Loughborough University

Woodland Management Plan 2023-2033

Written by Rich Fenn Griffin (Assistant Gardens Manager)

Contents

Section 1: Property Details

Woodland Property Names	Burleigh Wood	Grid reference	SK 50761 17677
	Holywell Wood		SK 50706 18262
	Horseshoe Wood		SK 50600 17921
	Carbon Offset Wood		SK 51055 17870
Local Authority	Charnwood Borough Council	County	Leicestershire
Owner	Loughborough University	Woodland Manager	Kaz Setchell
Email	K.D.Setchell@lboro.ac.uk	Phone number	07971 636075
Management Plan Area (ha)	Burleigh Wood (9.7ha); Holywell Wood (6.6ha); Horseshoe Wood (1.3ha); Carbon Offset Wood (0.9ha)		
Has a Plan of Operations (PO) been included with this WMP? Yes			
List of maps associated with this WMP – Map 1, 2 and 3			
Do you intend to use the information within this WMP and associated PO to apply for the following? No			

Section 2: Vision and objectives

2.1 Vision

The following vision states the overall direction of management for the woodlands and how we envisage it will be in the future, for both the life of this plan and beyond.

To maintain and enhance the biodiversity value of all the woodlands, with controlled public access.

Both Burleigh and Holywell Woods will continue to be managed as Ancient Semi-Natural Woodlands (ASNW) preserving a continuous canopy layer (with the exception of the ride through Holywell Wood); maintaining well defined understorey and field layers; creating and sustaining an abundant deadwood resource in a number of states; retaining trees of interest; and conserving the current path networks. The woodlands will be kept free from invasive or potentially invasive plant species.

The adjoining woodlands will be managed as complimentary habitat to the ASNW with the Horseshoe Wood providing connectivity between Holywell and Burleigh Woods.

Local residents will continue to enjoy the amenity of walking through Burleigh Woods, and Loughborough University students and staff will continue to have access to Holywell Wood.

2.2. Management Objectives

The following objectives state how sustainable forest management will be achieved. Management objectives are specific, quantifiable statements that represent what needs to happen to achieve the long term vision, they encompass environmental , economic and social considerations within the scope of the plan.

No.	Objective
1	To maintain and enhance the current biodiversity value of the woodland.
2	To maintain and develop Holywell Wood as a research resource with minimal or no adverse impact.
3	To continue to encourage usage of Burleigh Wood and the adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain restricted access to Holywell Wood.
4	To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.
5	To monitor and record woodland management to assess the effectiveness of management against objectives, and to enable rapid response to unexpected outcomes arising from management.

Section 3: Plan Review – Achievements

The following table lists the achievements made against objectives in the previous management plans. It will also be used at the 5-year review of this plan and is informed by monitoring undertaken against the current objectives.

No.	Objective
1	To maintain and enhance the current biodiversity value of the woodland.
• Ad hoc coppicing took place in both Burleigh and Holywell Wood. • Invasive *Rhododendron ponticum* removal. None in any woodlands now. • Extensive sycamore *Acer pseudoplantanus* control with saplings being removed. Species not known in woods currently. • Control of Himalayan balsam *Impatiens glandulifera.* Small number of plants recurring each year which are effectively controlled by uprooting. • Deadwood resource is increasing in all woods except the Horseshoe Wood. However, there are areas in both woods almost devoid of deadwood. • Dead hedges has been created in a number of places in Burleigh and Holywell Wood to control access and provide invertebrate habitat. • Habitat piles (logs and twigs) have been created in Burleigh, Holywell and Carbon Offset Woods. • Felling has taken place to widen the centre of the ride in Holywell Wood. The vegetation is cut cyclically (in thirds) along the ride. • Planting oak, cherry, hazel, field maple and crab apple. 50 saplings were divided between Holywell and Burleigh Wood with tree guards and stakes. • Ash regeneration noted in Holywell Wood. No oak regeneration has been noted in either ASNW. • Veteranisation of larch tree in Holywell Wood. • Number of bird boxes reduced in Holywell Wood on advice of RSPB regarding managing competition with Marsh tits *Poecile palustris*. • Surveys have been undertaken with regard to fungi, birds, bats and invertebrates.	
2	To maintain and develop Holywell Wood as a research resource with minimal or no adverse impact.
• The active use of Holywell Wood as a research plot for studying forest carbon cycling has finished. • Conversations with Dr Helen Glanville have been undertaken about using the woodland to support teaching and research opportunities. • Holywell Wood Forest School now supports two nurseries that share the facility during the week. A dead hedge has been created to help manage children near a deep section of the stream and to prevent access under a hung up tree. Wooden stepping stones have been installed to provide the students with 'challenge'. There are plans to install a balance beam. • The footprint of the forest school has not increased.	
3	To continue to encourage usage of Burleigh Wood and the adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain restricted access to Holywell Wood.
• Boundary fences and internal infrastructure, e.g. boardwalks and bridges, are maintained annually with necessary repairs and replacements undertaken. • Access is maintained 364 days a year to Burleigh Wood for walkers and well-behaved dogs. To increase interest in the Burleigh Wood two annual events happen – Christmas in the Wood and the Bluebell Walk. This year a student led a Dawn Chorus in the wood as well. All events were well attended. • New signs have been purchased to replace the existing interpretation boards in both Holywell and Burleigh Wood. In addition, 'Keep out in high winds' signs have been purchased and put up at the entrances to both ASNW. • Boundary work has taken place in both ASNW. This has included dead-hedging, creating brash piles to block entries and hurdle fencing. These were made from coppiced hazel. • The fencing surrounding the bluebell area has been extended to limit access in an attempt to discourage 'day trippers who take selfies in the middle of the area'.	

• Work on blocking unofficial internal paths within Burleigh Wood has been undertaken.	
4	To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.
• All coppicing work in Burleigh Wood is compliant with the TPO arrangements. Felling work (for H&S) requirements obtained the necessary TPO exemptions. All felling and coppicing work in the woodlands was undertaken in autumn/winter so as not to impact breeding bird season. Felling of trees with notable cavities was not undertaken. • Felling work for ride widening in Holywell Wood was compliant with Forestry Commission guidance and timber volumes were below felling license requirements. • No work took place near any active badger setts.	
5	To monitor and record woodland management to assess the effectiveness of management against objectives, and to enable rapid response to unexpected outcomes arising from management.
• Some records of work relevant to the management plan have been made but these lack details, specificity and location within the woods. • A bird survey was undertaken by Curtis Burbidge (LU student) who identified 15 species calling/sighted in Holywell Wood and 17 in Burleigh Wood. • A fungi survey of Holywell Wood was undertaken on 20th October 2023 and identified 38 different species including the nationally rare Coral Tooth *Hericium coralloides*. • A woodcock survey was undertaken by Nigel Judson in Holywell Wood but found no birds. • A bat survey was undertaken in the ride of Holywell Wood (July 2023) and confirmed 9 species with potentially 3 more (sent away for analysis).Invertebrate surveys (beetle) have been undertaken by Graham and Anona Finch in Holywell Wood. They reported 3 scarce beetles (*Odeles marginata* - Only 9 previous VC55 records, *Meligethes morosus* - Only 7 previous VC55 records, *Phyllotreta nemorum* - 16 previous VC55 records) for Leicestershire. • A butterfly transect (in collaboration withy Butterfly Conservation) has been set up on Holywell campus part of which runs through the woodland. The scheme has been running for 2 years and has reported 15 species of butterfly using the woodland.	

Section 4: Woodland Survey

The following section encompasses the detailed woodland survey information including any statutory constraints and woodland resource characteristics.

