Forestry Commission England

Ashridge Estate Woodland Management Plan

Executive Summary

This document has been prepared for stakeholders, neighbours and visitors to Ashridge. Comments on the plan are invited between 22 January and 8 February 2019.

The full document may be viewed at the Visitor Centre between those dates.

Section 1: Vision and Objectives

1.1 Vision

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

The long term vision of the woodland management is to provide a biodiverse, species rich and mixed aged woodland environment which maintains the unique character and historic culture of the Estate and provides timber income to fund management and open public access.

In order to achive the vision there are several key objectives as stated below.

1.2 Management Objectives

No.	Objectives (include environmental, economic and social considerations)
1	**Biodiversity and Conservation Management** • To undertake active management by thinning, coppicing and felling to ensure a diverse and resilient woodland structure with a wide range of habitat niches from ground flora to understorey, coppice, sub-storey and high canopy; • To undertake deer and squirrel control to reduce their populations to a level at which damage caused is sustainable and natural regeneration can occur; • To undertake ride management to create a graduated woodland edge, woodland glades and species rich ride habitats whilst acting as a means to reduce fire risk across the Estate; • To manage sympathetically the veteran trees across the Estate in line with the existing Estate Veteran Tree Management policy whilst also undertaking veteranisation on selected suitable trees and identifying the next generation of veteran trees; • To continue the reversion of Plantation on Ancient Woodland Sites (PAWS) to native species woodland; • To remove potential threats to the ecological value of the woodland such as those from exotic species; and • To manage woodland in line with the requirements set out in the respective Site of Special Scientific Interest (SSSI) in order to achieve favourable condition of the woodland SSSI. • To create and manage open areas, glades and rides on the former woodpasture of the commons.
2	**Landscape Value & Public Access** • To maintain the integrity of the woodlands in the local landscape through

No.	Objectives (include environmental, economic and social considerations)
	the principals of continuous cover forestry so as to sustain a perpetual physical feature of mature woodland; • To utilise both external long term retention fringes and sensitive thinning management to ensure continuity of presence whilst aiming for a range of age classes within the canopy and also phasing thinning and harvesting operations throughout the plan period to minimise visual impact; • To actively promote diversity of species, structure and age class distribution across the compartments to reduce the risks of woodland loss through, for example, wind throw, pests and diseases or fire; • Identify and manage compartments with ash to remove or mitigate trees with *Hymenoscyphus fraxineus* and implement phased species restructuring of Ash dominated compartments; • Improve existing access tracks to allow better public access including where possible disabled access whilst providing improved access for woodland management; • Educate the public about woodland management, ecology, pest control, diseases and local archaeology; and • Undertake sympathetic woodland management around all Scheduled Ancient Monuments (SAMs) and other archaeological features.
3	**Economic & Timber Management** • Realise timber value where compatible with nature conservation objectives; • To continue active management in all crop types in order to release timber into the most appropriate markets to help financially support the delivery of biodiversity and landscape objectives; • To source grant funding from the Forestry Commission/Natural England under the new Countryside Stewardship Scheme for protection and improvement of woodland assets; • To utilise harvested timber in-house for the Estate's biomass boiler and Estate fencing requirements; • Restructure the Ash dominated compartments to mitigate against the impact of *Hymenoscyphus fraxineus*; restocking with mixed broadleaf species; • Increase species diversity across the Estate to provide resilience against future climatic changes and pests and disease; and • Improve the internal access infrastructure for the extraction and stacking of timber products.

Section 2: Woodland Survey

2.1 Description

Overview

The Ashridge Estate lies within the Chilterns Area of Outstanding Natural Beauty (AONB) predominantly in Hertfordshire and the district of Dacorum but extends into Buckinghamshire and Aylesbury Vale. It lies immediately north of the town of Berkhamstead.

The Estate lies on the Chilterns escarpment that peaks at an altitude of 230m above sea level (ASL) at Ivinghoe Beacon towards the northern end of the Estate. The woodland forms a prominent broadleaf feature within the landscape particularly to the west due to the height and aspect of the escarpment.

