Hylands Estate
Woodland Management Plan

Parks Services
Chelmsford City Council

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Hylands Estate, Chelmsford
Woodland Management Plan

Contents Page

1.0 Background Information

This Woodland Management Plan forms part of the Hylands Estate Management and Maintenance Plan (MMP). Its purpose is to provide a long-term strategy for the woods on the Estate to maximise their potential for biodiversity, recreation and amenity as well as marketing wood and timber products where appropriate.

The plan allows for the woods to meet the requirements of the UK Woodland Assurance Standard, thereby enabling the proposed works to qualify for Forestry Commission grants. Grants have already been received to help fund a proportion of the works detailed here. It is necessary to continue to find additional funds to supplement the grant aid; this plan can then be used as a bidding tool for this.

Ownership	Chelmsford City Council
Total size of Hylands Park	232ha (574 acres)
Total woodland on Estate	54.5ha (135.5 acres)

1.1.1 Designations

- Local Wildlife Site (designated 2005)
- Grade II English Heritage Register of Parks and Gardens of Special Historic Interest
- Metropolitan Green Belt
- Public Open Space

1.1.2 Management Responsibilities

The management and development of Hylands Estate is the overall responsibility of the Head of Parks and Heritage Services. The day-to-day management is the responsibility of the Hylands Estate Manager with technical advice provided by the Arboriculture and Conservation Officer and the Biodiversity Advisor.

1.1.3 Public Access

The whole of the Estate is open to the public except for the depot area in Home Farm, Flint Cottage and the old Kitchen Garden. Chelmsford City Council's Centenary Walk follows a permissive path running through the shelterbelts from the Writtle entrance through to the south-eastern corner of the park adjacent to the A414. The main woodland paths run through South Wood, Writtle Belt and Tower Belt; most of the remaining woodlands have little or no direct access.

The Estate hosts a variety of events during the course of the year. The summer V Festival alone attracts 100,000 plus visitors. For major events access to the

woodland belts is restricted. In recent years work has been undertaken to establish a path network through the main woodland plantations mainly to deter people from disturbing wildlife and causing undue damage to the woodland floor.

1.1.4 Description of the woodlands in the landscape

The woodlands of Hylands Park form a significant landscape feature due to their scale, proximity to the Park boundaries and the site topography. They are particularly important due to their close proximity to the urban centre of the town.

Within the site the woodland belts help to screen the major roads and other land uses that bound the Park, except to the north where there are views in and out of the Park.

1.2 History of Woodland Management

It is believed that most of the Hylands Estate lay within the boundary of the Royal Forest of Writtle during the medieval period. A perambulation of the boundaries made in 1358 makes reference to South Wood helping to confirm that it is ancient (Hanson 2004). The Estate lies to the north east of the Writtle Forest Ancient Landscape area. As a result the area between Ingatestone and Writtle contains a relatively high percentage of woodland cover. Hyland's ancient woods together with the "wood pasture" in parts of the Park form a continuation of this landscape.

South Wood, Lightfoot Spring, Writtle Wood, Tower Belt and parts of Lower Belt are all ancient.

Writtle Belt and several plantations appear to date from the 19th Century. These appear to have had little regular management.

In the 1930s London Road was made into a dual carriageway which resulted in the moving of the eastern boundary and the loss of most of the tree belts (some survive on the London Road's central reservation). New blocks of trees were planted beside the eastern boundary in the 1970s. In addition several smaller blocks were planted on the western side of the park in 1978.

Other than some coppicing in South Wood carried out in 1979/80 there was no regular woodland management until 2011 when a small coppice compartment was cut in South Wood following the woods being entered into the English Woodland Grant Scheme. Regular coppicing has resumed in South Wood and Tower Belt and thinning carried out in several of the plantations. Appendix 1 provides details of the works undertaken between 2006 and 2014.

1.2.1 Associated Habitats

The whole Estate was declared a Local Wildlife Site in the 2005 Chelmsford Habitat Survey. This recognises the importance of the mosaic of habitats within the site. These include areas of species rich grassland, veteran trees, ponds and the River Wid. There are 11 existing ponds within woodlands as well as temporary ponds, which provide additional specialist habitats.

In considering the needs for woodland management it is necessary to consider the potential impact of the proposals on the other habitats.

2.0 Woodland Information

The underlying drift geology for most of the park is Boulder Clay with the glacial drift deposit, Older Head, found primarily along the eastern boundary. The soils are therefore mildly alkaline or neutral, and this is reflected in the presence of species such as ramsoms and early purple orchid. There is also more ash, field maple and hazel than is common in surrounding woods. The topography is gently rolling with a shallow valley being associated with the River Wid which runs through a short section of the site.

2.1 Descriptions of Woodland Blocks (See Plan 1 & 2)

All of the woods are being monitored for evidence of Chalara fraxinea affecting ash trees on the site. No signs have been observed by April 2014.

