartments with any identified veteran trees. Figure 3 is an excerpt from the report showing the tree locations.

Figure 3 Overview map from 2022 Veteran Tree Survey prepared by Kerry Milligan and Dave Preston.



The site is broadly flat with an elevation of approximately 105m along Birk Syke, rising to 120m east of the house and then dropping to the Mill Leet and the Crowdundle at approximately 90m. The underlying geology is of Permian sandstone with soils of reddish till of the Clifton associations. Boreholes samples from 1933 found gypsum (calcium sulphate), overlain by red and grey marl and grey shale.

The valley has a warm, sheltered to moderately exposed, and moist climate. The soils are very moist moisture status and medium nutrient status (surface water gley/brown earth). With a generally sheltered exposure status 12 to 13 (DAMS exposure index 3-12 is sheltered and 12-16 moderately exposed). Potential for easterly locally named Helm wind to impact the woods to the east of the property.

Soils are generally slowly permeable seasonally wet, reddish fine, slightly acidic but base-rich coarse loamy and clayey soils (Soilscape reference 18), loamy texture, moderate fertility, and impeded drainage. Semi natural characteristic lowland seasonally wet pastures and woodland. At some date between 1768 and 1824 Birk Sike, which runs from the Crowdundle Beck from Millrigg Bridge, was canalised, and straightened potentially to improve the land for agriculture or landscaping. Birk Sike crosses the fields to the south of the house and along the eastern boundary of Corner Wood.

At Acorn Bank today the 15.63 hectares of woodland wrap around the northern edge of the Estate following the southern riparian zone of the Crowdundle Beck; with additional woodland flanking the eastern boundary and a central wood around the old quarry workings; map 1 shows the woodlands within the property and the woodland compartments numbers 1, 2 & 3 (mapped to Forestry Commission and GIS mapping standards). Detailed compartment descriptions can be found in Section 2 Compartment Inventory.

Most of the woodlands are semi-natural in character lowland mixed deciduous woodland with wet alder woodland along Crowdundle Beck. The key species across the property in woodlands, field and parkland is oak, pedunculate oak (*Quercus robur*) is dominant with sessile oak (*Quercus petraea*) and intermediate characteristics of hybridisation. Sessile means stalkless and refers to the acorns and the leaf base tapers gradually into a longer 1cm stalk. Pedunculate oak leaf base is abrupt with two small lobes, leaf stalk less than 1cm and acorns on long stalks. Within the key species detail of the compartment inventory the species have been recorded as oak (OK).

Oaks are dominant across the woodlands, typical of lowland mixed broadleaved woodlands dominant in oak with bluebell (NVC woodland W10) and where ash is more dominant dogs' mercury (NVC woodland W8). Many of the oaks are veteran, notable as well as straight and tall within the woodlands reaching heights of 25m to 27m. Typically, with many years of intervention tree species such as sycamore and beech were introduced and have generally become 'honorary' natives within classifications. There is an alder carr wet woodland along the Crowdundle Beck within compartment 1b; typical of an NVC W7a sub-community. Most of the woodlands have a good understory of shrubs and trees with natural regeneration of saplings including ash, sycamore, Norway maple, beech and in open areas outside the woodland oak seedlings. Ash dieback is present in much of the young regenerating ash and is significantly progressed in many canopy trees. Quarry Plantation one of the younger woodlands established post gypsum mining includes larch, Norway spruce and Scots pine as a significant part of the canopy. Feature trees across the woodlands include horse chestnut, lime, Turkey and Norway maple. Outside the woodland they include copper beech, Cedar of Lebanon, and Giant sequoia (redwood).

The suite of ground flora species changes with the micro conditions but broadly includes enchanter's nightshade, dog's mercury, bluebells, ferns, bramble, ramsons, red campion, celandine, Lords and Ladies, stitchwort, wood avens, carpets of snowdrops and wood anemone, speedwell, grasses, bugle, raspberry, forget-me-not, wood sorrel, fat hen and herb Robert. Woodrush is present along the river in cpt2. In cpt1c of Acorn Bank the ground flora species also reflects the historic designed landscape of the '1930's wilderness garden' with extensive daffodil cultivars.

Appendix 1 the 2014 Natural Conservation Evaluation report expands on areas of interest for conservation work including the Crowdundle Beck and the interactions with the woodlands, breeding birds' including dipper, kingfisher, and grey wagtail as well as a Nationally Scarce short-horned black legionnaire soldier fly within the alder carr and dead wood insect fauna. Work done by Rangers lists breeding birds at Acorn Bank which include common woodland species such as nuthatch, tree creeper and song thrush all breeding on site with greater



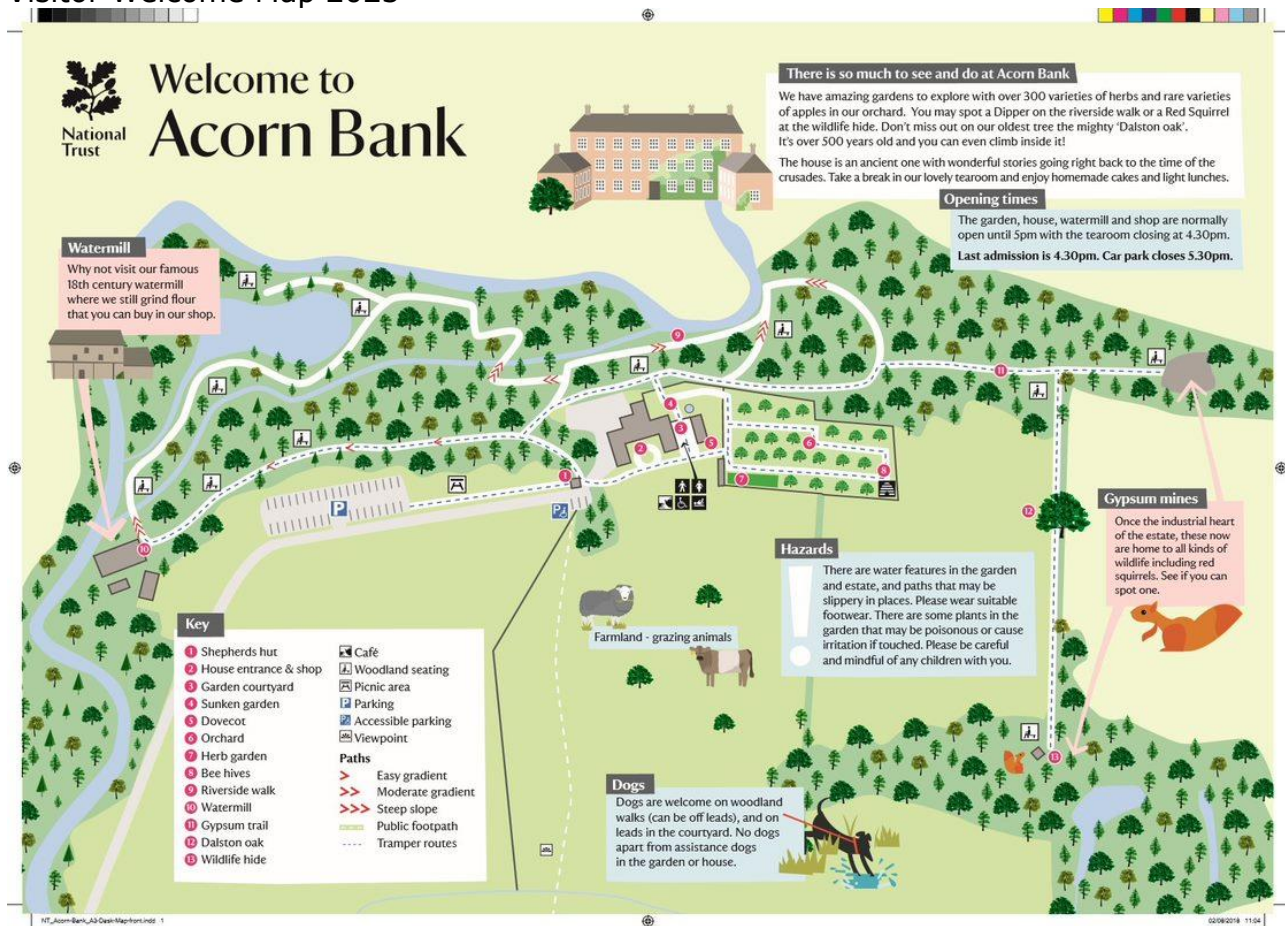
spotted woodpecker, tawny owl, and barn owl. Appendix 3 has a running list of birds, bees and butterflies seen across the whole property collated by the rangers.

