

Site Management Plan

2018 – 2022

Chigwell Row Wood Local Nature Reserve



| | | |
|--------------------|--|----|
| Section 1.0 | General Information | |
| Section 1.1 | Introduction | 1 |
| Section 1.2 | Location | 1 |
| Section 1.3 | Site Description | 1 |
| Section 1.4 | Owners | 2 |
| Section 1.5 | Rights of Access | 2 |
| Section 1.6 | Boundaries | 2 |
| Section 1.7 | Map & Photographic Coverage | 2 |
| Section 1.8 | Services | 2 |
| Section 2.0 | Environmental Information | |
| Section 2.1 | Abiotic Factors | 3 |
| Section 2.2 | Biotic Factors | 3 |
| Section 2.3 | Communities | 4 |
| Section 3.0 | Cultural Information | |
| Section 3.1 | Public Interest | 6 |
| Section 3.2 | Past Management | 6 |
| Section 4.0 | Management Aims and Operations | |
| Section 4.1 | Management Aims | 6 |
| Section 4.2 | Management Operations | 6 |
| Section 4.2.1 | Maintain and Enhance the Biodiversity of the Woodland | 6 |
| Section 4.2.2 | Maintain and Enhance the Grassland and Rides | 7 |
| Section 4.2.3 | Maintain and Enhance the Biodiversity of the Heathland. | 7 |
| Section 4.2.4 | Maintain and Enhance the Biodiversity of the Ditches and Ponds | 7 |
| Section 4.2.5 | Maintain and Enhance the Population of Invertebrates and their Associated Habitats | 8 |
| Section 4.2.6 | Maintain and Improve Access for all the Community and Promote the Educational Value of Chigwell Row Wood | 8 |
| Section 5.0 | Work Schedule | |
| Section 5.1 | Key | 9 |
| Section 5.2 | Work Programme: Five Year Period | 10 |

Section 6.0

APPENDIX I - MAP COVERAGE

| | |
|-------------|--|
| Section 6.1 | Site Boundary |
| Section 6.2 | Management plan compartment map |
| Section 6.3 | Access, major and minor paths |
| Section 6.4 | Chigwell Row Wood ditch maintenance plan |

Section 7.0

APPENDIX II - MANAGEMENT

Section 7.2

Past Management

| | |
|-----------------|---|
| Section 7.2.1 | Past Management Plans |
| Section 7.2.2 | Past Management 2007 - 2011 |
| Section 7.2.3 | Summary of restoration work on veteran pollards |
| Section 7.2.3.1 | Pollarding Phase One – 1991 |
| Section 7.2.3.2 | Pollarding Phase Two - 1997 |
| Section 7.2.3.3 | Pollarding – 1999 Onwards |
| Section 7.2.3.4 | Pollard and Tree Condition Surveys |

Section 7.3

General Management Guidelines

| | |
|---------------|---|
| Section 7.3.1 | Management of the veteran oak pollards |
| Section 7.3.2 | Management of the veteran hornbeam pollards |
| Section 7.3.3 | Management of Heathland |

1.0 General Information

1.1 Introduction

This management plan has outlined a set of proposals for the development of Chigwell Row Wood LNR that will run for 5 years from January 2012.

The management plan will cover a description of the wood, some details about previous management, the aims of management for the future and the operations necessary to enable this.

Central to the successful implementation and development of the management recommendations will be the ability of Countrycare, and Leisure Services to work together to encourage and foster the involvement of the local community.

In the writing of this plan every attempt has been made to keep the language as simple as possible. However, by the nature of the plan, it has been unavoidable to not use specialist terms and definitions.

1.2 Location

Name: Chigwell Row Wood

Area: 15.6 Hectares (38.5 Acres)

Grid Ref: TQ 463 929

Wardens: Epping Forest Countrycare.

County: Essex

District: Epping Forest

Parish: Chigwell

Local Planning Authority:
Epping Forest District Council

Conservation Status: Local Nature Reserve (08/2000)
Local Wildlife Site EP85 & EP86
Tree Preservation Order EPF/41/01

Nature of legal interest: The Chigwell Row Recreation Ground Charity registered no. 301277 of which Epping Forest District Council are the Trustees

1.3 Site Description

Chigwell Row Wood LNR is an urban fringe woodland located on the southern boundary of the Epping Forest District. The wood contains a range of habitats from semi-natural ancient woodland, through to areas of secondary woodland, heath and acid grassland. The woodland is very important for its wealth of veteran trees and dead wood invertebrates, reflecting the historical links as a wood pasture, a remnant of the once much larger Hainault Forest.