4.1 Description of the woodlands in the landscape

Burleigh Wood is located on the west side of Loughborough approximately 3 km from the centre and 0.25 km from Nanpantan. It is owned and managed by Loughborough University. The nearest public roads are Compton Close and Montague Drive. There is no official access from either of these to the woodland. However, unofficial pedestrian access exists from the end of Compton Close (and has done so for many years). Official pedestrian access is either from Kirkstone Drive or Nicolson Road.

Burleigh Wood is classified as a ASNW and is recorded on the Leicestershire Ancient Woodland Inventory. The woodland has a Tree Protection Order (TPO). Whilst the majority of the woodland's history certainly dates back over 1000 years (earliest recorded date is 1330) the northern border was planted in 2014 as a buffer zone for the adjacent new pitches and is referred to as the Burleigh Extension.

The altitude in Burleigh Wood descends from 84m in the south-east corner to 69m in the north-west corner. A tributary of Burleigh Brook runs along the western boundary, originating just inside the field at the south-west corner of the wood. The soil in the eastern half is slowly permeable seasonally wet acid loamy and clayey soils whereas that in the western half is slightly acid loamy and clayey soils with impeded drainage. This may help explain the evident difference in vegetation between both halves of the woodland.

Pedestrian access is obtained through a gate in the north-east corner of the ancient wood and this leads to a circular path around the wood. Vehicular access into the ancient wood is all but impossible, however the outer edge (Burleigh Extension) is accessible using a gate at the north-east end and following the hedgerow track in a westerly direction.

Holywell Wood is located at the western edge of Loughborough University, being approximately 3 km from the Loughborough town centre. It is owned and managed by Loughborough University. The wood does not border any public roads but is accessible from a university road (at https://w3w.co/galaxy.friend.lives). The wood can also be accessed from a car park at https://w3w.co/shots.adopt.tribe and in the farmyard of Holywell Farm (https://w3w.co/commuting.door.clues). The two former access points are both pedestrian and the latter (Holywell Farm) is a vehicle access gate. However, this access has not been maintained and so vehicles cannot enter the woodland. Whilst pedestrian access exists to the woodland, this is only open to Loughborough University staff and students. The public (unless invited) are not allowed in the wood.

Holywell Wood is classified as a ASNW and is recorded on the Leicestershire Ancient Woodland Inventory. The woodland has an extensive history and almost certainly dates back over one thousand years (the earliest record we have is 1428). Holywell Wood is relatively flat with a slight incline from the north-east corner (58m) to the south-west corner (64m). The soil throughout the wood is slightly acid loamy and clayey soils with impeded drainage.

The Horseshoe Wood extends from the south-west corner of Holywell Wood to the north-west corner of Burleigh Wood. It is separated from Holywell Wood by an access track leading to Holywell Farm (https://w3w.co/crunching.engage.falters) and bisected by another track (with the same destination) at https://w3w.co/long.hurricane.union. The woodland is approximately is approximately 25-30m wide. There is no pedestrian or vehicular access to this woodland.

The Carbon Offset Wood is located to the north-east of Burleigh Wood. It is accessible from a gate at https://w3w.co/dangerously.fishery.smug. The woodland has an extensive path network with a main ride extending along a south west-north east axis in the wood. Vehicles can get along this path. The woodland was planted approximately 20 years ago (around 2004) and is composed of an eclectic mixture of plants. The soil is slightly acid loamy and clayey soils with impeded drainage. It was intensively farmed arable land prior to being planted.

4.2 History of management

Historically much of Burleigh and Holywell Woods have been managed as coppice woodland. This is most evident in Burleigh where both hazel *Corylus avellana* and pedunculate oak *Quercus robur* coppice exist. Most of the oak coppice is long lapsed and it now forms the canopy species along with silver birch *Betula pendula*, ash *Fraxinus excelsior,* occasional field maple *Acer campestre* and crab apple *Malus sylvestris*. Hazel coppicing has ceased more recently (probably in the last 40 years) but occasional *ad hoc* coppicing has taken place in the intervening period (mostly close to path edges). It is worth noting that some hazel stools in Burleigh may be more than 200 years old.

The area of Burleigh wood known as the extension is composed of a number of different pioneer species, including some self-set butterfly-bush *Buddleja davidii*. Apart from maintaining access along the paths, no other management has taken part in this area.

Holywell Wood in contrast has less hazel and where it does exist (mostly in the western half of the wood) has not been coppiced for very long time periods (40+ years). Unlike Burleigh, there is no evidence of oak coppicing and in fact some suggestion that timber oaks may have been planted (lining the ride). The canopy diversity is similar between Holywell and Burleigh woods but the compositions are quite different. However, there is a noteworthy abundance of wych elm *Ulmus glabra* agg. in Holywell and a few specimens of European larch *Larix decidua* which are completely absent from Burleigh. The woodlands composition is likely to result from it being mostly clear felled during the Second World War, with today's wood being the product of secondary regeneration. This would explain some features such as an large former coppiced ash and general lack of older trees.

The Horseshoe wood is a new woodland (planted in the early 1990s) with a mixture of oak, ash, crab apple, holly *Ilex aquifolium* and occasional horse chestnut *Aesculus hippocastanum*. No notable management has been carried out in this woodland. The Carbon Offset Woodland has a very diverse planting scheme. There is evidence of crown lifting near pathways and management to keep rides open. There has also been some coppicing undertaken in the wood. As well, seed and bulb planting took place in late 2023. No other management has been noted.

4.3 Woodland resource characteristics

The following details the woodland resource characteristics including the species composition, age structure, stocking density and potential timber quality and yield.

Wood/Compartment: Holywell Wood
Canopy: frequent ash *Fraxinus excelsior,* pedunculate oak *Quercus robur,* silver birch *Betula pendula,* alder *Alnus glutinosa,* wych elm *Ulmus glabra* agg; occasional crab apple *Malus sylvestris,* common larch *Larix decidua,* wild cherry *Prunus avium*.
Understorey: frequent common hawthorn *Crateagus monogyna,* hazel *Corylus avellana*; occasional holly *Ilex aquifolium*
Field layer: Diverse with many ancient woodland indicators such as bluebells *Hyacinthoides non-scripta*, dog's mercury *Mercurialis perennis*, wood anemone *Anemone nemorosa*, bugle *Ajuga reptans* and Yellow pimpernel *Lysimachia nemorum,* pendulous sedge *Carex pendula* and bramble *Rubus fruticosus*.
NVC Woodland Type: W8 ash – field maple – dog's mercury (best fit)
Management: 2 x pedunculate oak & 1 x wych elm removed along main ride (2022). Hazel coppicing in compartment 7 (2023/2024).
Condition: Not assessed.
Comments: Full plant species list available in appendix A. However a notable rarity for this wood is herb Paris *Paris quadrifolia*. Full fungi species list available in appendix B. However, a notable species for the wood is Coral tooth fungus *Hericium coralloides*. Other survey results pertinent to this wood are found in appendix C.

Wood/Compartment: Burleigh Wood (including Burleigh Extension)
Canopy: frequent ash and pedunculate oak. *S*ilver birch frequent in west. Occasional crab apple, field maple.
Understorey: occasional common hawthorn. Frequent hazel and holly.
Field Layer: Bluebells and bracken *Pteridium aquilinum* dominate in west. Bramble abundant in east with occasional wood anemone, ramsoms *Allium ursinum* and red campion *Silene dioca.*
NVC Woodland Type: W10 pedunculate oak – bracken – bramble (best fit)
Management: *Ad hoc* felling of unsafe trees next to paths. Hazel coppicing in compartments 21 (2023) and 2 (2024). Blackthorn *Prunus spinosa*, hazel and hawthorn coppicing west end of extension compartment
Condition: Not assessed.
Comments: Full plant species list available in appendix A. Other survey results pertinent to this wood are found in appendix C.