Red squirrel is a priority species within the area and regularly seen within the woodlands at Acorn Bank. The area is part of the Whinell fell area of operations with a dedicated Penrith and District Red Squirrel Ranger <https://www.penrithredsquirrels.org.uk/about-us/> Reds are actively fed within the woodlands near the Mill and near Quarry Wood. 2 -3 reds are seen regularly.

Roe deer are present on the site at minimum 4 however impacts on natural regeneration are generally low, particularly in the areas frequented more by visitors. Deer were seen in cpt4 and deer paths. Fraying evident in cpt5.

There are extensive visitor access paths through the main Acorn Bank Wood cpt1 with a picnic area, woodland seating, and interpretation points; see the visitor welcome map shown below. There's a wildlife hide in Quarry Wood cpt4.

### Visitor Welcome Map 2023



## 4.2 Information

Use this section to identify features that are both present in your woodland(s) and where required, on land adjacent to your woodland. It may be useful to identify known features on an accompanying map. Woodland information for your property can be found on the [Magic website](#) and the [Forestry Commission Land Information Search](#).

Feature	Within Woodland	Cpts	Adjacent to Woodland	Map No
<b>Biodiversity - Designations</b>				
<a href="#">Site of Special Scientific Interest</a>	Yes		Yes	Map 3
<a href="#">Special Area of Conservation</a>	Yes		Yes	Map 3
<a href="#">Tree Preservation Order</a>	No		No	
<a href="#">Conservation Area</a>	No		No	
<a href="#">Special Protection Area</a>	No		No	
<a href="#">Ramsar Site</a>	No		No	
<a href="#">National Nature Reserve</a>	No		No	
<a href="#">Local Nature Reserve</a>	No		No	
Priority Habitat PH Woodland	Yes	Cpt1, 2, 3, 4 & 6	No	Map 3
Priority Habitat Lowland meadows	No		Yes	Map 3
County Wildlife Site	Yes	Cpt1 & 2	Yes	Map 3
<b>Notes</b>				
SSSI River Eden & Tributaries Crowdundle Beck is unit 214 and is in unfavourable no change (19/01/2023)				
SAC River Eden				
CWS Acorn Bank woodlands and gardens are listed as a County Wildlife Site on the Westmorland and Furness mapping system, site ID E-NY62-04. Site features noted as: Ancient Woodland - W8, Good population of Great Crested Newts, Five Amphibian Species (GCN, Smooth Newt, Palmate Newt, Common Frog, Common Toad) Amphibian Assemblage - score of 7-8. Survey date 2004. Map and citation appendix 7a & 7b.				

Feature	Within Woodland	Cpts	Map No	Notes
<b>Biodiversity - <a href="#">European Protected Species</a></b>				
Bat	Species (if known)	Possible but within the main house buildings	N/A	Within the buildings are Natterer's bat <i>Myotis nattereri</i> , soprano pipistrelle <i>Pipistrellus pygmaeus</i> and priority brown long-eared bat <i>Plecotus auratus</i> (CWS 2004 citation & Biological survey 2014)
Dormouse	No			

Great Crested Newt	Yes TBC			Recorded as present in garden pond in 2004 CWS & 2014 Biological survey. GKN survey results shown on DEFRA mapping site MAGIC 2017-2019 cpt4 not present.
Otter	Yes		Map 3	Crowdundle Beck
Sand Lizard	No			
Smooth Snake	No			
Natterjack Toad	No			
<b>Biodiversity - <a href="#">Priority Species</a></b>				
<a href="#">Schedule 1 Birds</a>	Species:	Yes		Barn Owl, Kingfisher, Fieldfare, Redwing
Priority Bird Species		Yes		Spotted flycatcher Song thrush Dipper Grey wagtail Nuthatch Tawny owl Tree creeper Pied flycatcher Woodcock Wood warbler Many other recorded by on site ranger.
Mammals (Red Squirrel, Water Vole, Pine Marten etc)	Yes			Priority species red squirrel
Reptiles (grass snake, adder, common lizard etc)	Yes/No			
Plants	Yes	Cpt1	Map 3	Bluebell, dog's mercury, carpets of wood anemone (woodland specialist indicator species) and daffodil cultivars from the designed landscape of the 1930's.
Fungi/Lichens	Not surveyed			
Invertebrates (butterflies, moths, beetles etc)	Yes			A number recorded in the 2014 Biological survey including Nationally scarce short-horned black legionnaire soldier fly
Amphibians (pool frog, common toad)	Yes/No			
Other (please Specify):	Yes/No			

<b>Feature</b>	<b>Within Woodland</b>	<b>Cpts</b>	<b>Map No</b>	<b>Notes</b>
<b>Historic Environment</b>				
<a href="#">Scheduled Monuments</a>	No			
<a href="#">Unscheduled Monuments</a>	No			
<a href="#">Registered Parks and Gardens</a>	No			
<a href="#">Veteran Trees</a>	Yes	Cpt1, 2, 4, 5 & 6	Appendix 4a & 4b	Veteran Tree Survey of the whole site undertaken 2022, spreadsheet and maps available.
<a href="#">Listed Buildings</a>	Yes		Map 4	Grade I Acorn Bank House ref 1226225 Grade II Garden Walls & Gates ref 1265761 Grade II Entrance Arch ref 1265958 Grade II Sundial ref 1226229 Grade II Low wall, gates, gate piers, railings and ha ha ref 1226549 GII* Acorn Bank Mill & associated weir ref 1265726 GII Bank Barn, Cottage & Byre ref 12267706 GII Pigsty ref 1226230 GII Miller's House ref 1265959
<a href="#">Burial Grounds</a>	No			
Other Historic designed landscape	Yes	All	Map 4	The historic designed landscape of Acorn Bank over centuries is a key feature of the whole property for full consideration in all aspects of management. Appendix 2 Historic Landscape Survey Report 2014
Other: Old gypsum mine workings	Yes	Cpt4 & 5	Map 4	
<b>Landscape</b>				
<a href="#">National Character Area</a> (please Specify): Eden Valley Ref 9				
<a href="#">National Park</a>	No			
<a href="#">Area of Outstanding Natural Beauty</a>	No			
Other Historic Landscape Characterisation	Yes	All	Map 4	Park & Garden
Dudley Stamp Land Use Classification				Woodland, Grassland & Orchard
<b>People</b>				