The southern half of the wood is characterised by ancient hornbeam pollards and these are particularly abundant in the south-eastern quarter. Throughout this section of the wood the ground layer is floristically poor with the under storey almost entirely absent in the areas where the hornbeam pollards dominate.

Moving northwards through the wood, the density of hornbeam pollards decreases and oak, ash and hornbeam maidens become more prevalent. In contrast with the pollarded areas this area has a thick under storey, comprising holly, hawthorn and field maple with Bramble dominating the ground layer. Within this area 39 veteran oak trees have been recorded.

In the northeast, the woodland grades into secondary woodland. Here birch, aspen and oak have colonised. In the 1860s, this area was heathland and rough pasture with a scattering of oak trees. Today, twenty-eight of these oaks are recorded as veteran trees, but unfortunately only a fragment of the former heathland survives confined to a scallop on the eastern boundary.

1.4 Owners

Epping Forest District Council manages Chigwell Row Wood LNR and the neighbouring recreation fields as trustees. Site management is via the Charity Commission in accordance with the inherited trustee status. Leisure Services have over all responsibility for area. Technical Services, via Epping Forest Countrycare, provide management advice, practical assistance and organise volunteers and events within the LNR.

| | | |
|-----------|--|--|
| Contacts: | Grounds Maintenance Neighbourhoods Directorate Civic Offices, High Street Epping, Essex, CM16 4BZ 01992 560000 | Epping Forest Countrycare Neighbourhoods Directorate Civic Offices, High Street Epping, Essex, CM16 4BZ 01992 564224 |
|-----------|--|--|

1.5 Rights of Access

There is unrestricted public access throughout Chigwell Row Wood. On the woods southern boundary there are 3 gated access points leading from Brockets Way and Latchford Place. There are also a series of entrances on the north and eastern boundaries with the recreation ground.

Throughout the wood there is a rather confusing network of pathways, however a main ride does run north to south through the western half of the wood. Public Footpath (No. 95) runs diagonally through the northeastern corner of the wood and forms part of the long distance walk the Three Forests Way and the more recently created London Outer Orbital Path (LOOP). See Appendix 1 - Map Coverage - Section 6.3 Access, major and minor paths.

In 2005 Countrycare embarked on a project to create a way marked circular trail through Chigwell Row Wood. This was made possible by funding from the Forestry Commission through their woodland improvement scheme. It is hoped this will encourage the public to make better use of the woodland as a whole through a safe and well-maintained trail. The project was completed in the autumn of 2005.

1.6 Boundaries

On its northern and eastern edges the woodland is bordered by the Council managed recreation ground, which itself is bordered by the Lambourne and Romford Roads. Hainault Forest Country Park lies to the east of the Romford Road. The woods western boundary consists of pasture and in the North West corner the housing of Lodge Close. The woods southern boundary of the wood, is also the Epping Forest District boundary, and is defined by housing from Brocket Way, in the London Borough of Redbridge. See Appendix 1 - Map Coverage - Section 6.1 Site Boundary.

1.7 Maps and Photography

The following are available from the Essex County Council Records Office in Chelmsford (ECC) and from Epping Forest District Council, Planning Services, Epping. (EFDC)

| | |
|---------------------|---|
| Maps: | 1775 Manorial Map M.H Beach Esq. (ECC)1 1881 Ordnance Survey Map (ECC) |
| Aerial Photographs: | 1970, 1976, 1985, 1990, 1999, 2000 (EFDC) |
| Slides: | Site/management works 1989 to present (EFDC Countrycare) |

1.8 Services

There are a number of sewerage services that traverse the wood. These include public surface water and public foul water sewers that run north to south from Lodge close to Brockett Way. In addition, there is a second public foul water sewer running along the southern boundary of the wood from the Romford Road to the first main entrance on Brockett Way. See also map in Appendix I - Section 6.4 Services and ditches.