Wood/Compartment: Horseshoe Wood
Canopy: Abundant pedunculate oak with occasional crab apple, ash and horse chestnut *Aesculus hipposcastanum*.
Understorey: Some holly with occasional elder *Sambucus nigra* and Blackthorn.
Field layer: Abundant wood avens *Geum urbanum,* occasional Yorkshire Fog *Holcus lanatus* and nettles *Urtica dioica.* Small number of other infrequent species.
NVC Woodland Types: Not applicable.
Management: None undertaken in period.
Condition: Not assessed.
Comments:

Full plant species list available in appendix A.

Wood/Compartment: Carbon Offset Wood
Canopy: Mixture of wild cherry *Prunus avium*, Rowan *Sorbus aucuparia*, Field maple *Acer campestre*, Apple *Malus* sp, Sweet chestnut *Castanea sativa*, Red oak *Quercus rubra* and Pedunculate oak *Quercus robur*.
Understorey: Japanese rose *Rosa rugosa*, Guelder rose *Viburnum opulus*, elder *Sambucus nigra*, butterfly bush *Buddleia davidii*, common gorse *Ulex europaeus*.
Field layer: Abundant false oat grass *Arrhenatherum elatius* with Greater stitchwort *Stellaria holostea* being locally frequent in compartment 1.
NVC Woodland Types: Not applicable.
Management: Hazel coppicing (2023) at north end of compartment 1. Bluebell bulbs and wildflower seeds planted along main ride and in compartments 1 and 4.
Condition: Not assessed.
Comments: Full plant species list available in appendix A.

4.4 Statutory Information

The following section identifies features present within the woodland or adjacent to the woodland where its presence will inform management. Key features are also shown on the maps associated with this report.

Feature	Within woodland(s)	Cpts	Adjacent to woodland(s)
Biodiversity - designations			
Site of Special Scientific Interest (SSSI)	No		No
Special Area of Conservation (SAC)	No		No
Tree Preservation Order (TPO)	Yes	Only Burleigh. No Extension or Cauliflower Corner.	No
Conservation Area	No		No
Ramsar Site	No		No
National nature reserve (NNR)	No		No
Local nature reserve (LNR)	No		No
Ancient Woodland Inventory (AWI)	Yes	Burleigh & Holywell	Yes (for Horseshoe & Carbon Offset)
Local Wildlife Sites (LWS)	Yes	Burleigh & Holywell	Yes (for Horseshoe & Carbon Offset)

Feature	Within Woodland	Cpts	Notes
Bat (species if known)	Yes	All	Likely. Confirmed 9 species present in Holywell, with possibly 3 more.
Dormouse	Possibly		Good habitat in Burleigh Wood but presence unlikely.
Great Crested Newt	No		Heavily shaded pond in Burleigh Wood. Habitat unsuitable.
Otter	No		Unsuitable habitat
Sand lizard	No		Unsuitable habitat
Smooth snake	No		Unsuitable habitat
Natterjack Toad	No		Unsuitable habitat
Schedule 1 Birds (species if known)	No		

Mammals (Red squirrel, water vole, pine marten, etc)	No		
Reptiles (grass snake, adder, common lizard, etc)	Possibly		Likely habitat for slow worm.
Plants	No		
Fungi/lichens	Yes	Holywell	*Hericium coralloides*
Invertebrates (butterflies, moths, beetles, etc)	No		
Amphibians	Possibly	Burleigh 18	Likely common frog, common newt and common toad.
Other wildlife designations			
Badgers	Likely	Carbon Offset & western half of Holywell Wood	
Scheduled monument	No		
Unschedduled monument	No		
Registered parks & gardens	No		
Boundaries & veteran trees	Yes		Veteran trees along boundary edge of Burleigh (cpts – 9, 12, 13, 14 & 15)
Listed Buildings			
Other (please state)	Yes	Burleigh 12, 13, 14 & 15	Medieval deer bank along boundary
National Character area (please state)	No		
National Park	No		
Area of Outstanding Natural Beauty (AONB)	No		
Other (please state)	No		
CROW access	No		
Public Rights of Way	No		
Other access provision	Yes	Burleigh & Carbon Offset Wood	Permissive paths
Public recreation facilities	No		
Provision of learning opportunities	No		
Anti-social behaviour	No		
Other (please state)	Yes	Holywell 7	Forest School
Watercourses	Yes	Burleigh Holywell	Tributary of Burleigh Brook runs along western boundary Burleigh Brook runs along northern boundary
Lakes	No		
Ponds	Yes	Burleigh 18	
Other (please specify):	No		

4.5 Habitat Types

The following table lists the habitat types within the woodland that will inform future management decisions. Larger non-wooded areas within the woodland are classified according to broad habitat type and their management is considered within the scope of this report. This information is a record of habitat as a baseline to future management where we will hope to achieve and maintain a diverse structure of habitat, species and age of trees, appropriate to the context of the woodland.

Feature	Within woodland(s)	Cpts	Notes
Ancient Semi-Natural Woodland (ANSW)	Yes	Burleigh Holywell	Several larch in Holywell 17 & 18
Planted Ancient Woodland Site (PAWS)	No		
Lowland beech and yew woodland	No		
Lowland mixed deciduous woodland	Yes	Carbon offset wood, Horseshoe Wood, Burleigh (Extension & Cauliflower Corner)	Mixed broadleaf canopy
Upland mixed ash woods	No		
Upland oakwood	No		
Wet woodland	No		
Wood-pasture & parkland	No		
Other (please state)	No		
Blanket bog	No		
Fenland	No		
Lowland calcareous grasland	No		
Lowland dry acid grassland	No		
Lowland heath land	No		
Lowland meadows	No		
Lowland raised bog	No		
Rush pasture	No		
Reed bed	No		
Wood pasture	No		
Upland hay meadow	No		
Upland heathland	No		
Unimproved grassland	No		
Peatlands	No		
Wetland habitats	No		
Other (please state)	No		

4.6 Structure

This section provides a snapshot of the current woodland structure across the entire holding. A full inventory of the woodland is included within the Plan of Operations. Ensuring woodland has a varied structure in terms of age, species, origin and open space provides a range of benefits for both biodiversity of the woodland and it's resilience.

Woodland type (broadleaf, conifer, coppice, intimate mix)	Percentage of Management Plan Area (%)	Age structure (even/uneven)	Notes (i.e. understorey or natural regeneration present)
Broadleaf (coppice with standards)	84.5	Uneven	Complex understorey. No oak regeneration noted.
Broadleaf	15.5	Even	Burleigh Extension & Cauliflower Corner – dense thicket mostly even aged Carbon Offset Wood – diverse species mix, though mostly same age.

Section 5: Woodland Protection

Woodlands in England face a range of threats; this section considers the potential threats and constraints facing the woodland. It uses a standard risk assessment process as shown below in order to consider any potential threat and whether there is a need to take action to protect the woodland.

5.1 Risk matrix

The matrix below was used to score any perceived risks associated with the woodland. The matrix also indicates the Forestry Commission recommended level of action to take to help manage the threat.