The Ashridge Estate extends to 2014ha of which 947ha is woodland representing around 50% of the Estate. For comparison, England's woodland coverage extends to 10% of the land area. Much of the woodland lies within the Ashridge Commons and Woods Site of Special Scientific Interest (SSSI) (626.41ha), which also form a part of the Chilterns Beechwood Special Area of Conservation (SAC). Areas of the woodland also fall within the Ivinghoe Hills SSSI (210.42ha) and Albury Nowers SSSI (19.79ha). Most of the woodland that falls outside the SSSI boundaries is ancient semi-natural woodland or plantations on ancient woodland sites.

Past Management

Ashridge Estate was created as a monastery by Edmund of Cornwall in 1283, before being bought in 1604 by Thomas Egerton and passing (through inheritance) to the Brownlow family in the 19th Century. In the 18th Century Capability Brown worked on the Estate parkland, creating the Golden Valley on the eastern side of the Estate. The Estate was acquired by the National Trust in 1925.

Human settlements and management are evident throughout the woodland, which contains 16 Scheduled Ancient Monuments, some dating back to the Bronze Age. More recent (early 20th Century) historic management is evident within the remnant wood pasture common land which has subsequently grown into semi mature successional broadleaved woodland due to the lack of grazing. Conifer plantations were created on the Estate through the mid-20th Century but more recent management strategies have targeted removal of such plantations and reversion back to native broadleaf woodland.

Current forest operations and management is conducted by the in-house National Trust forest rangers and specialist contractors.

External Access

The external access to the majority of the Estate woodland is via public road. Some isolated blocks are accessed over tenanted farm tracks.

Internal Access

The woodland contains a varied network of unsurfaced rides that provide access to most compartments whilst ground conditions permit. There are several hardstanding tracks throughout this network however, some are in need of repair. There are no designated stacking areas although areas on or adjacent to car parks have been used previously. Many of the rides on the Estate are bordered by mature trees and have become shaded in places. This has reduced vehicular access for larger machinery.

Boundaries

The boundaries vary across the Estate from natural woodland edge to hedgerows.

Topography

The topography of the woodland varies across the Estate, ranging from relatively flat common ground down the central belt which falls away to steep ground along the western and southern boundary. There are some gently undulating valleys on the eastern half of the Estate including Golden Valley.

Soil

The soils include:

- Slightly acid loamy and clayey soils with impeded drainage
- Freely draining slightly acid but base-rich soils
- Shallow lime-rich soils over chalk or limestone

Climate

The nearest Met Office climate station to Ashridge provides an annual average rainfall of 814.7mm compared to the national average of 1154mm (1981 – 2010 data).

Windthrow Hazard Classification

Thinning and felling operations are not severely restricted by windthrow risk.

Woodland Type, Species & Structure

The Estate woodland is predominantly mixed broadleaf with some mixed broadleaf and conifer plantations. A large area of the woodland is of un-even age with 298.6 ha classified as Ancient Semi Natural Woodland (ASNW).

A diverse range of native species is present across the Estate however, the dominant broadleaf species in the woodland together with an estimate of the composition across the Estate are Oak (*Quercus robur*) *20%,* Common Beech (*Fagus sylvatica*) 20%, Ash (*Fraxinus excelsior*) 10%, Birch (*Betula pendula*) 10%, Sycamore (*Acer pseudoplananus*) 10% and Sweet Chestnut (*Castanea sativa*) 5%. The dominant conifer species include European Larch (*Larix decidua*) 10% and Scots Pine (*Pinus sylvestris*) 5%.

2.2 Information

Feature	Within Woodland(s)	Cpts	Adjacent to Woodland(s)	
Biodiversity - Designations				
Site of Special Scientific Interest	Yes		Yes	
Special Area of Conservation	Yes		Yes	
Tree Preservation Order	No		Yes	
Conservation Area	No		Yes	

Feature		Within Woodland(s)	Notes
Bat	Species (if known)	Yes	Expected to be situated in all woodland
Great Crested Newt		Yes	NBN search data
Badger		Yes	
Schedule 1 Birds	Species:	Yes	44 in total
Mammals		Yes	NBN search data
Reptiles (grass snake, adder, common lizard etc)		Yes	NBN search data
Plants		Yes	NBN search data
Fungi/Lichens		Yes	
Invertebrates (butterflies, moths, beetles etc)		Yes	
Amphibians (pool frog, common toad)		Yes	NBN search data
Scheduled Monuments		Yes	
Unscheduled Monuments		Yes	
Registered Parks and Gardens		Yes	
Boundaries and Veteran Trees		Yes	
Listed Buildings		Yes	
Area of Outstanding Natural Beauty		Yes	
CROW Access		Yes	
Public Rights of Way (any)		Yes	
Other Access Provision		Yes	
Public Involvement		Yes	
Visitor Information		Yes	
Public Recreation Facilities		Yes	
Provision of Learning		Yes	