<a href="#">CROW Access</a>	No			
<a href="#">Public Rights of Way (any)</a>	Yes	Cpt1 a	Map 3	PROW Footpath 368009 Cpt1 PROW Footpath 352001 PROW Footpath 368007
Other Access Provision	Yes			Whole site open see NT website Acorn Bank, including car parks and toilets.
Public Involvement	Yes			Volunteers in gardens, woodland and tree planting
Visitor Information	Yes			See NT website Acorn Bank, maps and signage on site.
Public Recreation Facilities	Yes			Walks through the woodlands, trails, hides, and other visitor interpretation.
Provision of Learning Opportunities	Yes			Schools are invited to events and Forest Schools have used the woodlands.
Anti-social Behaviour	No			
Other (please Specify):	Yes/No			
<b>Water</b>				
Watercourses	Yes	Cpt1 Cpt6	Map 3	Crowdundle Beck (SSSI/SAC) Birk Sike
Lakes	No			
Ponds	Yes	Cpt1 Cpt4	Map 3	Ponds in Quarry Wood cpt2 associated with gypsum mining. Pond in Acorn Bank Wood cpt1 originally associated with the wilderness garden.
Mill Leat	Yes	Cpt1	Map 4	The Mill Leat is the channel taking water from the Crowundle Beck to the Mill
Drinking Water Safeguard Zone	Yes	All		Solway Tweed SWSGZ3007 – Cumwinton Surface Water

## 4.3 Habitat Types

This section is to consider the habitat types within your woodland(s) that might impact/inform your management decisions. Larger non-wooded areas within your woodland should be classified according to broad habitat type where relevant this information should also help inform your management decisions. Woodlands should be designed to achieve a diverse structure of habitat, species and ages of trees, appropriate to the scale and context of the woodland.

<b>Feature</b>	<b>Within Woodland</b>	<b>Cpts</b>	<b>Map No</b>	<b>Notes</b>
<b>Woodland Habitat Types</b>				
Ancient Semi-Natural Woodland	Yes	Cpt1	Map 3	Not on the ancient woodland register but significant evidence of woodland above



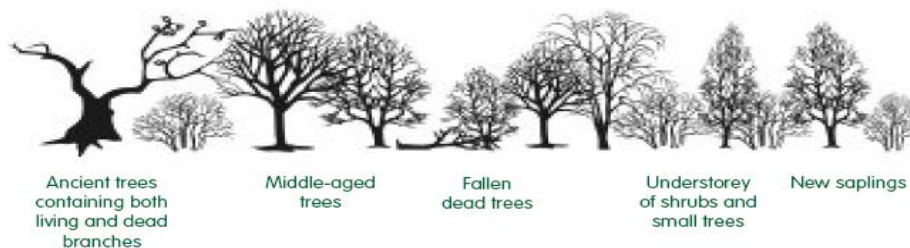
				Crowdundle Beck in 17 <sup>th</sup> century documents. The oak woodland Accornebanke was felled sometime before 1771, pg72 of Historic Landscape Survey Report 2014.
Planted Ancient Woodland Site (PAWS)	No			
Semi-natural features in PAWS	No			
Lowland beech and yew woodland	No			
Lowland mixed deciduous woodland	Yes	Cpt1 Cpt2 Cpt3	Map 3	Semi natural woodland
Upland mixed ash woods	No			
Upland Oakwood	No			
Wet woodland	Yes	Cpt1, 2 & 3	Map 3	Alder wet woodland along the Crowdundle Beck
Wood-pasture and parkland	Yes	N/A	Map 4, App 4	Parkland with scattered mature and veteran trees
Other (Orchard):	Yes		Map 3	Acorn Bank House apple orchards
<b>Non Woodland Habitat Types</b>				
Blanket bog	No			
Fenland	No			
Lowland calcareous grassland	No			
Lowland dry acid grassland	No			
Lowland heath land	No			
Lowland meadows	Yes		Map 3	There are mapped areas northwest and northeast of the wood and the Crowdundle Beck as well as adjacent to the Birk Sike.
Lowland raised bog	No			
Rush pasture	No			
Reed bed	No			
Wood pasture	No			
Upland hay meadows	No			
Upland heath land	No			
Unimproved grassland	No			
Peat lands	No			
Wetland habitats	No			
Other (please Specify):	No			

## 4.4 Structure

This section should provide a snapshot of the current structure of your woodland as a whole. A full inventory for your woodland(s) can be included in the separate Plan of Operations spreadsheet. Ensuring woodland has a varied structure in terms of age, species, origin and open space will provide a range of benefits for the biodiversity of the woodland and its resilience. The diagrams below show an example of both uneven and even aged woodland.

<b>Woodland Type (Broadleaf, Conifer, Coppice, Intimate Mix)</b>	<b>Percentage of Mgt Plan Area</b>	<b>Age Structure (even/uneven)</b>	<b>Notes (i.e. understory or natural regeneration present)</b>
Broadleaf 12.6ha	80%	Mixed age structure	See compartment descriptions Section 2
Intimate mix of conifer & broadleaf cpt1c 0.92ha & cpt4 2.11ha	20%	Mixed age structure	See compartment descriptions Section 2

Uneven-aged woodland – many wildlife habitats because of high diversity



Even-aged woodland – tidy but of low diversity



## Section 5: Woodland Protection

Woodlands in England face a range of threats; this section allows you to consider the potential threats that could be facing your woodland(s). Use the simple Risk Assessment process below to consider any potential threats to their woodland(s) and whether there is a need to take action to protect their woodlands.

**Note:** To add more tables, Copy the table and Paste below.

### 5.1 Risk Matrix

The matrix below provides a system for scoring risk. The matrix also indicates the advised level of action to take to help manage the threat.