Impact	High	Plan for action	Action	Action
	Medium	Monitor	Plan for action	Action
	Low	Monitor	Monitor	Plan for action
		Low	Medium	High
		Likelihood of presence		

5.2 Plant health

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	*Hymenoscyphus fraxineus* (ash dieback)
Likelihood of presence (high, medium or low)	High
Impact (high, medium or low)	Medium
Response (inc protection measures)	Diversify woodland plant stock. Allow sycamore to grow in the woods as a suitable replacement for ash.

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	Oak leaf powdery mildew
Likelihood of presence (high, medium or low)	High
Impact (high, medium or low)	High
Response (inc protection measures)	Harvest acorns from woods and grow saplings in nursery for planting back into the wood to support regeneration.

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	Acute oak decline
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Medium
Response (inc protection measures)	Diversify species and support oak regeneration.

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	Oak Processionary Moth *Thaumetopoea processionea*
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Medium
Response (inc protection measures)	Diversify species and support oak regeneration. Vigilant for signs of OPM. Tree alert if discovered.

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	Chronic oak decline
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Medium
Response (inc protection measures)	Diversify species and support oak regeneration.

Threat e.g. *Hymenoscyphus fraxineus*, *Phytphoras* sp., needle blight, etc.	*Ophiostoma novo-ulmi* (Dutch Elm Disease)
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Medium
Response (inc protection measures)	Be vigilant in Wych Elm stock in Holywell. Remove diseased trees as soon as spotted.

5.3 Deer

Likelihood of presence (high, medium or low)	High
Impact (high, medium or low)	Low
Response (inc protection measures)	Muntjac and occasional Roe deer are present in the woodlands. Damage occasional but not currently problematic. Protect coppice stools using brash.

5.4 Grey squirrels

Likelihood of presence (high, medium or low)	High
Impact (high, medium or low)	Low
Response (inc protection measures)	Ring barking tops of younger trees in Burleigh Extension & Cauliflower Corner. Helping veteranise trees.

5.5 Livestock and other mammals

Threat (sheep, cattle, horse, etc)	Cattle & sheep
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Low
Response (inc protection measures)	Occasional escapees from nearby farm. Contact Holywell Hall Farm.

5.6 Water and soil

Threat (soil erosion, pollution, acidification of water, etc.)	Soil erosion along stream
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Low
Response (inc protection measures)	Create a sequence of dams to slow water in streams. Use willows and hazel supports to reinforce banks.

Threat (soil erosion, pollution, acidification of water, etc.)	Nitrate pollution in soils
Likelihood of presence (high, medium or low)	Medium
Impact (high, medium or low)	Low
Response (inc protection measures)	No action needed.

5.7 Environmental

Threat (pollution, fire, flood, wind, invasive species, antisocial behaviour, etc.)	Invasive species – Himalayan balsam in Holywell Wood
Likelihood of presence (high, medium or low)	High
Impact (high, medium or low)	Low
Response (inc protection measures)	Plants removed annually along stream before set seed.

Threat (pollution, fire, flood, wind, invasive species, antisocial behaviour, etc.)	Antisocial behaviour (including vandalism)
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Medium
Response (inc protection measures)	Repair vandalised property quickly. Ensure woodland boundaries are secure.

Threat (pollution, fire, flood, wind, invasive species, antisocial behaviour, etc.)	Fire
Likelihood of presence (high, medium or low)	Low
Impact (high, medium or low)	Low
Response (inc protection measures)	Monitor for any evidence of fires. During exceptionally dry weather consider closing Burleigh Wood to public.

Threat (pollution, fire, flood, wind, invasive species, antisocial behaviour, etc.)	Wind
Likelihood of presence (high, medium or low)	Medium
Impact (high, medium or low)	Low
Response (inc protection measures)	Monitor with regard to H&S for users of footpaths. 'High wind' signage installed at entrances.

5.8 Climate change resilience

Threat (uniform structure, provenance, lack of diversity)	Provenance (Carbon Offset Wood & Burleigh Extension & Cauliflower Corner)
Likelihood of presence (high, medium or low)	Medium
Impact (high, medium or low)	Medium
Response (inc protection measures)	Encourage natural regeneration. When replanting, select stock with more southern provenance.

5.9. Additional hazards and constraints

The following section lists any additional hazards or constraints that will impact future woodland management:

Management Access: Burleigh Wood is accessed from Holywell tip (https://w3w.co/dangerously.fishery.smug). Driving through the Carbon Offset Woodland to a gate at https://w3w.co/excuse.chew.keeps. A track is accessed that goes south. At another gate (https://w3w.co/soccer.sugar.parts) the woodland can be accessed. However, ingress further into the main woodland is very limited and this point should be seen as a place to pick up or drop off loads. ATV vehicles can access the Extension and Cauliflower Corner compartments as the track leading north from the gate accepts vehicles. Holywell Wood cannot be accessed by vehicles. All equipment has to be carried in. There are three access points – next to Charnwood Building (https://w3w.co/melt.barks.patrol), old gardens stores (https://w3w.co/follow.jacket.pasta), and Holywell Farm (https://w3w.co/owners.vaulting.uplifting). The Horsehoe Wood has very poor accessibility. The northern section can be entered from https://w3w.co/hexes.rehearsal.troubles with the southern section being accessed through the north-west corner of Burleigh Wood. The Carbon Offset Wood is easily accessible being entered from the Holywell tip (https://w3w.co/dangerously.fishery.smug). A ride allows easy vehicular access to the southern end of the wood.
Wayleaves or easements: None
Public rights of way: None. However, a permissive path exists around Burleigh Wood including the extension and Cauliflower Corner, as well as through the Carbon Offset Wood. There is a public right of way running along the northern boundary of Holywell Wood but this does not enter the wood. Within Holywell Wood there is a circular path that is private and only open to University staff, students and permitted visitors.

Ground conditions: Variable across the woodlands. In Burleigh Wood, the north-east and Soth-west sections are relatively dry (although paths can be very churned in wet conditions). The central section (running south-east to north-west) is wetter. A ditch runs between the pond in the south-east and the tributary of Burleigh brook in the north-west. The area surrounding this can be boggy in wet weather. Ground conditions are relatively firm in both the Carbon Offset Wood and Horseshoe Wood. However, in the former the track that runs parallel to the northern boundary can be very muddy in wet conditions. Holywell Wood is wetter and more boggy in the eastern half than western – the central ride offering an easy dividing line. As well, the area bordering Burleigh brook on the north side is liable to becoming very wet and muddy. For all woodlands, access should be using existing tracks where possible and as vehicle and plant access is not an issue in most cases, compaction is a minimal problem.
Slope: Burleigh Wood slopes between the SE (84m) and NE (69m) corners. The eastern section is slightly higher than the western section. There are no severe slopes. Holywell wood slopes gently between the SW and NE corners (64m to 58m). A similarly gentle slope exists between the south and north boundaries of the Carbon Offset Wood (77m to 71m). The Horseshoe Wood is relatively flat.
Undergrowth: Burleigh and Holywell Woods have extensive semi-natural understories. The Carbon Offset Wood also has a mixed understorey as part of the original planting scheme. In all these woods, access must follow existing paths and tracks. The understorey is poor in the Horseshoe Wood and does not impede access. However, no track or path was designed into this planting scheme and so it is inaccessible to all intents and purpose.
SSSI designations: None
Shooting interest: None

Section 6: Management Strategy

This section is a statement of intent, setting out how we intend to achieve the management objectives listed in Section 2. It also considers how any important features identified in previous sections will be managed. A detailed programme of works by compartment is included in the Plan of Operations.