2.1.1 South Wood

South Wood is the largest ancient woodland on the estate at just over 30 acres. Unlike most of the ancient woodlands in the surrounding area it does not comprise solely of hornbeam coppice with oak standards. Prior to coppicing recommencing in 2011 the last coppicing work was carried out in 1979/80 in Compartments D and F. Prior to then there had been little active management for decades. This has resulted in areas of hornbeam and oak high forest cover, where most of the hornbeams have become single stemmed, developing principally in the south western part of the wood. Where this occurs it leads to limited ground flora, dominated by bramble. Where there are breaks in the canopy there are patches of species such as bluebell.

In the past there is likely to have been significant areas of elm coppice, particularly close to the western boundary. Following the losses caused by Dutch Elm Disease some of these areas were replanted with ash and a variety of other species although there has been plenty of natural regeneration.

In wetter areas there is hazel and ash coppice, most of which needs of re-coppicing to ensure its survival. Sycamore is locally very common with several mature standards and large coppice stools as well as many young saplings.

There is a rich assortment of woodland ground flora species. In addition to bluebell, ramsoms, dog's mercury, primrose, wood speedwell and pendulous sedge, there are large patches of Early Purple Orchid. These appear to occur where the canopy is less dense. Compartment A where there is a large number of orchid spikes, is secondary woodland with a lot of hazel coppice, while in Compartment E there has been some tree planting in the past. It is considered that this area has been colonised from the adjoining ancient woodland area as the conditions are more suitable.

There are three small ponds within the wood, all of which are in need of management, as they are heavily silted and shaded.

Since 2010 work has been undertaken to improve the path network through South Wood which was confusing and poorly maintained. The primary routes have been identified and management has focussed on these. New bridges and culverts have been installed and surfacing carried out in the wettest sections. Further surfacing, waymarking and vegetation management are required to bring the path network to an appropriate standard.

2.1.2 South Wood Scrubs

This is an area of secondary woodland that is separated from South Wood by an un-surfaced track. It extends into the species rich grassland and large standard oaks. The section closest to South Wood is more open with some hawthorn scrub and young sycamore beginning to establish. In the eastern block there are some larger oak and hornbeam that have been incorporated as the hawthorns have spread. Many of the hawthorns are getting quite large, and other species such as ash have begun to establish. There is a large block of aspen by the northern boundary. On the eastern edge there is a dense section of small trees including crab apple and scrub including dog rose.

2.1.3 Writtle Belt

This shaw extends for just over 1 km northwards from South Wood to Writtle Gate. It is between 40m and 60m wide. Its composition varies significantly along its length. There are areas of mature large-leaved lime, younger blocks of ash with Scots pine, a block of sycamore and other younger planted areas as well as a section with mature oaks and good natural regeneration. There are small patches of dog's mercury, pendulous sedge and some bluebell but not in significant numbers. These may be spreading into the wood from adjoining old hedgerows. Much of the ground flora however is dominated by bramble, cow

parsley, nettles and ivy. Some ornamental species such as box have established in some areas.

There are two potential ponds that could be restored, in compartments B & E.

The main permissive walk through the woods runs from the Writtle Gate entrance to South Wood. Where it becomes more overgrown and uneven at the northern end, people have created a route onto the adjoining field and walk up the headland. Surfacing works have reduced this problem.

2.1.4 Tower Belt

Immediately south of South Wood, this shaw comprises mainly oak standards with hornbeam coppice. There are a few sweet chestnut standards and elm coppice, but little under-storey or natural regeneration, which limits the amount of available cover. The ground flora is primarily bramble and honeysuckle with large amounts of bare ground due to the dense canopy cover. There are small patches of red campion and other species where there is more light. This appears to be ancient woodland that is typical of the area. There are three veteran hornbeam pollards on the north-west boundary.

At the southern end of this compartment is a pond on the edge of the wood. It has steep sides and is heavily shaded. There is little bank vegetation and no emergent vegetation. The water is very turbid and the bottom of the pond is covered with leaves. There were some pond skaters on the pond but little evidence of other creatures using it.

To the south of the pond the character alters completely with the species composition being dominated by elm and field maple. Most of this is young and dense. Spurge-laurel is frequent in this area.

2.1.5 Lower Belt

The southwest corner of the site contains an area of wood that is approximately 1.2ha. It comprises large oak and ash standards with a mix of hornbeam, elm, field maple and hawthorn. This part of the park is relatively undisturbed. There is a large ditch running through this section which further limits access. Beyond this is an area of sedge with large willows and ash around the perimeter.

The main belt of trees is relatively narrow, being between 10m and 25m wide. It follows a deep stream that forms the Margaretting parish boundary. There are some old hornbeam pollards along the stream bank, which once marked this boundary. Part of this section is ancient, containing hornbeam, oak, field maple and hazel; however a number of species have been planted such as large leaved lime and horse chestnut, some of which are now very large. The ground flora is

good in parts with ramsoms, lesser celandine, red campion, bluebell and pendulous sedge.

The Centenary Walk is way marked through Lower Belt; however most people walk outside the woodland as it has become partially obstructed with vegetation and fallen trees, which forces walkers onto uneven ground close to a steep drop into the stream.