Opportunities		
Anti-social Behaviour	Yes	
Watercourses	Yes	
Lakes	No	
Ponds	Yes	

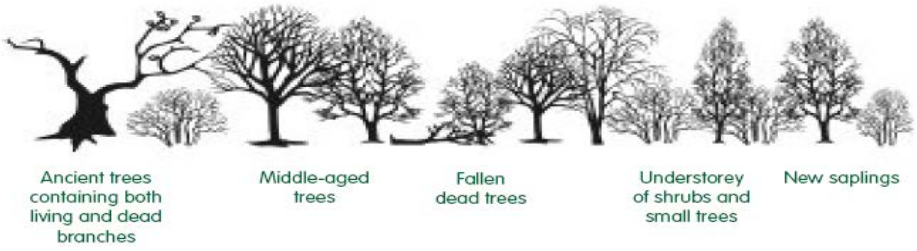
2.3 Habitat Types

Feature	Within Woodland			
Woodland Habitat Types				
Ancient Semi-Natural Woodland	Yes			
Planted Ancient Woodland Site (PAWS)	Yes			
Semi-natural features in PAWS	Yes			
Lowland beech and yew woodland	Yes			
Lowland mixed deciduous woodland	Yes			
Wood-pasture and parkland	Yes			
Non Woodland Habitat Types				
Lowland calcareous grassland	Yes			
Lowland dry acid grassland	Yes			
Lowland heath land	Yes			
Wood pasture	Yes			

2.4 Structure

Woodland Type (Broadleaf, Conifer, Coppice, Intimate Mix)	Approximate Percentage of Mgt Plan Area	Age Structure (even/uneven)	Notes (i.e. understory or natural regeneration present)
Broadleaf	65%	Uneven	Mature/semi mature mixed broadleaf woodland.
Broadleaf	15%	Even	Mature/semi mature mixed broadleaf woodland.
Broadleaf coppice	5%	Even	Remnant and recent coppice management.
Mixed broadleaf & conifer	10%	Even	Conifer planted as nurse crop to broadleaf species.
Conifer	5%	Even	Originally planted as nurse crop for broadleaf species but have subsequently shaded out broadleaf due to a lack of thinning interventions.

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



Even-aged woodland – tidy but of low diversity

Section 3: Woodland Protection

3.1 Plant Health

Threat	Ash Dieback *Hymenoscyphus fraxineus*
Likelihood of presence (high/medium/low)	High (observed during surveying)
Impact (high/medium/low)	High
Response (inc protection measures)	Phased restructuring of woodland to focus on Ash dominated compartments. Group fells and restocking to reduce impact of disease and increase species diversity within the woodland; More active management targeting undermanaged compartments; Group fells of diseased trees to let more light into stand in a controlled fashion; Refer to industry management to try and minimise the incidence of infection and spread; Favour removal of Ash at thinning interventions (especially those considered to have reached maturity) and promote young, healthy vigorous stems; Include alternative native broadleaf species to lower risk of woodland de-generation at point of restocking. Practice biosecurity procedures as guided by Forestry Commission; Regular monitoring of stands especially during growing season for signs of infection.

Threat	Acute Oak Decline (AOD)
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	High
Response (inc protection measures)	Record all sightings with GPS and photographic record; Remove 90% of infected trees following sustained decline over two years, retain 10% as deadwood habitat; More active management targeted at undermanaged compartments to improve stand environments; Consider using other alternative native broadleaf species in addition to Oak;

	Practice biosecurity procedures as guided by Forestry Commission; and regular monitoring of stands especially during growing season for signs of infection.

Threat	*Phytophthora ramorum* in larch.
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Aim to harvest all mature Larch over duration of the management plan.