Objective	Management intention	Management actions
To maintain and enhance the current biodiversity value of the woodland.	Coppice hazel in Burleigh, Holywell and Carbon Offset Woods.	Rotational coppicing on a 10-15 year cycle.
	Retaining and enhancing deadwood resource in woodlands.	Try to maintain a minimum of 40m3/ha most areas having 150m3/ha. 15% to be standing or aerial deadwood.
	Control access to sensitive plant areas within woodlands.	Maintain current access controls. Where needed develop new controls using coppiced materials.
	Develop good woodland structure (field layer, understorey, canopy layer, age structure) and a graduated woodland edge.	1. Maintain the ride in Holywell Wood, enlarging the central area into a glade. 2. Create gaps in the canopy of Horseshoe Wood. 3. Plant bluebell bulbs and wood anemone rhizomes in the Horseshoe Wood. 4. Rotationally coppice and thin Burleigh Extension and Cauliflower Corner compartments to create a scalloped edge. 5. Encourage natural regeneration by sowing tree seed collected from the woodlands.

	Remove invasive species and inappropriate planting choices.	1. Destroy Himalayan balsam plants growing in Holywell Wood and along Burleigh brook. 2. Kill Buddleja and Japanese rose plants growing in the Carbon Offset Woods.
	Diversify the species composition to include sycamore (via natural regeneration) to compensate for ash loss.	1. Plant and sow non-ash native trees in all woodlands. 2. Allow natural sycamore regeneration in all woods (especially ash areas). 3. Only remove ash saplings if diseased or where thinning is necessary.
	Manage bird and bat next/roost opportunities within the woods.	1. Install bird and bat boxes in Carbon Offset and Horseshoe woods. 2. Remove bird boxes from Holywell Wood. 3. Maintain current bird boxes in Burleigh Wood.
	Improve biodiversity records for each woodland and records of significant features.	1. Butterfly transects in Holywell and Burleigh Woods. 2. Take opportunities to record wildlife in the woodlands. 3. Produce maps of significant woodland features, e.g. large hazel coppice stools, old trees, etc. 4. Engage with local naturalists to survey the fauna and flora of the woodlands.
To maintain and develop Holywell Wood as a research resource with minimal or no adverse impact.	Holywell Wood Forest School	Continue to host a Forest School in Holywell Wood with no changes in the footprint.
	Develop the concept of using the woodlands as part of a Living Lab.	To liaise with academics to allow the woodlands to be used to support teaching and research.
To continue to encourage usage of Burleigh Wood and the adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain restricted access to Holywell Wood.	Maintain access infrastructure and signage.	1. Install new interpretation boards in Burleigh and Holywell Woods. 2. Wash interpretation boards. 3. Cut back low vegetation around boardwalks. 4. Brush off leaves from boardwalks and bridges. 5. Repair fences and gates as required.
	Manage the woodland boundaries.	1. Maintain fences and gates as required. 2. Use coppiced arisings to control unofficial access points into woodlands.
	Engage with students to develop volunteering opportunities in the woodlands.	1. Practical volunteering

To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.	Consider protected species during tree works.	Any work on mature trees that possess features that may be used by bats must be surveyed prior to work commencing. Tree work to be done outside nesting bird season.
	Ensure work in Burleigh Wood is compliant with the woodland TPO.	Make applications for all tree work in Burleigh Wood. At least 8 weeks' notice must be given and work only undertaken if agreed. For dangerous trees, photographic evidence must be taken to support notification of works.
	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).
	Comply with UK Forestry Standards.	Comply with UK Forestry Standards.
To monitor and record woodland management to assess the effectiveness of management against objectives, and to enable rapid response to unexpected outcomes arising from management.	Improve recording of forestry operations and their outcomes.	1. Create a compartment directory for the woodland. 2. Record all management activities in a Woodland Activity Log.
	Review this management plan.	Use the Woodland Activity Log to begin reviewing this plan.

6.1 Silvicultural systems

The following lists the silvicultural systems that will be employed within this management plan:

Harvesting
Selective felling – This system may be used in all woods except Burleigh (where TPO restrictions apply). Selective felling would only be used to ensure the width of rides or where a tree is deemed unsafe near footpaths, edges or the forest school. Timber may be used within the wood but will mostly be left as part of the deadwood resource. Coppicing – Hazel is being coppiced on a 10-15 year rotation. Coppicing is by compartment in each wood. Not all compartments are coppiced. Coppiced material is used for dead hedges, boundary and access control, hazel fencing on campus, deadwood resource and some is taken for other uses. Thinning – this operation will primarily occur in Carbon Offset and Horseshoe Woods as well as Burleigh Wood Extension and Cauliflower Corner compartments. Most thinned material will be left to add to the deadwood resource although some may be taken for other uses.

Establishment, restocking and regeneration
Natural regeneration – this will be supported where possible. However, common ash with a few wild cherry (in Holywell Wood) are the only species that show evident regeneration. Restocking – annual collection of seed will take place for a number of different species and these will be grown on and planted out in the woodland as whips. Additionally, the renewal of the tree stock will be supported through trees donated by the Woodland Trust. Coppice areas – in a coupe 2-3 years after coppicing, the quality of the existing stools will be reviewed and layering undertaken to establish new ones. On occasion, new plants may be bought in for restocking or stock grown from gathered seed.

6.2 New Planting

New planting and establishment
None proposed

6.3 Other operations

Access improvements – none are planned during this plan's period. Repairs will be carried out as and when necessary to footpath infrastructure.
Ride improvement – selective felling will occur along the central ride in Holywell Wood to maintain it. The intention is to widen the centre of the ride to become more glade-like allowing more light to the field layer.
Invasive species control – Holywell Wood is currently clear of *Rhododendron ponticum*, however it has been a problem in the past. As such, woodland workers will be vigilant for signs of reemergence and quickly control any new plants. Himalayan balsam continues to pop up occasionally in the woodland, particularly along the northern edge bordering the stream. These are removed when young to prevent seeding. Sycamore is no longer considered an invasive species in this context. It's bark ecology is most similar to that of common ash and with the likely reduction in this species, sycamore will make a suitable niche replacement. Invasion of this species will be allowed to happen naturally and it will be monitored.

Section 7: Stakeholder engagement

There is a requirement on both the Forestry Commission and the woodland owner/agent to undertake consultation/engagement. In line with the FC Operation Note 35, this section identifies the people or organisations with an interest in the woodland and is a record of engagement undertaken relative to the activities within this plan. The following organisations have been contacted for permission to undertake the listed management activities.

Work proposal	Individual/organisation	Date contacted	Date feedback received	Response	Action
Coppicing in Burleigh Wood	Charnwood Borough Council (Julie Webb)	23/11/2022	23/11/2022	Hazel coppicing does not fall under TPO	Coppicing allowed.

Section 8: Monitoring

This section identifies indicators of progress/success for each management objective and key management activities proposed within the plan. The data collected helps to evaluate progress against objectives and are checked at regular intervals across the lifetime of the plan.