<b>Impact</b>	High	Plan for Action	Action	Action
	Medium	Monitor	Plan for Action	Action
	Low	Monitor	Monitor	Plan for Action
		Low	Medium	High
<b>Likelihood of Presence</b>				

### 5.2 Plant Health

Threat (e.g. <a href="#">Ash Dieback</a> , <a href="#">Phytophthora</a> , Needle Blight etc)	Ash dieback ( <i>Hymenoscyphus fraxineus</i> ) <a href="https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/">https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/</a>
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Impact is significant within the ash across the Estate and crown loss is up to 70-80% in many trees. Dieback is prevalent in young ash. Ash is not the dominant species but has a percentage composition of approximately 15% cpt1a, 15% cpt1b, 10% cpt1c
Response (inc protection measures)	The priority is mitigating risk in ash trees with dieback in high-risk locations along paths, in high use visitor areas and adjacent to buildings. Manage decline in veteran ash across the Estate as identified in the Veteran Tree Survey 2022 Continue to follow NT policy to monitor and manage ash dieback. Use the response to ash dieback as an opportunity to develop structural diversity within the woodlands, promote understorey

	species consider underplanting and create standing and large woody debris on the ground.
Threat (e.g. Ash Dieback, <i>Phytophthora</i> , Needle Blight etc)	<p>Ramorum disease is not known to be currently present in larch or rhododendron on site (<i>Phytophthora ramorum</i>)  <a href="https://www.forestresearch.gov.uk/tools-and-resources/ftth/pest-and-disease-resources/ramorum-disease-phytophthora-ramorum/">https://www.forestresearch.gov.uk/tools-and-resources/ftth/pest-and-disease-resources/ramorum-disease-phytophthora-ramorum/</a> Larch trees are susceptible, along with sweet chestnut, beech, horse chestnut, Turkey oak and more can become infected as well as rhododendron, bay laurel, magnolia and bilberry to name some.</p> <p>Larch and rhododendron are host species. It is likely that in many cases it initially spread to larch trees from <i>Rhododendron ponticum</i>, an invasive, non-native species present in many British woodlands. <i>R. ponticum</i> is highly susceptible to ramorum disease, and infected rhododendron produce large numbers of the spores which spread infection. Infected larch trees, in turn, also produce very large numbers of spores – many more than rhododendron plants do – and moist air currents can spread these many miles from tall trees.</p>
Likelihood of presence (high/medium/low)	The UK Outbreak map on the Forest Research website shows the heavy distribution along the west of Britain. Temple Sowerby sits to the east edge of the current outbreak map in the lowest risk Zone 3. Many other NT properties within Cumbria have had SPHN's issued.
Impact (high/medium/low)	If it arrives to Acorn Bank it could inflict low to medium damage on the natural environment.
Response (inc protection measures)	<p>Suspected cases of ramorum disease on trees or other woodland plants must be reported to the forestry authorities. In England, please <a href="#">email the Forestry Commission</a> or call 0300 067 4000. Please attach at least one clear, well-lit photograph of the symptoms with your email report if possible.</p> <p>Continue control of rhododendron to eradication in cpt1a</p> <p>Continue to monitor trees and plants for signs and symptoms of the disease.</p>

### 5.3 Deer

Species - Likelihood of presence (high/medium/low)	Roe deer are present, numbers seen during survey work were 2. Minor impact of fraying seen in Newbarn Wood cpt5, along with deer rides in cpt5 and cpt4 where less visitor access occurs.
Impact (high/medium/low)	Impact is low and natural regeneration; ground flora and lack of deer signs is good
Response (inc protection measures)	Continue to monitor woodland condition looking for browsing and fraying impacts.

### 5.4 Grey Squirrels

Likelihood of presence (high/medium/low)	Known to be present and have been in high numbers. The numbers are well controlled by Penrith & District Red Squirrel Group but there is constant movement of greys into the area as this area is on the northeast boundary of the Whinfell management zone
Impact (high/medium/low)	High impact on red numbers, damage to trees historical and new is low.
Response (inc protection measures)	Continue to work with collaborative partners to control grey to enable the re-colonisation of the priority species, red squirrel. Continue to control greys to ensure impact on timber, particularly oak is minimised.

### 5.5 Livestock and Other Mammals

Threat (Sheep, Horse, Rabbit etc)	The pasture and parkland in-house is grazed by sheep & cattle. Adjacent fields to cpt2 outside the ownership boundary are grazed with cattle. Possible combination to the east of the property with sheep and cattle.
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Potential negative impact to natural regeneration, ground flora and riverbanks if stock enter woodlands.
Response (inc protection measures)	Maintain boundary fences to ensure livestock do not enter woodlands. During the survey the following boundaries were noted as breached and or in poorer condition (photos can be supplied as necessary)

	<p>Cpt1a southern boundary double post repairs and tree branch over near path to cpt4.</p> <p>Cpt1c north and south to be surveyed.</p> <p>Cpt2a northwest poor condition potential for breach by cattle.</p> <p>Cpt2a northeast breached but to the meadow – confirm if grazed.</p> <p>Cpt4 northern fence secure but old posts, east and south fence secure but poor condition, southwest fence secure but poor posts in places.</p> <p>Cpt5a to the south has been removed as the woodland is being extended south to meet cpt6. The eastern boundary is older but secure. Roadside is breached in places.</p> <p>Cpt6a to the river no longer required as woodland creation to north; can be removed. Southern boundary to be fully checked. Gate to road no longer working. Consider applying for CS Higher Tier capital grant to replace the poorer boundaries.</p>
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## 5.6 Water & Soil

Threat (Soil Erosion, Acidification of Water, Pollution incidents etc)	Diffuse pollution
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	High
Response (inc protection measures)	All woodland operations will be managed in accordance with UKFS best practice guidance appendix 9, page 145 and within the audited rules of the UK Woodland Assurance Scheme UKWAS of which the National Trust is a member.

## 5.7 Environmental

Threat (Pollution, Fire, Flood, Wind, Invasive Species, etc)	Invasive species within the woodlands currently being controlled include rhododendron and snowberry
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Likelihood of presence (high/medium/low)	Rhododendron and snowberry have a known small distribution
Impact (high/medium/low)	Low, contained
Response (inc protection measures)	<p>Both rhododendron and snowberry are part of a current control programme. Rhododendrons primary reason for control is <i>Phytophthora ramorum</i> set out in 5.2. It can also create heavy shade and alter soil pH altering the natural plant and soil habitat.</p> <p>Within Acorn Bank Woodland cpt1 other potential garden non-natives to be identified, mapped and monitored to see if they are <u>likely</u> to be invasive and if any control is required. The decisions to undertake control will be balanced against the aims and objectives for the designed landscape and the wilderness garden and the Gov.UK guidance on invasive non native plant species <a href="https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales">https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales</a></p>

## 5.8 Social

Threat (Rights of Way, CROW, permissive access, events sporting rights, Anti-social Behaviour etc)	The public right of way crossing the Estate is part of the overall network of paths that all visitors can access. No anti-social behaviour.
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	Low
Response (inc protection measures)	Maintain good access and community engagement.