For a number of years a strip of grassland up to 60m wide has been left uncut on the north side of this belt. Trees and shrubs are becoming established and the aim is to allow the natural regeneration to develop as woodland.

2.1.6 Writtle Wood

There are three defined areas within this wood. The southern half comprises over-mature hornbeam coppice with oak standards. There are two old hornbeam stubs on the perimeter. The dense canopy suppresses the ground flora and natural regeneration. There has been some planting in the past with beech, lime and laburnum and snowberry present.

The central section contains elm suckers with establishing sycamore. There are also patches of hazel and hawthorn. There is an open glade where ash is beginning to establish. There is a large amount of rosebay willowherb in this part.

Close to the stream on the northern boundary there are several large sycamore, and young horse chestnut. The ground flora contains a good assortment of woodland species including dog's mercury, bluebell, pendulous sedge, wood avens and enchanter's nightshade.

2.1.7 Pigeon Plantation

This small plantation contains some large oak, lime and horse chestnut standards; however most of it comprises densely spaced ash of approximately 30 years. Most of these trees are little more than 1m apart. Some thinning has been carried out although more work is required. There is limited ground flora present, although there are a few clumps of pendulous sedge.

Along the south-western boundary there is a large pond which is heavily shaded.

2.1.8 Rook Plantation

This small plantation is situated close to Hylands House and appears to be slightly raised. Mature trees, predominately oaks, are situated around the perimeter; however other than a couple situated inside the wood, it largely comprises of young sycamore and a few ash.

2.1.9 Oak Plantation

This wood has a number of old oaks and Scot's pine on the boundary but appears to have been replanted approximately 30 years ago and now requires thinning.

2.1.10 Lightfoot Spring

This small ancient woodland is bounded by a remnant ditch and bank. The canopy is dominated by large oak standards, with some hornbeam and lime. Most of the remaining large hornbeam coppice stools were recoppiced in 2012. There are several ancient woodland indicator species present, including bluebell, pendulous sedge, primrose and large patches of ramsoms. There is also a small wild service tree close to the southern boundary.

Along the south eastern boundary there is a small spring. There is a large area of pendulous sedge and some large specimen trees in this area.

There is a significant amount of natural regeneration mostly comprising hornbeam, oak and ash. There are also some planted beech and birch.

2.1.11 Lightfoot Plantation

Immediately to the west of Lightfoot Spring this plantation dates from the 1970s. It primarily comprises of ash and oak at approximately 3m spacing and so the canopy is only just beginning to close. There is a limited ground flora however there are a large number of ash seedlings.

2.1.12 Pond Plantation

A pond runs through most of this plantation. It is less shaded than most of the other woodland ponds and has a good amount of bankside vegetation. At both the northern and southern ends there is dense self-sown oak and ash with grey poplar at the northern end and some larger oak and lime in central area.

2.1.13 London Road Belt

This comprises a number of blocks of young woodland which run most of the length of the Park's eastern boundary. These comprise oak, ash, hawthorn, horse chestnut and Scot's pine. The ground flora comprises mainly cow parsley, nettles, brambles and cleavers. These blocks are approximately 30 - 40m wide. There are some older trees primarily on a bank around the kitchen garden.

As part of the works to restore the Repton landscape additional planting was carried out in 2005 between the blocks north of the London Road entrance to create a more continuous belt.

This belt provides an important screen the busy A414 London Road.

2.1.14 Ice-house Plantation

This wood is distinct from the others in the Estate as it contains several yew trees. It also has mature sycamore, large oaks and lime, elm suckers, hazel and hawthorn. There are also a couple of hybrid poplars.

Its ground flora is more interesting than many of the small woods with pendulous sedge, wood speedwell, wood avens and red campion and germander speedwell. There is a large pond in the southern part of the wood and a marshy, overgrown pond on the western boundary. There are the remains of an icehouse in the centre of the wood.

2.1.15 Swan Pond Plantation

Swan pond is a large area of open water with a few alders on two islands, as well as the banks. The wooded area is situated to the north and west of the pond. It currently contains a number of open areas together with stands of young elm and it is likely that many of trees were lost as a result of Dutch Elm disease. There are young ash, oak and lime as well as hawthorn establishing in most of the site. The ground flora is dominated by competitive species such as nettle, bramble, cleavers and some hemlock, although there are small quantities of dog's mercury, red campion and bluebells.

2.1.16 Writtle Bypass Wood

This small wood lays adjacent to the River Wid immediately south of the A414 road bridge. It contains a large pond. The eastern half of the wood contains large amounts of dead elm and young suckers. Within this area ash is beginning to establish. There are also a number of horse chestnuts including some large specimens on the boundary. The ground flora is dominated by nettle, cow parsley and cleavers with some red campion.

2.1.17 Planted blocks

There are seven small plantations that were planted in about 1978. These have a similar composition of oak, ash, beech, hornbeam and some horse chestnut, and hawthorn. In PB2 there are Lombardy poplars, whilst in PB3 the section

north of the pond is primarily hybrid poplar. These were all planted at approximately 3m spacing. The canopies have begun to close, although some trees, particularly the oak, have poor form due to the wide spaced planting.