Objective	Indicator of Progress/Success	Frequency of assessment	Responsibility
To maintain and enhance the current biodiversity value of the woodland.	Woodland Activity Logs showing coppicing/felling records	Logs are annual.	Assistant Gardens Manager
To maintain and develop Holywell Wood as a research resource with minimal or no adverse impact.	Forest School continuing use the area Partnership with academics who use the woods for teaching and research	Forest School contract renewed every 3 years Discussions with academics with regard to Living Lab	Grounds Manager Assistant Gardens Manager
To continue to encourage usage of Burleigh Wood and the	Continue to offer student volunteering opportunities in the wood	Annually Signage as required.	Holywell Gardens Team Arborist

adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain restricted access to Holywell Wood.	Woodland Activity Log showing access control and infrastructure maintenance New signage installed		Assistant Gardens Manager Grounds Manager
To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.	Woodland Activity Logs TPO/safety related emails	Annually TPO related tree work to be completed as necessary.	Arborist Assistant Gardens Manager Grounds Manager
To monitor and record woodland management to assess the effectiveness of management against objectives, and to enable rapid response to unexpected outcomes arising from management.	Woodland Activity Logs Map of woodland compartments Review of this plan	Every 10 years	Assistant Gardens Manager

Section 9: Plan of Operations

Objective	Management intention	Management Actions	2023		2024				2025				2026				2027				2028	
			Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su
To maintain and enhance the current biodiversity value of the woodland.	Coppice hazel in Burleigh, Holywell and Carbon Offset Woodlands	Rotational coppicing on a 10-15 year cycle	x	x			x	x			x	x			x	x			x	x		
	Retaining and enhancing deadwood resource in woodlands.	Try to maintain a minimum of 40m^3/ha most areas having 150m^3/ha. 15% to be standing or aerial deadwood.	Continuous																			
	Control access to sensitive plant areas within woodlands.	Maintain current access controls. Where needed develop new controls using coppiced materials.	Continuous																			
	Develop good woodland structure (field layer, understorey, canopy layer, age structure) and a graduated woodland edge.	Maintain the ride in Holywell Wood, enlarging the central area into a glade.					X	x							x	x						
		Create gaps in the canopy of Horseshoe Wood.						X								X						
		Plant bluebells and wood anemone rhizomes in Horseshoe Wood.					X								X							
		Rotationally coppice and thin Burleigh Extension and Cauliflower Corner compartments to create scalloped edge.		X				x				x				x				x		
		Encourage natural regeneration by sowing seed collected from the woodlands.					X				x				x				x			
	Remove invasive species and inappropriate planting choices. Remove litter and foreign objects from woods.	Destroy Himalayan balsam plants growing in Holywell Wood and along Burleigh brook.				X				x				x				x				x
		Kill Buddleia and Japanese rose plants					X	x			x	x			x	x			x	x		

		growing in the Carbon Offset Wood.																					
		Remove old plastic tree guards and old experimental equipment from woods.	x	x			x	x			x	x			x	x			x	x		
	Diversify the species composition to include sycamore (via natural regeneration) to compensate for ash loss.	Plant and sow non-ash native trees in all woodlands.																				
		Allow sycamore regeneration in all woods (especially ash areas).	Continuous																			
		Only remove ash saplings if diseased or where thinning is necessary.	Continuous																			
	Manage bird and bat nesting/roosting opportunities within the woods.	Install bird and bat boxes in Carbon Offset and Horseshoe woods.	Continuous																			
		Remove bird boxes from Holywell wood.																				
		Maintain current numbers of bird boxes in Burleigh Wood.	Continuous																			
	Improve biodiversity records for each woodland and records of significant features.	Butterfly transects in Holywell and Burleigh Woods.			x	x			x	x			x	x			x	x			x	X
		Take opportunities to record wildlife in the woodlands.	Continuous																			
		Produce records of significant features as part of the compartment directories.	Continuous																			
		Engage with local naturalists to survey the fauna and flora of the woodlands.	Continuous																			
To maintain and develop Holywell Wood as a research resource with	Holywell Wood Forest School.	Continue to host a Forest School in Holywell Wood with no changes in the footprint.	Continuous																			

minimal or no adverse impact.	Develop the concept of using the woodlands as part of the Living Lab.	To Liaise with academics to allow the woodlands to be used to support teaching and research.	Continuous																				
To continue to encourage usage of Burleigh Wood and the adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain restricted access to Holywell Wood.	Maintain access infrastructure and signage.	Install new interpretation boards in Holywell and Burleigh Woods.		x																			
		Wash interpretation boards.						x				x				x				x			
		Cut back low vegetation around boardwalks.				x				x				x				x					X
		Brush off leaves from boardwalks and bridges.						x				x				x				x			
		Repair fences, gates, boardwalks and bridges as required.	Continuous																				
	Manage the woodland boundaries.	Maintain fences and gates as required.	Continuous																				
		Use coppiced arisings to control unofficial access points to woodlands.	x	x			x	x			x	x			x	x			x	x			
	Offer events that raise the profile of the woodlands.	Offer two events in the woodlands each year.			x			x	x			x	x			x	x			x	x		
	Engage with students and staff to develop volunteering opportunities in the woodlands.	Practical volunteering.	x	x			x	x			x	x			x	x			x	x			
		Butterfly surveying.			x	x			x	x			x	x			x	x			x	x	
To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.	Consider protected species during tree works.	Any work on mature trees that possess features that may be used by bats must be surveyed prior to work commencing. Tree work to be done outside nesting bird season.	Continuous																				
	Ensure work in Burleigh Wood is compliant with the woodland TPO.	Make applications for all tree work in Burleigh wood. At least 8 weeks' notice must be given and work only undertaken if agreed. For	Continuous																				

		dangerous trees, photographic evidence must be taken to support notification of works.	
	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).	Continuous
	Comply with UK Forestry Standards.	Comply with UK Forestry Standards.	Continuous
To monitor and record woodland management to assess the effectiveness of management against objectives, and to enable rapid response to unexpected outcomes arising from management.	Improve recording of forestry operations and their outcomes.	Create a compartment directory for the woodlands.	Continuous
		Record all management activities in a Woodland Activity Log.	Continuous
	Review this management plan.	Use the Woodland Activity Log to begin reviewing this plan.	x x

Objective	Management intention	Management Actions	2028		2029		2030				2031				2032				2033	
			Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su	Au	Wi	Sp	Su
To maintain and enhance the current biodiversity value of the woodland.	Coppice hazel in Burleigh, Holywell and Carbon Offset Woodlands	Rotational coppicing on a 10-15 year cycle	x	x			x	x			x	x			x	x			x	x		
	Retaining and enhancing deadwood resource in woodlands.	Try to maintain a minimum of $40m^3$/ha most areas having $150m^3$/ha. 15% to be standing or aerial deadwood.	Continuous																			
	Control access to sensitive plant areas within woodlands.	Maintain current access controls. Where needed develop new controls using coppiced materials.	Continuous																			

	Develop good woodland structure (field layer, understorey, canopy layer, age structure) and a graduated woodland edge.	Maintain the ride in Holywell Wood, enlarging the central area into a glade.					X	x							x	x							
		Create gaps in the canopy of Horseshoe Wood.						X								X							
		Plant bluebells and wood anemone rhizomes in Horseshoe Wood.					X								X								
		Rotationally coppice and thin Burleigh Extension and Cauliflower Corner compartments to create scalloped edge.		X				x				x				x				x			
		Encourage natural regeneration by sowing seed collected from the woodlands.					X				x				x				x				
	Remove invasive species and inappropriate planting choices. Remove litter and foreign objects from woods.	Destroy Himalayan balsam plants growing in Holywell Wood and along Burleigh brook.				X				x				x				x					x
		Kill Buddleia and Japanese rose plants growing in the Carbon Offset Wood.					X	x			x	x			x	x			x	x			
		Remove old plastic tree guards and old experimental equipment from woods.	x	x			x	x			x	x			x	x			x	x			
	Diversify the species composition to include sycamore (via natural regeneration) to compensate for ash loss.	Plant and sow non-ash native trees in all woodlands.																					
		Allow sycamore regeneration in all woods (especially ash areas).	Continuous																				
		Only remove ash saplings if diseased or where thinning is necessary.	Continuous																				