2.0 Environmental Information

2.1 Abiotic Factors

Climate

Hampstead is the nearest Met Office climate station to Chigwell. The averages in the table below are for the climate period: 1981-2010

| Month | Max. temp (°C) | Min. temp (°C) | Days of air frost (days) | Sunshine (hours) | Rainfall (mm) | Days of rainfall >= 1 mm (days) |
|--------|----------------|----------------|--------------------------|------------------|---------------|---------------------------------|
| Jan | 7.1 | 2.0 | 8.6 | 57.5 | 64.7 | 12.0 |
| Feb | 7.4 | 1.7 | 9.5 | 76.4 | 46.6 | 9.7 |
| Mar | 10.5 | 3.5 | 4.0 | 107.1 | 48.9 | 10.2 |
| Apr | 13.3 | 5.0 | 1.5 | 151.6 | 51.5 | 9.9 |
| May | 16.8 | 8.0 | 0.1 | 192.2 | 58.0 | 9.5 |
| Jun | 19.9 | 10.9 | 0.0 | 191.0 | 54.2 | 9.0 |
| Jul | 22.4 | 13.2 | 0.0 | 199.9 | 50.4 | 8.5 |
| Aug | 22.0 | 13.1 | 0.0 | 193.0 | 64.4 | 8.9 |
| Sep | 18.8 | 11.0 | 0.0 | 140.8 | 56.9 | 8.8 |
| Oct | 14.6 | 8.1 | 0.3 | 109.9 | 77.7 | 11.0 |
| Nov | 10.3 | 4.8 | 2.9 | 69.4 | 68.3 | 11.4 |
| Dec | 7.4 | 2.5 | 7.7 | 51.6 | 62.9 | 11.4 |
| Annual | 14.3 | 7.0 | 34.6 | 1540.4 | 704.5 | 120.1 |

<http://www.metoffice.gov.uk/public/weather/climate/u10j9t4ur>

Geology, Soils and Hydrology

Chigwell Row Wood is situated on the south-facing slope of a ridge that runs in a southwest-northeast direction between Hainault and Lambourne End. The River Roding Valley lies further to the north with the smaller River Rom to the east.

The highest points in the wood are on the northern edge, typically around 75 metres. The ground then drops away gradually as you head south through the wood, dropping to a height of around 65 metres on the southern boundary. Three main ditches run through the woodland in a southerly direction.

The solid geology of the area is London Clay. This is capped by the sandy and loamy Claygate Beds. The soils are predominantly clay based, and are typically neutral, heavy and prone to water logging. Analysis of the soils within the wood would be desirable.

2.2 Biotic Factors

See also Appendix III – Section 8.1 Species lists

Flora

Dense shading in much of the wood results in a relatively sparse and poor ground flora. In areas where management has opened up the canopy bramble tends to dominate. The most interesting area floristically is on the eastern edge of the wood with marshy and acidic grassland and heathland.

Fauna

A species list for the fauna is incomplete, further surveys are required to gain a better idea of the species present in the wood. The woodland is generally very good for birds and amphibians are represented by the Common Toad (*Bufo bufo*) and Common Newt (*Titurus vulgaris*). There have also been sightings of Grass Snakes (*Natrix natrix*) in the wood. In the summer of 2002 the Diptera and Coleoptera of the wood were surveyed by Barbara Schulten and John W. Ismay. The sampling methods used were aerial traps, pitfall traps, sweeping, beating and hand collecting. A total of 391 species were recorded, 286 Diptera and 105 Coleoptera with 56 species being of conservation concern. Thirty four percent of those recorded are considered to be dependant as larvae on decaying wood or associated fungi and of these 29% had conservation status or were local. Similar results were found during the moth survey that was carried out in 2004/05. It can be seen that many of the invertebrates in Chigwell Row Wood are dependent on woodland and that past management has led to a sufficient supply of dead wood. However it has been recommended that the flies and beetles would benefit further from an improved adult food source of nectar and pollen. All future management of the wood will be carried out with a strong emphasis on improving the habitat for invertebrates.

Fungi

Between 2002 and 2012 regular fungi surveys were carried out. For the most current list see Appendix III section 8.1.2 Fungi.

2.3 Communities

Hornbeam pollards with occasional oak and ash standards.

A significant section of Chigwell Row Wood appears to be ancient semi-natural woodland and is almost certainly a remnant of the once larger Hainault Forest. Hornbeam (*Carpinus betulus*) pollards characterise the southern half of the site and are particularly abundant in the southeast quarter.

The hornbeam pollards are at least 250 years in age, but many are much older. The last large scale pollarding of Hainault Forest was undertaken between 1850 and 1900. It would therefore seem reasonable to assume that a similar time has elapsed since the pollards in Chigwell Row were last cut. A small area of hornbeams towards the southeast corner of the wood shows evidence of coppice management.