## 5.9 Economic

Threat (Timber forecasting, markets, products, operational costs etc)	Timber harvesting and haulage is significantly constrained by site features including Crowdundle Beck SSSI/SAC, historical features, visitor access and mined ground.
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Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Complex operations will require dedicated solutions and likely higher cost operations.
Response (inc protection measures)	<p>Ensure all operations are planned with site constraints and features protected and the overall impacts and costs are mitigated and budgeted.</p> <p>Utilise Operational Site Assessments or similar to plan works and ensure all contractors provide detailed RAMS.</p>

## 5.10 Climate Change Resilience

Threat (Uniform Structure, Provenance, Lack of Diversity etc)	<p>Changes in climate temperature, moisture, wind exposure &amp; rainfall see Forest Research information at <a href="https://www.forestresearch.gov.uk/research/climate-change-impacts/climate-change-impacts-and-adaptation-in-englands-woodlands/adapting-englands-woodland-to-climate-change-main-issues/">https://www.forestresearch.gov.uk/research/climate-change-impacts/climate-change-impacts-and-adaptation-in-englands-woodlands/adapting-englands-woodland-to-climate-change-main-issues/</a></p>
Likelihood of presence (high/medium/low)	
Impact (high/medium/low)	<p>Current projections suggest that areas of south, central and eastern England will have drier and warmer summers, resulting in increasingly severe soil moisture deficits which will reduce tree growth – particularly on shallow, south facing slopes, and sandy-textured, freely draining soils.</p> <p>Changes in the seasonality of rainfall have occurred gradually over the past century, and this trend is projected to continue and to intensify in the future. The resulting wetter autumn and winter periods will cause greater water table fluctuations, limit rooting depth, and reduce tree stability on exposed sites.</p>



	<p>Changes in the wind climate are highly uncertain but, with reduced anchorage on wet sites, the risk of windthrow will increase.</p> <p>The incidence and severity of tree disease and pest outbreaks will increase. A warmer climate and, particularly, warmer winters will allow tree pests and pathogens to extend their range.</p>
Response (inc protection measures)	<p>A key concept in managing risk is diversification: from broadening the choice of genetic material and mixing tree species in different ways, with varying management systems, age range and the timing of operations:</p> <ul style="list-style-type: none"> <li>• Adaption of uniform stands to predominantly mixed broadleaf woodlands including trees of complex age groups, shrubs and open space</li> <li>• Increase tree species diversity in both tree, shrub, and provenance.</li> <li>• Early thinning continued thinning and self-thinning mixtures will help improve woodland stability and promotion of understorey species with age range complexity.</li> <li>• Monitor sites for increased pests &amp; pathogen activity.</li> <li>• Monitor sites for tree stress to drought/water/wind.</li> </ul> <p>Follow NT Woodland Management Policy and adaptations across the whole organisation through knowledge sharing.</p>

## Section 6: Management Strategy

This section requires a statement of intent, setting out how you intend to achieve your management objectives and manage important features identified within the previous sections of the plan. A detailed work programme by sub-compartment can be added to the Plan of Operations.

Management Objective/Feature	Management Intention
<p>Targeted thinning and felling interventions to maintain tree species structural diversity and develop the full woodland ecosystem. Utilise natural processes such as decay to develop niche habitats within the woodland ecosystem protecting the woodland priority habitats and County Wildlife site.</p>	<p>When executing the planned thinning and felling works use the target felling principles to develop stand diversity promoting understorey species and natural regeneration of saplings.</p> <p>Summary of proposed work is listed subject to feasibility analysis and operational site assessment for key constraints due to visitor access, mining landform and designed heritage. Where safe to do so standing and fallen deadwood can be created.</p> <ul style="list-style-type: none"> <li>• Cpt1a regeneration felling of ash dieback (priority work). Followed by licenced restocking.</li> <li>• Cpt1a thinning of younger oak to promote the quality stems.</li> <li>• Cpt1a intermittent target thinning of canopy species for own use/timber sale and demonstration events.</li> <li>• Cpt1b regeneration felling of ash dieback (priority work). Followed by licenced restocking.</li> <li>• Cpt1b thinning licence sought for single tree selection for tree risk management and gradual structural development of the woodland.</li> <li>• Cpt1b Fell coppice for restoration of alder coppice in the riparian zone</li> <li>• Cpt1c thinning to protect veteran trees, promote the historical features and promote crown development in all species and conifer species particularly for red squirrel.</li> <li>• Cpt2a Licence sought for crown and low thin subject to review of extraction. Can be used for targeted single tree selection for tree risk management and creation of standing and fallen deadwood.</li> <li>• Cpt3a Thinning licence sought for single tree selection for structural development of understorey into crown and tree risk management as required.</li> <li>• Cpt3b Tree risk management is the highest priority along the road; thinning licence is sought for this.</li> <li>• Cpt4a Regeneration felling to reduce dominance of spruce and larch to the east of the wood retaining some conifers to develop further for red squirrel habitat. Thin the rest of the wood to best stem and promote understorey trees. Safe working methodology is vital as the terrain a constraint.</li> <li>• Cpt5a Undertake a thin to best stem, retaining to stability, crown development and to promote the understorey. Safe working methodology is vital as the terrain a constraint.</li> <li>• Cpt6a Thinning licence for single tree selection for targeted oak harvesting for use and demonstration.</li> </ul> <p><b>See Section 2 Compartment Inventory &amp; Felling Licence application map 6</b></p>

	<p><b>Target Felling Principles</b></p> <p>During thinning and regeneration felling works review the target felling principles for each operation by using the following removal retention criteria to achieve the desired management objective:</p> <ol style="list-style-type: none"> <li>1. Remove poorer quality trees to improve the woodland characteristics.</li> <li>2. Remove trees to promote understorey developments into the canopy, potentially including temporary glades for oak regeneration and transplanting.</li> <li>3. Remove/ringbark declining stems creating standing and fallen dead wood as required.</li> <li>4. Single selection of harvestable target diameter timber for own use, sales and demonstration</li> <li>5. Remove/retain chosen trees for landscape/views and cultural criteria.</li> <li>6. Retain veteran and notable trees for their biodiversity and cultural characteristics.</li> <li>7. Develop and retain tree species for red squirrels to improve their crown for coning; see recommendations in appendix 6. Balance with overall habitat aims.</li> <li>8. Control <i>less desirable</i> 'non-native' trees/shrubs where the species is either invasive or offers less biodiversity/cultural or timber benefit than other species to the habitat.</li> </ol> <p>Other structural diversity development activities to be employed:</p> <ol style="list-style-type: none"> <li>1. Introduction of key species during restocking.</li> <li>2. Transplanting of oak seedlings if open glade opportunities arise after felling works.</li> <li>3. Control of browsing mammals (roe deer and grey squirrel).</li> <li>4. Creation and retention of standing and fallen large woody debris where safe to do so.</li> <li>5. Boundary management to prevent uncontrolled grazing; see list in section 5.5.</li> </ol> <p>Potential to register the main Acorn Bank woodland (cpt1a) as ancient woodland on Natural England's Ancient Woodland Register using the Historic Landscape Report as the evidence.</p> <p>Potential to register Newbarn Wood on the Priority Habitat Inventory as deciduous woodland.</p> <p>Liaise with Cumbria Wildlife Trust on the County Wildlife Site continued designation and survey.</p>
<p>Management of ash dieback to ensure the impacts on tree species diversity is monitored and the risks to all visitors and staff is mitigated.</p>	<p>Priority felling work for ash trees with dieback in higher risk areas can be worked in with ash felling to promote the overall stand objectives. Sites for attention where tree risk management is a priority include:</p> <ul style="list-style-type: none"> <li>• Cpt 1a Acorn Bank Wood</li> <li>• Cpt 3b Riverbank Roadside</li> <li>• Cpt5a Roadside to Newbarn Wood</li> </ul>