	Manage bird and bat nesting/roosting opportunities within the woods.	Install bird and bat boxes in Carbon Offset and Horseshoe woods.	Continuous																					
		Remove bird boxes from Holywell wood.																						
		Maintain current numbers of bird boxes in Burleigh Wood.	Continuous																					
	Improve biodiversity records for each woodland and records of significant features.	Butterfly transects in Holywell and Burleigh Woods.			x	x			x	x			x	x			x	x			x	X		
		Take opportunities to record wildlife in the woodlands.	Continuous																					
		Produce records of significant features as part of the compartment directories.	Continuous																					
		Engage with local naturalists to survey the fauna and flora of the woodlands.	Continuous																					
To maintain and develop Holywell Wood as a research resource with minimal or no adverse impact.	Holywell Wood Forest School.	Continue to host a Forest School in Holywell Wood with no changes in the footprint.	Continuous																					
	Develop the concept of using the woodlands as part of the Living Lab.	To Liaise with academics to allow the woodlands to be used to support teaching and research.	Continuous																					
To continue to encourage usage of Burleigh Wood and the adjacent Carbon Offset Wood as a recreational resource for local residents and University students and staff. Maintain	Maintain access infrastructure and signage.	Install new interpretation boards in Holywell and Burleigh Woods.		x																				
		Wash interpretation boards.						x				x				x				x				
		Cut back low vegetation around boardwalks.				x				x				x				x				X		
		Brush off leaves from boardwalks and bridges.						x				x				x				x				

restricted access to Holywell Wood.		Repair fences, gates, boardwalks and bridges as required.	Continuous																						
	Manage the woodland boundaries.	Maintain fences and gates as required.	Continuous																						
		Use coppiced arisings to control unofficial access points to woodlands.	x	x			x	x			x	x			x	x			x	x		
	Offer events that raise the profile of the woodlands.	Offer two events in the woodlands each year.			x			x	x			x	x			x	x			x	x	
	Engage with students and staff to develop volunteering opportunities in the woodlands.	Practical volunteering.	x	x			x	x			x	x			x	x			x	x		
		Butterfly surveying.			x	x			x	x			x	x			x	x			x	x
To fulfil all legal obligations during management of the woodland and ensure that management is in accordance with UK Forestry Standards guidelines.	Consider protected species during tree works.	Any work on mature trees that possess features that may be used by bats must be surveyed prior to work commencing. Tree work to be done outside nesting bird season.	Continuous																						
	Ensure work in Burleigh Wood is compliant with the woodland TPO.	Make applications for all tree work in Burleigh wood. At least 8 weeks' notice must be given and work only undertaken if agreed. For dangerous trees, photographic evidence must be taken to support notification of works.	Continuous																						
	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).	Fell a maximum of $5m^3$ in each woodland per quarter (excluding coppicing).	Continuous																						
	Comply with UK Forestry Standards.	Comply with UK Forestry Standards.	Continuous																						
To monitor and record woodland management to assess the effectiveness of management against objectives,	Improve recording of forestry operations and their outcomes.	Create a compartment directory for the woodlands.	Continuous																						
		Record all management activities in a Woodland Activity Log.	Continuous																						

and to enable rapid response to unexpected outcomes arising from management.	Review this management plan.	Use the Woodland Activity Log to begin reviewing this plan.																				x	x

Appendix A: Woodland Vegetation Survey Species lists

Burleigh Wood

Scientific Name	Common Name	Scientific Name	Common Name
Quercus robur	Pedunculate oak	*Holcus mollis*	Creeping soft grass
Fraxinus excelsior	Common ash	*Lamiastrum galeobdolon* subsp. *montanum*	Yellow archangel
Betula pendula	Silver birch	*Melica uniflora*	Wood melick

Acer campestre	Field maple	*Urtica dioica*	Nettles
Sorbus aucuparia	Rowan	*Arum maculatum*	Lords and Ladies
Quercus x rosacea	Hybrid oak	*Dryopteris filix-mas*	Male fern
Malus sylvestris	Crab apple	*Rumex sanguineus*	Wood dock
Coryllus avellana	Hazel	*Silene dioica*	Red campion
Crataegus monogyna	Common hawthorn	*Mercurialis perennis*	Dog's mercury
Ilex aquifolium	Holly	*Cardamine flexuosa*	Wavy bittercress
Sambucus nigra	Elder	*Alliaria petiolate*	Hedge mustard
Ribes rubrum	Red currant	*Allium ursinum*	Ramsoms
Rosa arvensis	Field rose	*Arctium minus*	Lesser burdock
Rosa canina agg.	Dog rose	*Anemone nemorosa*	Wood anemone
Rubus idaeus	Raspberry	*Carex pendula*	Pendulous sedge
Hyacinthoides non-scripta	Bluebells	*Chrysosplenium oppositifolium*	Opposite-leaved golden leaved saxifrage
Galium aparine	Cleavers	*Dryopteris affinis agg.*	Scaly male-fern
Lonicera periclymenum	Honeysuckle	*Geranium robertianum*	Herb Robert
Pteridium aquilinum	Bracken	*Heracleum sphondylium*	Hogweed
Rubus fruticosus	Bramble	*Lapsana communis*	Nipplewort
Milium effusum	Wood millet	*Luzula sylvatica*	Great wood rush
Geum urbanum	Wood avens	*Lysimachia nemorum*	Yellow pimpernel
Hedera helix	Ivy	*Moehringia trinervia*	Three-nerved sandwort
Carex sylvatica	Wood sedge	*Poa annua*	Annual meadow grass
Chaemerion angustifolium	Rosebay willowherb	*Digitalis purpurea*	Foxglove
Circaea lutetiana	Enchanter's nightshade	*Dryopteris dilatata*	Broad buckler fern
Poa trivialis	Rough meadow grass	*Veronic montana*	Wood speedwell
Sanicula europaea	Sanicle	*Callitriche agg.*	Water starwort
Scrophularia nodosa	Common figwort	*Lemna minor*	Common duckweed
Taraxacum agg.	Dandelions	*Sparganium erectum*	Branched bur-reed
Solanum dulcamara	Bittersweet	*Iris pseudocorus*	Yellow iris
Juncus effusus	Soft rush	*Lycopus europaeus*	Gypsywort
Calypogeia arguta	Notched Pouchwort	*Chiloscyphus polyanthos*	St Winifrid's Moss
Lophocolea heterophylla	Variable leaved crestwort	*Metzgeria furcata*	Forked veilwort
Orthotrichum affine	Wood bristle moss	*Fissidens bryoides var. bryoides*	Lesser pocket moss
Kindbergia praelonga	Common feather moss	*Mnium hornum*	Swan's neck thyme moss
Pseudotaxiphyllum elegans	Elegant silk moss	*Atrichum undulatum var. undulatum*	Common smoothcap
Brachythecium rutabulum	Rough stalked feather moss	*Amblystegium serpens*	Creeping feather moss
Cryphaea heteromalla	Lateral cryphaea	*Hypnum cupressiforme var cupressiforme*	
Isothecium myosuroides	Slender mouse tail moss	*Leptodictyum riparium*	Kneiff's feather moss

Orthotrichum diaphanum	White tipped bristle moss	*Rhynchostegium confertum*	Clustered feather moss
Ulota bruchii	Bruch's pincushion		