The ground flora and under storey is almost entirely absent underneath the old hornbeam pollards due to the low light levels and deep litter layer. Occasional openings are dominated by dense patches of Bramble (*Rubus sp.*), with Willow Herbs (*Epilobium sp.*), Common Chickweed (*Stellaria media*) and Greater Stitchwort (*Stellaria holostea*) present. The main ride provides opportunities for flowering plants such as Wood Avens (*Geum urbanum*), Garlic Mustard (*Alliaria petiolata*) Lesser Celandine (*Ranunculus ficaria*) and Violets (*Viola sp.*) Larger scale clearance work from 2005 onwards has resulted in many grass filled glades containing Tormentil (*Potentilla erecta*) and a variety of grass species.

Oak, hornbeam and ash maidens, with occasional pollards.

Moving northwards through the wood, the density of pollards decreases, and oak (*Quercus robur*), ash (*Fraxinus excelsior*) and hornbeam maidens become more prevalent. It is likely this area was historically wood-pasture as large veteran oak trees stand amongst recent hornbeam and ash trees. In contrast with the pollarded areas this area has an under storey which is dense in places and dominated by Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*) with occasional Field Maple (*Acer campestre*). Sycamore (*Acer pseudoplatanus*), is also beginning to invade into some areas. The ground layer is generally sparse although in places bramble has taken hold.

Unfortunately, a deliberate fire created the glade towards the western edge of the woodland in 1995. However, the sudden increase in light levels has led to a dense covering of ground flora and natural regeneration. Bramble and great willow herb (*Epilobium hirsutum*) dominate but other species present include rough hawk's-beard (*Crepsis vesicaria*), and enchanters nightshade (*Circaea lutetiana*).

Secondary woodland.

Continuing north-eastward the woodland grades into secondary woodland. Oak, birch (*Betula pendula*), aspen (*Populus tremula*) and sycamore now dominate over the area that was historically heath and rough pasture. This is easily seen when reference is made to the First Edition Ordnance Survey Sheet from 1871. This map clearly shows an area of rough pasture and heath far more considerable than exists today.

Heathland.

The eastern edge of the woodland is interesting for its ground flora. Wetter areas include tufted hair grass (*Deschampsia cespitosa*), conglomerate rush (*Juncus conglomeratus*) and lousewort (*Pedicularis sylvatica*), a rare and decreasing plant for Essex (last recorded 2007 and 2008). All that now remains of a once much larger area of heathland is a small patch contained within a scallop on the eastern boundary of the wood. This area is dominated by a number of Bent-Grasses (*Agrostis*), Tormentil (*Potentilla erecta*), Bird's-foot-trefoil (*Lotus corniculatus*), Slender St. John's Wort (*Hypericum pulchrum*), Heather (*Calluna vulgaris*) and Dwarf Gorse (*Ulex minor*). This area has been continually threatened by encroaching Bramble, Aspen and Oak. Since 2005 much work has taken place in this area including tree felling, scraping of top soil and scrub clearance. The Essex Biodiversity project grant funded machinery for the scraping of top soil, in 2005, over about 25% of the heath. This has been successful with most of the plots covered in young Heather, Gorse and Tormentil.

This has all helped to restore this area to a respectably sized area of Heathland. In 2006 Blackwood Bayne carried out a survey/summary of the restoration work (mainly the scraping of top soil) and produced a report including recommendations for management. See Appendix II Section 7.3.3.

In 2007 the Essex Biodiversity Project funded the removal of all of the mature trees situated on the heath. As a result of much of this work Lousewort is now widespread over most of the heath.

In March 2009 the Essex Biodiversity project funded further scraping of the previously unscraped areas of the heath. The aim was just to remove the top turf although due to a digger being used in some places the depth slightly varied.

Veteran Trees

The entire woodland has hundreds of veteran trees mainly comprising of old hornbeam pollards. In 2007 the Green Arc grant funded a survey of the veteran pollards that was carried out by James Curry Arborists. In total three hundred and sixty six veteran pollards were recorded, seventy five percent were Hornbeam (dominating the southern section of the wood), twenty percent Oak, with the remainder made up of Ash, Hawthorn and Goat Willow. The survey includes recommendations for the management of the pollards mainly based on trying to keep them standing, not too top heavy, and free from excessive competition. The trees were classed into priority 1, 2 or 3 and in March 2009 all of the work to the priority 1 trees was completed. The work on priority 2 trees has now also been completed and the final phase of restoration work to priority 3 trees will be completed when possible in early 2012.