3.2 Deer

Species - Likelihood of presence (high/medium/low)	High – Fallow and Muntjac
Impact (high/medium/low)	High
Response (inc protection measures)	Continue to reduce the deer population to a level where damage is minimal and allows the revival of the woodland and natural regeneration to occur.

3.3 Grey Squirrels

Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	High
Response (inc protection measures)	Undertake control to reduce the population to levels at which tree damage becomes acceptable.

3.4 Livestock and Other Mammals

Threat	Edible dormouse *Glis glis*
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Medium
Response (inc protection measures)	Continually monitor for signs of presence including damage to trees. If found then introduce a control program where feasible.

Threat	Livestock – dependant on common land

Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Livestock fencing to be erected if common land grazing is adopted.

3.5 Water and Soil

Threat	Soil erosion
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Sympathetic planning and management of all forest operations which must be UK Forestry Standard compliant. • Undertake work during dry ground conditions, where possible; • Restrict extraction to designated routes; • Use brash mats where appropriate; and • Improve internal access within woodland to aide timber extraction.
Threat	Soil/water pollution
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	High
Response (inc protection measures)	All forestry workers to carry spillage kits at all times; Only use competent contractors; and undertake refuelling at designated point.

3.6 Environmental

Threat	Wind
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Sympathetic management to reduce exposure of compartments to wind throw. This will be achieved through woodland restructuring and delicate (mindful) thinning or felling operations. This will include: • Maintain wind-firm edge through less

	intense thinning on boundary trees; • Regeneration felling groups to be located off leeward edge so as to maintain stability; and • Undertake light and incremental thinning in unmanaged areas.
Threat	Fire
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	High
Response (inc protection measures)	Creation of wider rides up to 16m with clear management strategy to separate larger parcels of woodland.
Threat	Invasive Species – laurel and rhododendron.
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Medium
Response (inc protection measures)	Implement management prescriptions listed within the Chilterns Ancient Woodland: Assessment Report for the Ashridge Estate

3.7 Social

Threat	Anti-social behaviour
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Deterrent signs to be placed in areas subject to vandalism/fly-tipping.

3.8 Economic

Threat	Poor quality timber products
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	High
Response (inc protection measures)	Introduce thinning programme to favour trees of good form and health;

Threat	Difficult / delicate felling sites.
Likelihood of presence (high/medium/low)	Medium

Impact (high/medium/low)	Medium
Response (inc protection measures)	Prioritise high value crops for more accessible compartments; Improve access infrastructure; and schedule work programme to coincide with felling more productive compartments to even out cost/income generation.

3.9 Climate Change Resilience

Threat	Lack of Species Diversity
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Increase species diversity across the woodland Estate

Section 4: Management Strategy

RESTRUCTURING

To achieve the objectives stated in Section 1.2 above, the programme of woodland restructuring will need to continue over the next 20-30 years in order to ensure that the woodland, which is reaching economic and biological maturity, is regenerated gradually to minimise landscape impact. The result of such restructuring will diversify the age class and species structure.

MANAGEMENT TECHNIQUES

The variety of management techniques currently being used on the Estate will be continued in order to meet the objectives going forward. This will be developed further to include more continuous cover forestry systems, in particular where a good seed source, parent crop and a receptive seed bed allow for the next generation of trees to be brought on.

A variety of continuous cover techniques will be required, from single tree selection to promote the shelter wood system to group felling/felling of small areas (no more than 0.5ha). It is thought that this form of management will only be appropriate for broadleaf blocks and will need to be monitored in line with the threat of deer.

Continuous cover techniques will not be suitable where it is not intended to perpetuate the existing standing crop type or where conditions will not allow for regeneration to become established i.e. where there is no suitable parent crop seed source or high deer grazing and browsing. As a result, a system of clear felling and replanting will be considered once crops have been thinned out to a final spacing.

GENERAL PRINCIPLES: Silvicultural Practice

Thinning

A programme of frequent, light selective thinning will be implemented across the Estate in order to promote the development of specimen trees, while minimising the risk of windthrow from opening up the canopy suddenly.

Thinning will be undertaken on a cycle of five or 10 years (this would total approximately 80 ha requiring thinning on an annual basis). Thinning will concentrate on the removal of suppressed or deteriorating trees and will favour the retention of well-rooted, dominant trees with deep crowns and tapered stems.