Holywell Wood

Scientific Name	Common Name	Scientific Name	Common Name
Quercus robur	Pedunculate oak	*Holcus mollis*	Creeping soft grass
Fraxinus excelsior	Common ash	*Lamiastrum gaelobdolon* subsp. *montanum*	Yellow archangel
Betula pendula	Silver birch	*Melica uniflora*	Wood melick
Acer campestre	Field maple	*Urtica dioica*	Nettles
Alnus glutinosa	Alder	*Prunus spinosa*	Blackthorn
Ulmus glabra agg.	Wych elms	*Arum maculatum*	Lords and Ladies
Larix europaea	European larch	*Silene dioica*	Red campion
Coryllus avellana	Hazel	*Mercurialis perennis*	Dog's mercury
Crataegus monogyna	Common hawthorn	*Cardamine flexuosa*	Wavy bittercress
Ilex aquifolium	Holly	*Viburnum opulus*	Geulder-rose
Ligustrum vulgare	Wild privet	*Alliaria petiolate*	Hedge mustard
Sambucus nigra	Elder	*Dryopteris affinis agg.*	Scaly male-fern
Ribes rubrum	Red currant	*Geranium robertianum*	Herb Robert
Luzula sylvatica	Great wood rush	*Arctium minus*	Lesser burdock
Lysimachia nemorum	Yellow pimpernel	*Anemone nemorosa*	Wood anemone
Rubus idaeus	Raspberry	*Carex pendula*	Pendulous sedge
Hyacinthoides non-scripta	Bluebells	*Dryopteris dilatata*	Broad buckler fern
Galium aparine	Cleavers	*Veronic montana*	Wood speedwell
Lonicera periclymenum	Honeysuckle	*Deschampsia cespitosa subsp. cespitosa*	Tufted hair grass
Rubus fruticosus	Bramble	*Stachys sylvatica*	Hedge woundwort
Milium effusum	Wood millet	*Viola riviniana*	Common dog violet
Geum urbanum	Wood avens	*Brachypodium sylvaticum*	False brome
Hedera helix	Ivy	*Aspenium scolopendrium*	Hart's tongue fern
Carex sylvatica	Wood sedge	*Epilobium hirsutum*	Great willowherb
Chaemerion angustifolium	Rosebay willowherb	*Glyceria flutans*	Floating sweet grass
Circaea lutetiana	Enchanter's nightshade	*Impatiens glandifera*	Himalayan balsam
Poa trivialis	Rough meadow grass	*Paris quadrifolia*	Herb Paris
Angelica sylvestris	Wild angelica	*Populus tremula*	Aspen
Filipendula ulmaria	Meadosweet	*Rumex conglomeratus*	Clustered dock
Stellaria holostea	Greater stitchwort	*Tamus communis*	Black bryony
Ajuga reptans	Bugle	*Pellia endiviifolia*	Endive Pellia

Anthriscus sylvestris	Cow parsley	*Metzgeria violaea*	Blueish veilwort
Carex remota	Remote sedge	*Plagiomnium undulatum*	Hart's tongue thyme moss
Ficaria verna subsp. ficaria	Lesser celandine	*Thuidium tamariscinum*	Common tamarisk moss
Holcus lunatus	Yorkshire fog	*Mnium hornum*	Swan's neck thyme moss
Oxalis acetosella	Wood sorrel	*Atrichum undulatum var. undulatum*	Common smoothcap
Poa nemoralis	Wood meadow grass	*Amblystegium serpens*	Creeping feather moss
Ranunculus repens	Creeping buttercup	*Dicranella heteromalla*	Silky forklet moss
Rumex obtusifolia	Broad-leaved dock	*Hypnum cupressiforme var cupressiforme*	
Valeriana officinalis	Common valerian	*Rhynchostegium confertum*	Clustered feather moss
Scrophularia nodosa	Common figwort	*Bryum capillare*	Capillary thread moss
Taraxacum agg.	Dandelions	*Isothecium myosuroides*	Slender mouse tail moss
Lophocolea heterophylla	Variable leaved crestwort	*Orthotrichum affine*	Wood bristle moss
Lophocolea bidentata	Bifid crestwort	*Kindbergia praelonga*	Common feather moss
Eurhynchium striatum	Common striated feather moss	*Pseudotaxiphyllum elegans*	Elegant silk moss
Fissidens taxifolius var taxifolius	Common pocket moss	*Brachythecium rutabulum*	Rough stalked feather moss
Thamnobryum alopecurum	Fox tail feather moss		

Appendix B: Fungi Survey (Holywell Wood, 2023)

Scientific Name	Common Name
Amanita citrina	False Deathcap
Amanita vaginata	The Grisette
Bolbitius titubans	Yellow Fieldcap
Calvatia gigantea	Giant Puffball
Collybiopsis confluens	Clustered Toughshank
Daedaleopsis confragosa	Blushing Bracket
Daldinia concentrica	King Alfred's Cakes
Exidia nucleata	Crystal Brain fungus
Fomes fomentarius	Hoof Fungus
Fomitopsis betulina	Razorstrop Fungus
Hapalopilus rutilans	Cinnamon Bracket
Hericium coralloides	Coral Tooth
Hygrocybe ceracea	Butter Waxcap
Hygrocybe quieta	Oily Waxcap
Hypholoma fasciculare	Sulphur Tuft
Hypoxylon fuscum	Hazel Woodwart
Inonotus hispidus	Shaggy Bracket
Laccaria amethystina	Amethyst Deceiver
Laccaria laccata	The Deceiver
Lepista flaccida	Tawny Funnel
Lycoperdon perlatum	Common Puffball
Mycena galericulata	Common Bonnet
Mycena rosea	Rosy Bonnet
Mycena tenerrima	Frosty Bonnet
Mycena vitilis	Snapping Bonnet
Nectria cinnabarina	Coral Spot
Paxillus involutus	Brown Rollrim
Pluteus cervinus	Deer Shield
Postia stiptica	Bitter bracket
Rhodocollybia butyracea	Butter Cap
Roridomyces roridus	Dripping Bonnet
Russula ochroleuca	Ochre Brittlegill
Scleroderma citrinum	Common Earthball
Stereum hirsutum	Hairy Curtain Crust
Tremella mesenterica	Yellow Brain Fungus
Xerocomellus chrysenteron	Red Cracked Bolete
Xylaria hypoxylon	Candlesnuff Fungus
Xylaria longipes	Dead Moll's Fingers

Appendix C: Surveys of other organisms

Holywell Wood Bat Survey (July 2023)

Barbastelle
Brandt's Bat
Brown Long-eared Bat
Common Pipistrelle
Daubenton's Bat
Leisler's Bat
Nathusius' Pipistrelle
Natterer's Bat
Noctule
Serotine
Soprano Pipistrelle
Whiskered Bat

The bat species listed above were identified flying along the main ride in Holywell Wood during a fortnight in July 2023. The bats listed in italics require further analysis of the recording to confirm their presence.

As well, surveying also took place at the nearby Holywell Cottage and the evidence supports the statement that Brown long eared bats and Pipistrelles (both species) are highly likely to be roosting in the roof and wall space.

Holywell Bird Survey (Spring 2022 and Winter 2023)

Wren, Chiffchaff, Blackbird, Song Thrush, Magpie, Wood Pigeon, Blackcap, Great Tit, Nuthatch, Great Spotted Woodpecker, Carrion crow, Blue Tit, Robin, Marsh tit, Garden warbler (possible), Long tailed tit, Redpoll, Goldfinch

Burleigh Bird Survey (Spring 2023 and Autumn 2023)

Blackbird, Robin, Greenfinch, Blue Tit, Wren, Great Tit, Wood Pigeon, Dunnock, Chiffchaff, Great spotted woodpecker, Carrion crow, Nuthatch, Treecreeper, Song thrush, Jackdaw, Magpie, Redwing, Long tailed tit