The ground flora was managed by mowing, which was stopped in 2005, allowing some natural regeneration, primarily of hawthorn and ash. The ground flora is predominately grass, nettles and bramble.

2.2 Significant hazards, constraints and threats

2.2.1 Constraints

The fact that the whole estate is open to the public requires that safety must be a high priority. Standing deadwood is not left close to paths.

The site contains a number of protected species; their particular habitat requirements need to be considered when planning management work.

It has been necessary to use heavy horses to undertake the timber extraction to avoid damage to the woodlands. Careful management has ensured that there have not been any complaints by park users to the woodland management.

At times when open air events take part in the park access to the woodland by the public is restricted as much as possible to protect the woodlands as a sanctuary to wildlife and to mitigate potential damage to the woodland floor from over use.

2.2.2 Pests

The presence of deer on site means that newly coppiced stools need to be protected from browsing. This is achieved by piling brash over the stools.

2.3 Evaluation

The woodlands are an integral part of the Park comprising nearly a 25% of its area. To date 59 Red Data Book species and 14 UK Biodiversity Action Plan species have been recorded (Hanson 2004) together with a rich selection of plants and animals. The woodlands provide a near continuous belt around three sides of the perimeter with the smaller blocks, together with the veteran trees, providing stepping-stones across the centre of the site. They link areas of species rich grassland, ponds, streams and ditches. Improved grassland management within the wider park is strengthening these habitat links.

There is already a policy to increase the amount of deadwood that is available, both fallen and standing. It is important to continue this, as the site has a significant assemblage of deadwood invertebrates. The past practice of mowing under the plantations has now stopped and in addition a buffer of uncut grass is maintained around the perimeter of most of the woods.

The woodland of the Estate lends much to the character of the Park. They help to screen it from the adjoining land uses, and to divide it into smaller units where people can feel that they can get away from others.

There is a very marked difference in character of the various woodland blocks, with some relatively pure stands of ancient semi-natural woodland, but most containing at least some introduced species, including broad leaved lime, Scots pine, and horse chestnut. It is important not to be too purist about the species composition as some of these species add to the character of the parkland nature of the site and can provide a value additional nectar source. There are however some, such as the hybrid poplar and Lombardy poplar that are inappropriate to the site's character as well as having limited ecological value. In some case native species are also not appropriate for the locations where they have been planted in the past, e.g. beech planted in ancient hornbeam coppice

Early evidence shows that the reintroduction of coppicing is working with good levels of regrowth in most areas and a greater diversity in the ground flora.

South Wood contains areas which are dominated by sycamore. Some of these are mature and some have been coppiced in the past. Where appropriate sycamore should be removed from those compartments where there are no mature specimens to stop it spreading further. Where there are small groups of larger specimens these should be felled and the stumps treated to prevent them re-establishing. It may be considered appropriate to re-coppice existing sycamore coppice to prevent it reaching a size where they can produce seed.

Some sections of the site, such as the southwest corner of the estate, do not require any active management at present. These areas can be left to develop naturally as non-intervention woodland. Other areas, primarily the plantations, require thinning to favour the better specimens and to create a better age structure. Since the mowing has ceased some new natural regeneration has begun to establish.

The main recreational use is by walkers in the woods on the western and southern perimeters. Mountain bikers and horse riders are not permitted due to the conflicts with other users and damage to habitat that occurs. Most of the smaller woodlands have no direct access through them, but they contribute to the overall character and visitor experience.

Recent path management is enhancing the quality of the routes and appears to be leading to an increase in visitors to the woods.

3.0 Long Term Vision & Objectives

3.1 Long Term Vision

As woodland management is a long-term process it is necessary to have a clear direction for management for at least 20 years.

The primary aim of management of the woods on the Hylands Estate is to ensure their long term survival by achieving sustainable management which also benefits biodiversity and increases visitor enjoyment.

This will be achieved by reinstating the coppice regime in the ancient woods and thinning works in the plantations.

The production of timber and wood products is being promoted however it will not be at a scale necessary to make the woodlands self-sufficient financially.

3.2 Management Objectives

These management objectives have been developed taking account of those objectives set out in the MMP 7.9.2 “Woodland and Standard Trees”, which look particularly at protecting and enhancing the biodiversity of the woodlands.

MMP objective 7 – maintain and monitor all trees known to contain confirmed bat roosts or bat boxes

It is vital to ensure that management works do not have an adverse impact on bats or other protected species. Assessments are carried out prior to work commencing to identify potential roost sites. (See 4.2 below)

3.2.1 Historic landscape

Key objective - to maintain the mix of ancient woodlands and historic parkland plantations and provide interpretation to promote their cultural significance

(A) MMP Sub-Objective – Thinning and reducing competition on ancient trees

(B) Sub-objective – consider opportunities for carrying out charcoal making and the production of other woodland products as a means of increasing understanding of their past uses.