There are also a good number of veteran maidens, to date 43 trees have been recorded and of these 39 are oaks. All of these oak trees have a circumference in excess of 3 metres at breast height, with the largest measuring 4.15 metres. Several of these trees are located within the area of the wood that is now dominated by secondary woodland. This supports the map evidence and theory that these trees originally stood as isolated trees within the rough pasture.

Water Courses

There are three ditches that drain through the wood. Two run parallel to one another in a north to south direction through the centre of the wood and a third runs along the northern boundary at the back of Lodge Close and down the western boundary. The most easterly of these ditches follows the head water channel of the original Daylop Brook mapped on the Ordnance Survey First Edition 1881. All the ditches receive maintenance by the Council's Engineering, Drainage and Water team. See also Appendix I - Section 6.4 Ditch Maintenance Plan and map. For much of their length the ditches appear relatively floristically poor with few, if any, aquatic plants and limited bank side vegetation other than bramble. However, the western ditch does have two interesting areas. The first is at its southern end, where pollarding has been undertaken. Here due to the increased light levels plants have recolonised. The second interesting area is situated at the top section of this ditch where numerous mosses and ferns are to be found growing on the banks.

Ponds

A small pond exists towards the northwest corner of the wood that provides an important all year round source of water. It is believed a wayward bomb created this during the Second World War. The pond is currently affected by heavy shade and has suffered from the heavy leaf fall into it. Bank side vegetation is sparse but includes soft rush, (*Juncus effusus*), creeping and celery leaved buttercup's (*Ranunculus repens/sceleratus*) and lesser spearwort (*Ranunculus flammula*). The pond historically has been important for breeding amphibians. During wet winters many of the hollows within the wood form temporary pools which then dry out during the summer. Some minor clearance works were carried out on this pond in 2003.

Recreation Ground

The recreation ground is managed by Leisure Services and falls outside the boundary of the Local Nature Reserve. However, it may be worth investigating to see if this land can be improved to compliment the woodland. Currently, the area kept closely mown for leisure purposes. It is species-poor dominated by perennial ryegrass (*Lolium perenne*) and white clover (*Trifolium repend*) the eastern strip adjoins the heathland area and could offer the best scope for improving its wildlife value with appropriate management.

A large well established pond, shown on the 1881 OS Map, is located in the far northwest corner of the playing field at the junction of Lodge close and Lambourne Road.

The pond was generally suffering from a lack of management until 2003 when a digger was used to remove lots of built up silt while a number of large willow and sycamore trees overhanging the pond were also felled. The pond appears in a much better state for this work; however the water quality may always be poor due to its close proximity to the busy Lambourne Road.

3.0 Cultural Information

3.1 Public Interest

Although to date no visitor surveys have been undertaken, regular visits to Chigwell Row Wood suggest that the area is reasonably well used by local walkers, including a large number with dogs. A number of children and teenagers visit the wood on a regular basis. The majority of visitors are local and come from the neighbouring residential areas of Hainault and Chigwell Row. Unfortunately, Chigwell Row Wood does experience problems associated with an area of public open space in an urban fringe location. Although still a problem fly tipping has decreased dramatically.

3.2 Past Management

Epping Forest Countrycare produced the first management plan for the wood in January 1989 (Ref PL/48.34/AWG/JJS). Six main proposals were put forward in the plan with the aims of improving the wildlife, amenity and landscape value of the woods. It was hoped that the re-introduction of management could reduce the vandalism and fly tipping that was prevalent along the southern edge of the woods at the time.

Since 1989 when the initial plan was completed a whole range of practical projects have been undertaken in the wood by both volunteers organised by Countrycare and contract labour funded by Leisure Services. These projects have ranged from coppicing and pollarding through to bridge and gate construction. A list of work undertaken can be found in Appendix II Section 7.2.2 please note compartments mentioned in this appendix differ to those in this plan.

4.0 Management Aims and Operations

4.1 Management Aims

- 4.1.1 Maintain and enhance the biodiversity of the woodland.
- 4.1.2 Maintain and enhance the grassland and rides.
- 4.1.3 Maintain and enhance the biodiversity of the heathland.
- 4.1.4 Maintain and enhance the biodiversity of the ditches and ponds.
- 4.1.5 Maintain and enhance the population of invertebrates and their associated habitats
- 4.1.6 Maintain and improve access for all the community and promote the educational value of Chigwell Row Wood.