	<p>Follow NT Policy framework on Tree Risk Management and management of ash dieback. Seek opportunities to create standing and fallen large woody debris.</p>
<p>Management and protection of veteran the habitats they provide as well as future recruitment of potential veteran and notable trees.</p>	<p>During all operations ensure staff and operators are aware of the location of all veteran trees within woodland and highlighted in the 2022 report. Tagging the trees can be considered to aid this and using temporary tape during felling operations. All the trees within the woodlands are listed in the compartment inventory spreadsheet Section 2 and the veteran tree data spreadsheet appendix 4b.</p> <p>Manage negative impacts to the veteran and notable trees to promote longevity within managed decline, for example managed crown reduction in ash veterans where safe to do so; review storm impacts as they occur.</p> <p>Priority: change the garden composting arrangements which are impacting negatively on the root system of 3 veteran oaks AB57, AB58, AB59). Remove activities off all root protection zones.</p> <p>Monitor and manage compaction around the base of significant trees along well used footpaths, bench locations and picnic area. AB69 Oak in cpt1a was highlighted in the Veteran Tree Survey, a simple solution could be using deadwood strategically to reduce compaction at the tree base.</p>
<p>Control of non-native invasive species within the woodlands including rhododendron and snowberry as well as ensuring invasives from the garden species is monitored and controlled to meet overall habitat tolerance.</p>	<p>Continue to control rhododendron to eradicate, locations cpt1a and cpt1c; estimate of areas 0.03ha and 0.01ha shown as Rh on map 7.</p> <p>Continue to control snowberry to eradicate, estimate of area 0.01ha, location cpt1a and cpt1c.</p> <p>Review control methodology against NT chemical use policy (appendix 8) and location of control. Pesticides should be used in Trust certified woodlands as a last resort. All other options must be considered before the decision to use pesticides is made.</p> <p>Monitor for other invasive non-natives and control once annually. Key monitoring points suggested are:</p> <ul style="list-style-type: none"> <li>• adjacent to the wilderness garden where garden plants may encroach into the woodlands and</li> <li>• water courses where Japanese knotweed and Himalayan balsam can occur.</li> </ul> <p>See section 5.8 detail: Within Acorn Bank Woodland cpt1 other potential garden non-natives to be identified, mapped and monitored to see if they are <u>likely</u> to be invasive and if any control is required. The decisions to undertake control will be balanced against the aims and objectives for the designed landscape and the wilderness garden and the Gov.UK guidance on invasive non-native plant species <a href="https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales">https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales</a></p>

	<p>Moving the composting area will help alleviate potential spread of invasives into the woodland.</p>
<p>Management of priority species across the woodlands and Estate habitats including red squirrels, woodland birds, flora and fauna including those associated with the Crowdundle Beck SSSI river system.</p>	<p>Continue to work with Penrith &amp; District Red Squirrel group on red monitoring (on site population of 30) and control of greys. Develop good coning tree species and drey habitat for the reds, reviewing site suitable species, species of benefit to the reds (see appendix 6) and within the overall parameters of the management of the woodland habitats. Cpt1c and cpt4 has larch, Norway spruce and Scots pine that can be thinned to develop the tree crowns as well as reduce the density in cpt4 to develop the habitat understorey. Norway spruce are a particularly good tree for the reds, are coning well in cpt4 and are site suitable across the property potentially as feature trees in cpt2, cpt4 and cpt5.</p> <p>Continue to work with Natural England to maintain favourable condition of the Crowdundle Beck SSSI; monitoring key habitat assemblages and/or species as necessary.</p> <p>All works adjacent to the Crowdundle Beck require an agreed Supplementary Notice of Operations with Natural England.</p> <p>Work to manage the bank erosion in cpt3a at the pinch point near the entrance driveway needs agreement with Natural England and potentially collaboration with Eden Rivers trust to develop potential soft (natural) solutions to mitigate further sediment loss and encroachment to the driveway.</p> <p>Continue to review the Estate priority species and habitats as undertaken in the 2014 conservation evaluation, setting up monitoring practices as required.</p>
<p>Management and protection of historic features and cultural interest within and adjacent to woodland, mitigating potential negative impacts on the woodlands and associated habitats whilst developing facilities to inspire visitor interest.</p>	<p>Identify and map key non-native shrub and plant species in the woodland understorey present as part of the historical landscape wilderness garden; monitor if any risks of invasive spread and identify if any need to be controlled. Monitor as necessary.</p> <p>Work with Natural England, Environment Agency, Eden Rivers Trust, Acorn Bank Mill and all stakeholders to manage the Historic Mill Leet and weir as well as mitigate river erosion of the bank near the main carriageway. This work planning is part of the Riverlands Project.</p> <p>Visitor interpretation at drift mine in cpt1c; monitor tree risk to the feature and managed space.</p> <p>Brick building in cpt1c monitor for any physical decay and risk of damage from adjacent trees.</p> <p>Gypsum mines and subsequent ponds within Quarry Wood on the Gypsum trail. Improve safety features deterring public, children and loose dogs from entering the woodland further than the hide.</p>

	<p>Drift mines in Newbarn Wood cpt5a; safety signs on entrance regarding drift mines.</p> <p>Location of listed buildings and adjacency to trees; survey for tree risk management.</p>
<p>Extend and connect the woodlands through woodland creation, management of parkland and field trees and hedgerows.</p>	<p>Review the woodland boundary of cpt1a and confirm if the fenced off area adjacent to the car park is part of the existing woodland and needs to be fenced back in.</p> <p>Continue work on the woodland extension of Newbarn Wood cpt5b started in 2023. Consider species density and composition to aim to meet good establishment with the potential to develop a diverse woodland ecosystem.</p> <p>Potential to review the land use to the northeast of Crowdundle Beck for suitable woodland creation. This area has some tree cover. Identify location of the northern boundary and create boundary markers so that ownership land is identified.</p>
<p>Develop the key opportunities for visitor and community access and education within the woodlands and the wider property; providing good woodland access facilities and volunteer programmes.</p>	<p>Maintain the current network of paths, benches, picnic points, hide and interpretive features.</p> <p>Maintain and improve the use of natural fencing/deadwood to guide visitors away from sensitive features such as veteran trees and from potential dangers adjacent to the hide in Quarry Wood.</p> <p>Provide safety buoyancy aid adjacent to the wet gypsum mines in cpt4.</p> <p>Maintain and review visitor engagement opportunities within the overall site constraints.</p>
<p>Ensure the health &amp; safety and environmental risks of all proposed works is assessed at key stages with suitable mitigation measures employed.</p>	<p>Undertake an Operational Site Assessment or similar, to determine sensitive features and constraints prior to operations such as protected species, historic designations, habitat designations, under and overhead services, work methodology and mitigation if potential problems such as sediment loss into water courses, management of fuel.</p> <p>Undertake and request from contractors' relevant RAMS (Risk assessment &amp; methodology), certification and PL.</p> <p>Understand codes of practice such as FISA guidance <a href="https://ukfisa.com/Safety/Safety-Guides">https://ukfisa.com/Safety/Safety-Guides</a></p>
<p>The management of the woodlands is expected to conform to the requirements of the UK Forestry Standard and the UK Woodland Assurance Scheme (UKWAS)</p>	<p>Act on relevant NT policy procedures for woodland and Estate management such as ash dieback monitoring and the planning and specification of works.</p> <p>Work to ensure UKWAS compliance and act on UKWAS corrective action requirements.</p>