Rationale
The ecological importance of ancient woodland is well established; however they also have a cultural significance that should be protected and explained. Activities such as charcoal making and pole-lathing could be carried out as public activities. (See 4.3)

The site also contains several 19th Century plantations that contribute greatly to the historical value of the site. These appear to have lost trees in the past, probably due to Dutch Elm disease. It is necessary to ensure that they are managed to retain their character and long-term survival (See 4.1.2)

In some of the plantations ancient trees have been incorporated. Often planting has occurred under the canopy, which has a detrimental impact on these trees. It is necessary to thin these young trees as a priority.

3.2.2 Woodland management

Overall objective - To ensure the long term survival of all of the woods in the Park, by adopting appropriate silvicultural practices in keeping with the other objectives.

(A) MMP Sub-objective - Retention of windblown deadwood

(B) MMP Objective 5 – Increase diversity and improve structure of woodland ground flora and understorey

(C) Sub-objective – control the spread of sycamore throughout woodlands

Rationale
There are four key woodland types on the Estate, ancient woodland, other semi-natural woodland, historic plantations and recent plantations. These require specific management operations to ensure their long-term survival. These are set out in detail in 4.1.1 – 4.1.3. It is necessary to ensure that an adequate level of deadwood, particularly standing deadwood, is retained during management. Sycamore is a highly competitive species that can outgrow many native species. It appears to have been established for a long time in South Wood with many mature specimens; however it should not be allowed to spread, particularly when operations such as coppicing and selective felling are creating more open areas.

3.2.3 Biodiversity

Key objective – to manage woodlands to maximise their biodiversity value, maintaining veteran specimens, undertaking coppicing where appropriate, and improving associated habitats such as ponds and ditches.

(A) MMP Sub-objective – Introduce rotational coppice management of the woodland understorey

Rationale
Coppicing has been carried out since 2011 and there is generally good regrowth occurring in these areas.(See 4.1.1)

(B) Sub-objective – undertake a programme of restoration of woodland ponds, including temporary ponds

(C) Sub-objective – Manage appropriate paths in South Wood to develop as rides

Rationale
Other habitats provide additional ecological niches within the woodland. There are a number of small ponds that would benefit from management. Rides will be developed along key paths within South Wood and Writtle Belt.

(D) MMP Sub-objective – Identify suitable areas for and introduce glades into woodland areas

The use of selective felling in the high forest areas of South Wood (Comp E) would result in glades. These would provide areas for regeneration over time. As young trees become established other areas should be cleared. The coppicing is also creating rotational glade areas.

3.2.4 Recreation
Key objective - to improve the quality of routes through the key woodlands, and to identify a path network in South Wood that are welcoming, easy to follow and safe.

Rationale
Path improvements are leading to increased visitor numbers. Further works are required to enhance other key routes and to improve waymarking. Ongoing management is important to prevent damage to the ground flora. (See 4.4)

4.0 Management Rationale

4.1.1 Silvicultural systems

Appendix 1 provides details of management works undertaken between 2006 and 2014. Work principally focussed on re-establishing the coppice cycle.

The coppiced wood is primarily being sold as firewood. Larger timber is being processed on site and used to produce wood to be used on the estate. The oak is of variable quality, with some containing significant quantities of rot. Some of the larger specimens of sycamore could be of some value.

Extraction of the timber from within the woods is being undertaken by heavy horses to minimise the damage to the tracks and ground flora.

Further markets, such as woodchip biomass and small-scale charcoal production, are being monitored.

4.1.2 Restructuring of plantations

The plantations on the estate primarily date either from the 19th Century or the 1970s. A number of the older plantations appear to have suffered from the loss of elm in the past. This has either resulted in dense elm suckers, open glades or the establishment of sycamore and ash. Most of the plantations require thinning.

The more recent plantations comprise even aged trees. The past practice of mowing between the trees prevented the establishment of any saplings or understorey. The aim is to manage these areas to increase their age structure and to promote a shrub layer to enhance their visual and biodiversity value. This will be achieved through carrying out thinning of the existing trees. Some of the plantations also contain non-woodland species such as Lombardy or hybrid poplars and horse chestnut. These should be removed to favour the native woodland species.

4.1.3 Establishment, restocking and regeneration

Currently woodlands cover nearly a quarter of the park. As a result there is limited potential for additional woodland to be established. The only area where new woodland is being allowed to develop is adjacent to Lower Belt where natural regeneration is being encouraged to create a wider woodland belt.

Planting is not advocated in any of the woods as there is a significant seed bank within the site. Where conditions are appropriate there is a good level of natural regeneration.

Sycamore is establishing in some woods; however in most cases these are still relatively small. The removal of some of the mature sycamores will need to be a part of the ongoing site management to help remove the seed trees.

It appears that in the past there were several areas of elm woodland. The impact of Dutch Elm disease has been to create dense areas of young trees, or allow species such as ash and sycamore to establish. It may be appropriate to coppice some of the elm suckers to retain the species in the woods.