4.2 Management Operations

The reserve has been divided into five main compartments for ease of reference, these compartments having been further sub compartmentalised by the pathways running through them. Please note that these compartments have changed since the previous Chigwell Row Wood Management Plan.

4.2.1 Maintain and enhance the biodiversity of the woodland.

4.2.1.1 Survey maiden and pollarded veteran trees towards the end of this plan to assess their condition and the success of restoration work undertaken; see Appendix II - Section 7.2.3.4 Pollard and Tree Condition Surveys

4.2.1.2 Restoration work of the veteran trees following the recommendations set out in the 2008 Pollard survey. Phase 1 and 2 have been completed leaving phase 3 work still to be carried out by James Curry Arborists which will be organised by Leisure Services; see Appendix II - Section 7.2.3.4 Pollard and Tree Condition Surveys & Section 7.3 General Management Guidelines

4.2.1.3 Manage the woodland by selective thinning in all compartments of the wood. Careful thinning throughout the wood will open up the canopy allowing more light to penetrate through to the woodland floor. This in turn will benefit the surrounding trees by reducing competition for water, light and space and provide room for natural regeneration below the canopy. To combat the lack of natural regeneration in the compartments surrounding G3 and maintain the feel and diversity of the woodland, Oak saplings that are encroaching on the heath can be transplanted to provide potential future maiden and pollarded Oaks. This will also create a more varied age structure within the wood and this field layer will eventually replace the mature and veteran trees once they have reach the end of their lives.

4.2.1.4 Coppicing in compartment C1.1 took place in December 2010, no action will be needed in this compartment for the life of this plan. Neglected coppice stools in compartments C1.4 and C5.1 should be brought back into a regular coppice rotation and other suitable species can be coppiced to provide a varied age structure to the woodland.

4.2.1.5 Standing deadwood or tree limbs are to be left. The overriding factor will be public safety with some cut wood to be left where it falls, near the pollard or coppice stools as fallen wood rather than stacking into piles.

4.2.1.6 Monitor and control species that can be seen as invasive i.e. sycamore and aspen, by means of digging up/ pulling or use of herbicide, this will be done to protect the diversity of the woodland. Notably aspen encroachment from compartment C3.4 on to the heath and sycamore in the North West corner of the wood in compartment C1.4, C1.5 and C4.1

4.2.1.7 Layer the hazel in section C1.1 to help create a more varied understory. Currently the understory is predominantly holly so encouraging the spread of species such as hazel will help to improve the biodiversity of the site.

4.2.2 Maintain and enhance the grassland and rides

4.2.2.1 Glades and rides to be cut annually to replicate the effect of grazing. The arisings should be taken away to prevent a build up of nutrient levels and competing bramble should be controlled to stop encroachment. Glade edges to be managed in accordance with the Glade Management Plan document. (A separate excel document which can be found in the Council's z:drive)

4.2.2.2 Manage paths by mowing and or flailing. The hardened path running north/south through the wood will need to be widened by one meter either side of the path. The other main paths can be flailed or mown to 1.5/2 meters in width or enough to allow free access through the site. These paths are the most common form of open space within the woodland and as such are important for invertebrates.

Selected areas along the paths in all compartments can be scalloped in rotation by a further 1 to 2 meters to create a varied age in habitat and promote biodiversity in a range of woodland ground flora.

Any desire lines through the wood will be left as such.

4.2.2.3 Clear bramble to create a new glade in C1.3. There is an area in the southern part of this site which has relatively open canopy and would benefit from the bramble cover being cleared to allow a greater diversity of ground flora to grow.

4.2.3 Maintain and enhance the biodiversity of the heathland.

4.2.3.1 Undertake further biological surveys of the flora and insects of the heathland area to monitor effects of

work carried out on and around the heath in previous management plans. Findings of these surveys may require slight alterations in the work proposed in further management plans.

4.2.3.2 Monitor the success of previous scraps and possible need for more in areas dominated by grasses.

4.2.3.3 Removal of undesirable woody species from the heath by means of pulling, digging up or herbicide application to stop succession thus returning it back to woodland.

4.2.3.4 Annually cut the grass on the heath as grazing is not a viable option on this site, this will prevent the sward from becoming rank benefiting annual plants. Cutting will take place ideally between October and February after flowering plants have set seed.