Thinning will look to increase the light levels reaching the forest floor and as a result increase the sub and understorey to provide improved habitat for roosting and nesting birds. It will aim to remove diseased trees as a priority.

This will be the main silvicultural tool in the short to medium term for most woodland. It is proposed that thinning in broadleaf compartments is undertaken through motor manual chainsaw and specialist harvesting machines will be utilised in conifer plantations.

Group felling and replanting

Group felling will be undertaken to create gaps for replanting or open up over regeneration. Small groups of trees will be felled across the Estate, concentrating on areas where an existing weakness in the canopy exists or where trees have reached the end of their useful life expectancy. Groups will also be formed in order to replant species such as Oak (*Quercus sp*) which do not naturally regenerate prolifically, so as to diversify the species structure.

Woodland with a high percentage of Ash will be selectively group felled to restructure species composition. This will be targeted on diseased and dying trees in order to maximise the chances of the survival of resistant trees. A quantity of deadwood will be retained.

Clear felling and replanting

Although it is intended to manage the majority of woodlands on a continuous cover basis, the intention is to remove conifers and reinstate broadleaved woodland as a priority. Some of the conifer blocks where the current crop is economically mature or poor quality will require clear felling at the next intervention. Likewise, after the next thinning operation some of the conifer stands will reach maturity within the next 10 years and require clear felling.

A succession of group felling interventions will be used in some conifer compartments in order to maintain shade and humidity whilst restocking is carried out beneath the existing tree cover.

Clear fell operations will be managed delicately with regard to recent and proposed interventions in adjacent compartments and veteran trees. Table 1 below outlines the species that will be selected for replanting on clear fell sites.

Clear fell will also be utilised in the wooded pasture common land areas to create new open areas, glades and rides.

Table 1: Proposed Replanting Species

Major Tree Species	Minor tree species	Woody Shrub Species
English Oak Sweet Chestnut Sycamore Wild Cherry Hornbeam Wild Service Tree Silver Birch Small Leaved Lime Beech Sycamore	Aspen Rowan Crab Apple Wych Elm	Hazel Hawthorn Blackthorn Holly Sallow Guelder rose Wild privet Spindle Wayfaring tree

Coppicing

A small number of compartments on the Estate are currently actively managed in a coppice rotation. However, coppice management will be re-introduced in some of the compartments where historic coppice management is evident or known to have taken place historically. The length of rotation will vary depending on the coppice species however, protection of recently coppiced stools (1–5 years post coppicing) will be required in order for the crop to regenerate.

VETERAN TREES

Veteran trees and saproxylic invertebrates are important features of the woodland and the retention of deadwood and decaying trees is a vital part of the management process. Halo thinning of ancient and veteran trees is a priority, as is the identification and retention of the next generation of veteran trees.

With formerly open grown veteran trees the intention is to gradually increase light levels to a point where the sun is able to reach the trunk to promote lower crown growth and to benefit saproxylic invertebrates.

RIDES, GLADES AND OPEN SPACE

Ancient woodland compartments will be managed as high forest. Rides will be widened to create a graduated woodland edge with the herbaceous and shrub zones managed rotationally. On the wooded commons additional scallops and glades will be created to increase open space habitats and restore wood pasture features and restoration of historic Parkland features.

INVENTORY AND PLAN OF OPERATIONS

The Inventory and Plan of Operations spreadsheet lists the compartments which require thinning, group fells (or regeneration fells) and clear fells together with the restock species (felling and restock sheet). It also lists the year in which the operation should take place (work programme sheet). For the purpose of this management plan, these are viewed as target years and the allocation of Year 1 to an operation/intervention should be interpreted as Priority 1, Year 2 as Priority 2 and so on. This is available for inspection at the Visitor Centre. The planned works are also detailed on the accompanying map. Please note that it is customary to include significantly more works in the plan than will probably be carried out due to resource and time constraints. It is therefore reasonable to assume that the lower the priority rating of the work, the less likely it is to be carried out within this plan period.

For some compartments, such as where halo thinning operations are a priority, repeated small scale interventions may be necessary. Individual veteran trees have their own management prescriptions and yearly work plans.

It is the intention that contractors will be utilised where there are appropriately large scale works such as blocks of conifer removal or ride widening, and the in-house Estate forestry staff will undertake more detailed work such as halo thinning and group felling operations.