4.2 Protected and BAP Species

There are records of a number of protected species and national or county Biodiversity Action Plan species in the Park. It is vital when considering potential

felling works that the trees are surveyed to ensure that they do not contain bat roosts. All felling will normally occur in the winter outside bird nesting season.

Dormice have been recorded in the woods on the west of the estate and in the south east corner of Lower Belt in 2002. Bats, otter and great crested newts are also present. These species is protected by the Habitats Regulations. It is important to ensure that the estate is appropriately managed for these species.

4.3 Education and interpretation

The presence of a mix of ancient woodland with plantations of various ages, as well as the veteran parkland trees, grasslands and ponds provide an excellent teaching resource, enabling pupils to learn about the site's ecology and heritage. The Hylands Education Officer is making active use of the woods, including purpose built facilities within Home Wood.

Interpretation of the biodiversity and cultural significance should be undertaken to increase visitors' understanding of the site. A woodlands leaflet and interpretation panels are being produced. Practical demonstrations such as charcoal making also promote the need for active management of woodlands.

The provision of activities forms part of MMP objective 7.9.7, and link into the Hylands Estate education and interpretation strategy.

4.4 Public Access/Recreation

Since 2010 there has been a focus on improving the quality of the path network within South Wood, Writtle Belt and Tower Belt to increase public enjoyment of the woods and also to reduce damage to ground flora particularly in wetter parts of the woods. Works have included improved surfacing in the wetter sections and provision of new bridges and culverts over the larger ditches and streams.

Additional works are required to improve the drainage and surface other paths in South Wood. Woodland rides management is being developed on the main path networks to allow more light in to help dry to the paths and to increase their ecological value.

At times when staged events are occurring in the park access to the wooded areas are restricted to avoid undue damage.

5.0 Management Operations

5.1 Resources

Since 2011 all of the woods and plantations in the Park have been entered into a Forestry Commission English Woodland Grant Scheme. This provides some

funding towards the management costs of reinstating the coppice regime, undertaking thinning, improving the path network and interpretation.

In 2011 the Council contracted Hawthorn Heavy Horses to undertake most of the woodland management.

The Parks and Heritage Service is committed to engaging local people as volunteers to help manage the estate. The Hylands Estate Volunteers Group focuses on helping with smaller scale woodland management works and improving access through the woods.

The Action Plan *(Section 8)* sets out the management operations that are required in each woodland compartment, together with the financial summary at Section 9.

6.0 Monitoring

The delivery of the woodland management plan is monitored by working group comprising the Hylands Estate Manager, the Arboriculture and Conservation Officer, Hylands Park Chargehand, the volunteer coordinator, the biodiversity advisor and representatives of Hawthorn Heavy Horses. This group meets at least twice a year to agree the winter work programme and review other management issues.

7.0 Glossary

Age Structure
The age structure of woodland is determined by its origin and management. A new plantation will normally contain trees of a broadly similar age where as an older site will normally have a mix of older and younger trees. This mix is important for ensuring the long-term survival of the wood and also improves the variety of habitat with the mix of large trees and a shrub layer.

Ancient Woodland
Woodland that is known to have been in existence since before 1600AD; (This is the earliest date of estate maps). Do to this continuity they normally have particularly diverse flora and invertebrate populations, as well as a special cultural significance

Ancient Woodland Indicator
Indicators are normally flora, as they are easy to identify, that naturally exist only in ancient woodland sites due to their inability to propagate via seed. As a result they are slow to move into secondary woodland. Examples include bluebell, dog's mercury, wood anemone, wild service tree and pendulous sedge. Ideally there should be several such species present as some, such as bluebell or pendulous sedge can be planted.

Coppice
Underwood trees which are cut to near ground level every few years, normally on a regular cycle, and which grow again from the stool. This regular management results in areas of open ground for the first couple of years, then dense scrub before developing into multi-stemmed trees.

Natural regeneration
Where there are suitable conditions and species in the vicinity most trees will produce seed or suckers (e.g. elm, aspen and cherry) that can develop into mature specimens. This is preferable to planting in woodlands where appropriate as it ensures that the local genetic provenance is maintained and can result in a better age structure. It may be necessary to remove species such as sycamore that establish more readily than most native species.

Pollard
A tree which is cut between 8 – 12 feet above ground level ground level and allowed to grow again to produce successive crops of wood (usually used in wood pasture to prevent damage from grazing animals)

Ride
A path/ route cut though the wood. Can have particular ecological significance if management results in open ground and scrub as this extends the "woodland edge" which is important for many animals.

Secondary Woodland
Woodland that has been planted or has re-grown on land that had been cleared of trees in the past. Depending on its proximity to ancient woodland and to how old it is, it usually does not support such a rich flora or fauna and ancient semi-natural woodland.