	<p>Keep copies of work records, timber sales, grant evidence and compliance information</p> <p>Respond to Statutory Plant Health Notices.</p> <p>Understand necessary legislation for Felling Licence compliance, Tree Preservation Orders and Statutory designations.</p>

## Section 7: Stakeholder Engagement

There can be a requirement on both the FC and the owner to undertake consultation/engagement. Please refer to [Operations Note 35](#) for further information. Use this section to identify people or organisations with an interest in your woodland and also to record any engagement that you have undertaken, relative to activities identified within the plan.

Work Proposal	Individual/ Organisation	Date Contacted	Date feedback received	Response	Action
Review potential presence of Tree Preservation Orders	Westmorland & Furness Council planningpolicy2@westmorlandandfurness.gov.uk	25/05/2023	26/05/2023	Confirmed no TPO's. Provided general information County Wildlife Site designation	No further action
County Wildlife Site map and citation request	Cumbria Biodiversity Centre	11/06/2023	12/06/2023	Received CWS map and citation	Citation and map in appendix 7
Woodland Management Plan draft	Internal consultation with NT	19/06/2023	30/06/2023 04/10/2023	Updated the WMP and contacted all respondents for further information.	Further updates undertaken 04/10/2023 prior to public consultation.
Woodland Management Plan	Temple Sowerby Parish Council <a href="mailto:clerk@templesowerbyvillage.co.uk">clerk@templesowerbyvillage.co.uk</a>				
Woodland Management Plan	Newbiggin Parish Council jamescherrytree@gmail.com				
All works associated with SSSI Crowdundle Beck	Natural England Caroline Clay				



	ProtectedSites@naturalengland.org.uk				
Register cpt1a Acorn Bank woodland on the Ancient Woodland Register	Natural England consultation at planned action point				
Woodland Management Plan in reference to the Country Wildlife Site designation	Cumbria Wildlife Trust				
All works associated with SSSI Crowdundle Beck	Eden Rivers Trust Andy Dyer, Lev Dahl office@edenrt.org				
Consultation on Woodland Management Plan	Acorn Bank Mill Trust ab.wt@outlook.com				
Consultation on Woodland Management Plan and Listed Buildings	Historic England <a href="mailto:customers@HistoricEngland.org.uk">customers@HistoricEngland.org.uk</a>				
Consultation with General Public on Woodland Management Plan will be undertaken via the website Forest Plans <a href="https://forestplans.co.uk/">https://forestplans.co.uk/</a> for a minimum of 30 days and feedback reviewed	General public via onsite posters with website details and QR code				

## Section 8: Monitoring

Indicators of progress/success should be defined for each management objective and then checked at regular intervals. Other management activities could also be considered within this monitoring section. The data collected will help to evaluate progress.

Monitoring Action Number	Management Objective/Activities	Indicator of Progress/Success	Method of Assessment	Frequency of Assessment	Responsibility	Assessment Results
1.0	Tree Risk Management (TRM) surveys and priority work which includes <ul style="list-style-type: none"> <li>Acorn Bank Wood cpt1a, 1c</li> <li>Riverbank Roadside cpt3b</li> <li>Newbarn Wood cpt5</li> </ul>	TRM surveys are undertaken within NT monitoring policy guidelines and annual for ash trees in high to medium risk situations.  TRM high priority work recommendations are undertaken in a timely manner.  Opportunities taken to create standing or fallen large woody debris.	Survey completion date  Work programme tracking	Every 6 months	Sam Stalker Lead Ranger	Programme priority work. Date additional surveys required and/or change in survey frequency
2.0	Prioritise first 5-year work programme for Acorn Bank: <ul style="list-style-type: none"> <li>Quarry Wood cpt4, thinning &amp; felling.</li> <li>Newbarn Wood cpt5a thinning.</li> </ul>	Work planning, specifications and budgeting undertaken. Grant applications / private financing sought for where possible.  Contractors or in-house team programmed and pre-commencement paperwork	Work programme tracking	Varied depending on tasks.	Sam Stalker Lead Ranger	Agree budgets and any financing required.  Re-program any changes/delays

	<ul style="list-style-type: none"> <li>Acorn Bank Plantation cpt1c thinning.</li> </ul>	<p>complete and recorded for UKWAS compliance.</p> <p>Contracts managed by appointed NT or Agent with regular reporting and inspection structure agreed to work completion.</p> <p>Opportunities taken to create standing or fallen large woody debris.</p>				
3.0	Restocking of felled areas as per agreed Felling Licences & NT Policy	<p>Tree planting plan is executed within 2 years of the felling operation.</p> <p>Any species changes agreed with Forestry Commission.</p> <p>Trees weeded and losses replaced (beaten up) to achieve successfully established by year 5-10.</p> <p>All certification and herbicide record sheets are retained for UKWAS compliance.</p>	<p>Maintenance reports</p> <p>Beat up assessment</p>	Every 6 months	Sam Stalker Lead Ranger	Ensure required trees to replace losses are ordered
4.0	Woodland creation establishment cpt5b	All trees are maintained annually weeding and replacing losses.	Maintenance reports	Every 6 months	Sam Stalker Lead Ranger	Ensure required trees to replace losses are ordered

		All certification and herbicide record sheets are retained for UKWAS compliance.	Beat up assessment			
5.0	Control and monitoring of invasive species: <ul style="list-style-type: none"> <li>• Rhododendron cpt1a and 1c</li> <li>• Snowberry cpt1a and 1c</li> </ul>	Target areas are mapped. Work is programmed annually. All paperwork required for herbicide treatment is in place and retained.  Monitor locations annually and extent of populations (photos/map hatching)	Assess report on annually work for successful control.	Annually	Sam Stalker Lead Ranger	Ensure required works are budgeted annually until control is complete.
6.0	Monitoring survey for other invasive species	Undertake a survey of potential invasive species around garden composting area and in the 'wilderness garden.'  Produce programme of assessment and control necessary.	Survey & report	Once	Sam Stalker Lead Ranger	Add any additional control work to invasive control and monitoring programme.
7.0	Relocation of the garden composting area to protect the woodland soils, veteran oaks and prevent garden species colonising the woodland.	Agree a suitable relocation point for the garden composting and management of waste.	Removal of all composting features from Acorn Bank woodland.	Once	Sam Stalker Lead Ranger	Review funding support and property agreement for new location.