Selective Felling
The felling of small groups of trees that can be used for example to create sufficient space in the canopy to encourage natural regeneration

Stool
The permanent base of a coppice tree, which as a result can be several hundred years old

Stub
Tree intermediate between a stool and a pollard – often used to mark boundaries in medieval times

Thinning
The removal of a proportion of trees in a wood to allow the remaining trees more space to grow. It is an opportunity to select the better specimens or preferred

species and to favour their development. If it is not carried out there is some self-thinning whereby smaller trees die as they do not receive sufficient light; however the remaining trees it be tall, thin specimens of poor quality.

Veteran Tree
A tree which because of its great age, size or condition is of exceptional value culturally, in the landscape or for wildlife

8.0 Woodland Management - Action Plan 2014 – 2019

The main focus of the management will be to continue with the coppicing and thinning operations agreed in the Woodland Grant Scheme and to complete the path enhancement works.

Due to the restrictions on funds that are available it is necessary to prioritise works on the main woods and plantations initially.

Action	Woodland Block	Task/prescription	When	Priority	Equipment and personnel required	Review
1	South Wood	Continue to undertake agreed coppice plan	2014-2019	High	HHH/ volunteers	
2		Ride creation	2014-2016	High	HHH/ Contractors/ Volunteers	
3		Ride management	2016-2019	High	Parks	
4		Complete path surfacing	2014-2016	High	Contractors / volunteers	
5		Thinning in high forest areas	2017	Medium	Contractors/ HHH	
6		Produce interpretive panels about woodland management	2014	High	Parks	
7	Tower Belt	Continue to undertake agreed coppice plan	2014-2019	High	HHH/ volunteers	
8		Thinning in non-coppice areas	2015-2019	Medium	Volunteers/ contractors/ HHH	
9	Writtle Belt	Undertake thinning works as per EWGS	2014-2019	High	HHH/ Contractors/ Volunteers	
10	Writtle Wood	Remove non-native species	2014	High	Volunteers	
11		Coppice hornbeam	2016-2019	Medium	HHH	
12	Lightfoot Spring	Remove beech and coppice new growth	2014	Medium	volunteers	
13	Lightfoot Plantation	Undertake additional 30% thinning	2016	Medium	HHH/ Contractors	
14	Pigeon Plantation	Thin ash by 50%	2015	High	Contractors	
15	Rook Plantation	Remove sycamores around ash and other species to allow to develop	2015	High	Volunteers	
16	Oak Plantation	Thin trees under old oaks on boundary	2016	Medium	Contractors	
17	Ice-house plantation	Remove poplars	2015	Medium	Contractors/HHH	
18	Plantation Blocks 1-8	Continue thinning works	2015-2019	Medium	Contractors/HHH	

Appendix 1 – summary of Woodland Management undertaken 2006-2014

There was a delay in implementing the original management plan; however regular active management began in 2011. Since then work has focussed on South Wood and Tower Belt. Due to the delays in commencing regular management works and restricted resources the thinning works in the plantations were not considered a priority during this period.

Sub-Objective	Action	Woodland Block	Task/prescription	When	Priority	Equipment and personnel required	Review
3.2.3	1	All perimeter woods	Undertake a survey for dormouse, in partnership with Essex Biodiversity Partnership, to establish extent of population. Consider impact of results on work priorities	2007/08	High	Surveyors (support from EBP), Volunteers	Completed None found.
3.2.4	2	South Wood, Writtle Belt, Tower Belt, Lower Belt	Agree path network and seek Woodland Improvement Grant to undertake improvements	2007	High	Contractor (some may be suitable for volunteers)`	Woodland Improvement Grant obtained and most work completed
3.2.3 A	3	South Wood compartment D/F	Coppice hazel, sallow and ash up to 5m either side of the path creating scalloped edges	2007	High	Volunteers/ contractors	Work commenced as part of ride creation
3.2.3 A	4	D	Undertake trial coppice coup	2007	High	Contractors	Completed
3.2.3 A	5	D/F	Assess the success of the coppicing	2008/9	High	Biodiversity Officer	Completed
3.2.3 A	6	D/C	Depending on the successful outcome of coppicing trials coppice next two coups	2009	High	Contractors	Woodland coppice programme developed for EWGS application
	7	A/B	Coppice hazel and remove sycamore	2010	High	Contractors or volunteers	Work commenced
3.2.3 A	8	B/C	Coppice ride up to 5m either side of track creating scalloped edges	2010	High	Contractors	Work commenced
3.2.3 B	9	C	Cut back overhanging trees and dig out pond 1	2008	Medium		Not progressing currently
3.2.3 B	10	E	Cut back overhanging trees and dig out pond 2	2009	Medium		Not progressing currently
3.2.3 D	11	E	Selective felling of up to 5 hornbeam	2008	High	Contractors	Not progressing currently