8.0	Priority habitat management of the SSSI Crowdundle Beck to support Natural England's work to reach favourable condition for the SSSI unit.	Agree a management prescription with Natural England that can be undertaken on the land owned and managed by National Trust.	Agreed management prescriptions	Once	Sam Stalker Lead Ranger	Review funding of all works agreed.
9.0	Management of bank erosion, sediment loss and threat to carriageway heritage feature cpt3a	Agree a management prescription and working methodology with all stakeholders through the Riverlands Project that can be undertaken to mitigate the bank erosion and sediment loss	Agreed management prescriptions	Once	Sam Stalker Lead Ranger	Review funding of all works agreed.
10.0	Priority species management red squirrel with Penrith & District Red Squirrel Group (P&DRSG)	Agree annual management works with P&DRSG including: Control of greys  Monitoring of reds  Monitoring of grey impacts on woodland habitats	Population results and changes	6 monthly	Sam Stalker Lead Ranger	Ensure all funding in place to support tasks.  Ensure all public facing promotion is undertaken to involve visitors and the public.
11.0	Veteran tree survey following up on report recommendations.	Parkland protection and planting plan to be agreed.  Regular Veteran Tree Survey.	VT survey once every 10 years.	Every 10 years.	Sam Stalker Lead Ranger	Review funding of all works agreed.

	Relocation of garden composting monitoring action number 6.0.					
12.0	Upgrade safety features at Quarry Wood and Newbarn Wood for the mitigation of risk to users.	Agree safety features required for example, Natural fencing barrier in Quarry Wood, safety signage in wood and on visitor map.	Risks mitigated and monitored	Annual	Sam Stalker Lead Ranger	Review funding of all works agreed.
13.0	Browsing control of natural regeneration and ground flora by deer currently has low impact.	Continue to monitor woodland understorey and ground flora for browsing damage impacts.  Manage restock areas to minimise impacts of browsing damage to planted trees and natural regeneration.	Woodland condition assessments and beat up reports from actions 3 and 4 above.  Obtain cull figures from deer controller.	Annual	Sam Stalker Lead Ranger	Review cull targets as necessary.
14.0	Monitor woodland condition to achieve the aims of woodland structural diversity and composition.	Undertake Woodland Condition Assessment including: <ul style="list-style-type: none"> <li>• Tree canopy composition</li> <li>• Tree understorey composition</li> <li>• Natural regeneration species and abundance</li> <li>• Ground flora diversity</li> </ul>	General woodland condition surveys using DAFOR abundance survey techniques.	Survey once every 10 years in line with woodland management planning	Sam Stalker Lead Ranger	Assess problems, changes and recommendation from woodland condition survey report.

		<ul style="list-style-type: none"> <li>• Ancient tree condition (monitoring action 10)</li> <li>• Deadwood assessment</li> </ul>				

## UK Forestry Standard woodland plan assessment

For FC office use and approval only:

UKFS management plan criteria	Minimum approval requirements	Achieved	Review notes
<p><b>Plan Objectives:</b> Forest management plans should state the objectives of management and set out how an appropriate balance between social, economic, environmental objectives will be achieved.</p>	<ul style="list-style-type: none"> <li>Management plan objectives are stated.</li> <li>Consideration is given to environmental, economic and social objectives relevant to the vision for the woodland.</li> </ul>	Yes/No	
<p><b>Forest context and important features in management strategy:</b> Forest management plans should address the forest context and the forest potential and demonstrate how the relevant interests and issues have been considered and addressed.</p>	<p>Management intentions communicated in <b>Sect. 6</b> of the management plan are in line with stated objective(s) in <b>Sect. 2</b>.</p> <p>Management intentions should take account of:</p> <ul style="list-style-type: none"> <li>Relevant features and issues identified in the woodland survey (<b>Sect. 4</b>).</li> <li>Any potential threats to and opportunities for the woodland, as identified under woodland protection (<b>Sect. 5</b>).</li> <li>Relevant comments received from stakeholder engagement are documented in <b>Sect. 7</b>.</li> </ul>	Yes/No	
<p><b>Identification of designations within and surrounding the woodland site:</b> For designated areas, e.g. National Parks or SSSI, particular account is taken of landscape and other sensitivities in the design of forests and forest infrastructure.</p>	<ul style="list-style-type: none"> <li>Survey information (<b>Sect. 4</b>) identifies any designations that impact on woodland management.</li> <li>Management intentions (<b>Sect. 6</b>) have taken account of any designations.</li> </ul>	Yes/No	
<p><b>Felling and restocking to improve forest structure and diversity:</b></p>	<ul style="list-style-type: none"> <li>Felling and restocking proposals are consistent with UKFS design principles (for example scale and adjacency).</li> </ul>	Yes/No	



<p>When planning felling and restocking, the design of existing forests should be re-assessed and any necessary changes made to meet UKFS requirements.</p> <p>Forests should be designed to achieve a diverse structure of habitat, species and age range of trees, appropriate to the scale and context.</p> <p>Forests characterised by a lack of diversity, due to extensive areas of even-aged trees, should be progressively restructured to achieve age class range.</p>	<ul style="list-style-type: none"> <li>• Current diversity (structure, species, age structure) of the woodland has been identified through the survey (<b>Sect. 4</b>).</li> <li>• Management intentions aim to improve / maintain current diversity (structure, species, and ages of trees).</li> </ul>		
<p><b>Consultation:</b></p> <p>Consultation on forest management plans and proposals should be carried out according to forestry authority procedures and, where required, the Environmental Impact Assessment (Forestry) Regulations.</p>	<ul style="list-style-type: none"> <li>• Stakeholder consultation is in line with current FC guidance, and recorded in <b>Sect. 7</b>. The minimum requirement is for statutory consultation to take place, and this will be carried out by the Forestry Commission.</li> <li>• Plan authors undertake stakeholder engagement (ref FC Ops Note 35) relevant to the context and setting of the woodland.</li> </ul>	<b>Yes/No</b>	
<p><b>Plan update and review:</b></p> <p>Management of the forest should conform to the plan, and the plan should be updated to ensure it is current and relevant.</p>	<ul style="list-style-type: none"> <li>• A 5 year review period is stated on the 1<sup>st</sup> page of the plan</li> <li>• <b>Sect. 8</b> is completed with 1 indicator of success identified per management objective</li> </ul>	<b>Yes/No</b>	

<p><b>Approved in Principle</b></p> <p><i>This means the FC is happy with your plan; it meets UKFS requirements.</i></p> <p>a) You can use it to support a CS-HT or other grant application.</p> <p><b>b) You do not yet have a licence to undertake any tree felling in the plan.</b></p>	<p><b>Name (WO or FM):</b></p>	<p><b>Date:</b></p>
<p><b>Approved</b></p>	<p><b>Name (AO, WO or FM):</b></p>	<p><b>Date:</b></p>

*This means FC is happy with your plan; it meets UKFS requirements, and we have also approved a felling licence for any tree felling in the plan (where required).*