3.2.3 D	12	E	Selective felling of up to 5 hornbeam	2011	High	Contractors	Not progressing currently
3.2.2	13	B & C	Remove young sycamore	2008	High	volunteers	Work carried out
3.2.3 C	14	C	Undertake trial coppicing of hazel	2009	High	Contractors or volunteers	Work carried out
3.2.2	15	C	Thin planted area by western boundary	2010	High	Volunteers or contractors	Work carried out
3.2.3 A	16	South Wood Scrubs	Coppice third of the hawthorn	2008	Medium	Contractors or volunteers	Not progressing currently
3.2.3 A	17	South Wood Scrubs	Coppice third of the hawthorn	2010	Medium	Contractors or volunteers	Not progressing currently
3.2.2 B	18		Coppice hawthorn etc to the east of the stream ditch	2008	Medium	Volunteers	Not progressing currently
3.2.1	19	Lightfoot Spring	Remove all young beech and planted birch and selectively thin other young trees to favour those specimens that are a particularly significant e.g. oaks and wild service trees	2007	High	Volunteers	Initial clearance undertaken – further work 2014/15
3.2.2	20	Lightfoot Plantation	Thin by 30%	2007	High	Volunteers or contractors	Not done at this time
3.2.2	21	Lightfoot Plantation	Thin by 30%	2011	Medium	Contractors	First thinning carried out
3.2.1	22	Pigeon Plantation	Thin ash by 50%	2007	High	Contractors	First thinning carried out
3.2.1	23	Rook Plantation	Remove sycamores around ash and other species to allow to develop	2008	High	Volunteers	Not priority during this period
3.2.1 A	24	Oak Plantation	Thin trees under old oaks on boundary	2008	Medium	Contractors	Not priority during this period
3.2.2	25		Thin trees in wood by 30%	2009	High	Contractors or volunteers	Not priority during this period
3.2.2	26	Writtle Wood	Remove four mature sycamores each year	2007 - 2011		Contractors	Not priority during this period
3.2.1	27		Remove planted species e.g. beech and laburnum	2007	High	Volunteers	Not priority during this period
	28	Writtle Belt A	Remove young sycamore and coppice hawthorn scrub	2010	Medium	Volunteers	Completed
3.2.2	29	A	Thin planted areas by 30%	2009	Medium	Volunteers	Completed
3.2.3 B	30	A	Excavate pond area and cut back trees to allow in light	2009	High	Contractors	Not priority during this period

3.2.2 C	31	B	Thin sycamore standards by 30% and remove saplings and young trees where they compete with other species	2010	Medium	Contractors	Not priority during this period
3.2.2 C	32	C	Remove sycamore around other species to favour oaks and other regeneration	2008	High	Contractors	First thinning commenced
3.2.2	33	E	Thin regeneration by 30%	2008	High		Not priority during this period
3.2.3 B	34	E	Investigate possibilities for reinstating pond	2007	Medium	Biodiversity Officer	Not priority during this period
3.2.2	35	F	Thin by 30% favouring ash	2008	High		First thinning commenced
3.2.2	36	G	Thin by 50% removing horse chestnut, and favouring ash.	2009	High		First thinning commenced
3.2.3	37	Lower Belt A	Maintain as a non-intervention wood, monitor changes	Ongoing	Medium	Biodiversity Officer	Monitoring confirms no work required currently
3.2.2	38	C & D	Remove sycamores from woodland and regeneration area	2008	Medium	Volunteers/ contractors	Not commenced
3.2.2	39	C	Remove 3 large lime trees	2011	Medium	Contractors	Not priority during this period
3.2.2	40	London Road Belt	Thin by 30%, in approximately 20% of the belt each year. Start at southern end	2007 – 2011	High	Contractors	Not priority during this period
3.2.2	41	Recent plantations PB 1, 2 & 3	Thin by 30% prioritising poor specimens, and horse chestnut and poplars	2007	High	Volunteers	Thinning carried out PB1. 50% poplars removed PB2
3.2.2	42	Recent plantations PB 5 & 7	Thin by 30% prioritising poor specimens, and horse chestnut	2008	High	Volunteers	Not priority during this period
3.2.2	43	Recent plantations PB 8	Thin by 30% prioritising poor specimens, and horse chestnut	2009	High	Volunteers	Not priority during this period
3.2.2	44	Recent plantations PB 4 & 6	Thin by 30% prioritising poor specimens, and horse chestnut	2011	High	Volunteers	Not priority during this period
3.2.1 B 3.2.3	45 46	Tower Belt A	Carry out coppicing of a small coup	2009	High	Contractors	Two compartments have been coppiced
3.2.2	47	Tower Belt B	Carry out 50% thinning of compartment, favouring better	2008	High	Volunteers	Some thinning carried out as part of path improvement

			specimens, removing young horse chestnut from in the wood				work
3.2.2	48	C	Carry out 50% thinning of compartment, favouring better specimens, removing young horse chestnut from in the wood	2011	Medium	Contractors	Not progressed
3.2.2 C	49	Ice-house plantation	Remove 30% sycamore and all hybrid poplar	2009	Medium		Sycamore and laurel clearance has begun.
3.2.1 B 3.2.2	50 51	Generic	Regularly assess markets for firewood, biomass, charcoal and other wood products	Ongoing		Arboricultural Officer	Markets being developed by Hawthorn Heavy Horses. Monitoring of opportunities for biomass