4.2.4 Maintain and enhance the biodiversity of the ditches and ponds.

4.2.4.1 Regularly remove the surface vegetation to ensure that approximately two thirds of the pond surface is kept as open water.

4.2.4.2 Liaise with the Engineering, Drainage and Water team from E.F.D.C in regards to ditch maintenance. See Appendix I - Section 6.4 Services and ditches.

In 2011 water course A was cleared of large logs and debris thrown into the ditch by vandals.

4.2.5 Maintain and enhance the population of invertebrates and their associated habitats

4.2.5.1 A further survey should be considered to monitor whether the management in previous years is having a positive or negative affect on invertebrates and their habitats so alterations can be made in future management plans if needed.

4.2.5.2 Dead wood should be left in situ. Though fallen and standing timber in any position and circumstance is valuable, the richest flora tends to be supported by material in partial shade with timber of a large diameter particularly important. If timber must be moved it is best moved under trees, bramble, nettles etc.

4.2.5.3 Timber cut during management, especially holly, will be burned close to the time of cutting. This is necessary to ensure piles of brash are not set alight during the summer months. Where piles are not convenient they should be stacked in parts of the wood where there is little dead wood or felling taking place, kept in the shade such as that provided by bramble, and kept to a maximum size of about three metres in length. See also 4.2.5.1

4.2.6 Maintain and improve access for all the community and promote the educational value of Chigwell Row Wood.

4.2.6.1 Maintain public safety. Any wind blown trees and unstable branches should be dealt with as soon as they become apparent if they are deemed hazardous. See also 4.2.1.7.

Surveying of the way marked trail on a regular basis for hazards is essential and the principal network of pathways are clear to allow free passage.

4.2.6.2 Patrol the site on a weekly basis to record and report any misuse of the site. While on site litter should be removed or as soon as possible. Reporting of large concentrations of fly tipped rubbish legal action should be pursued if evidence can be obtained.

4.2.6.3 Inspect all countryside furniture i.e. pathways, gates, fencing and bridges when patrolling site or at least 4 times a year.

4.2.6.4 Compile a photographic record of the boundaries of the woodland as evidence for boundary disputes.

4.2.6.5 Encourage schools and youth groups to use the site more as an educational tool. Chigwell Row Wood has great potential as a learning resource with a number of primary and secondary schools existing in close proximity. Propose another Try Your Hand Event aimed more towards schools and possible science projects.

4.2.6.6 Use the EFDC GPS to create an accurate map of the paths and desire lines through the wood. This will become a layer on the councils ArkGIS mapping system.

5.0 Work Schedule

5.1 Key

| Key | | | |
|-----|---------------|---|-------------|
| 1 | Jan, Feb, Mar | S | Staff |
| 2 | Apr, May, Jun | V | Volunteers |
| 3 | Jul, Aug, Sep | C | Contractors |
| 4 | Oct, Nov, Dec | L | Leisure |

5.2 Work Programme: Five Year Period

5.2.1 Maintain and enhance the biodiversity of the woodland

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | |
|--|---|---|---|-----|------|---|---|---|------|---|---|---|------|---|---|---|-------|-------|---|-------|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 5.2.1.1 Survey maiden and pollarded veteran trees | | | | | | | | | | | | | | | | | C | C | C | C |
| 5.2.1.2 Phase 3 of restoration | Organised by Leisure Services using James Curry Arborists | | | | | | | | | | | | | | | | | | | |
| 5.2.1.3 Single tree selection Thinning All comps. | | | | S/V | | | | | | | | | | | | | S/C/V | S/C/V | | S/C/V |
| 5.2.1.4 Coppicing in C1.1 | | | | | | | | | | | | | | | | | | | | S/V |
| 5.2.1.4 Coppicing in C1.4 | | | | S/V | | | | | | | | | | | | | | | | |
| 5.2.1.4 Coppicing in C5.1 | | | | | S/V | | | | | | | | | | | | | | | |
| 5.2.1.5 Standing deadwood | S/C | | | | | | | | | | | | | | | | | | | |
| 5.2.1.6 Monitor and control invasive species in C1.4 | S/V | | | | | | | | | | | | | | | | | | | |
| 5.2.1.6 Monitor and control invasive species in C1.5 | S/V | | | | | | | | | | | | | | | | | | | |
| 5.2.1.6 Monitor and control invasive species in C3.4 | S/V | | | | | | | | | | | | | | | | | | | |
| 5.2.1.6 Monitor and control invasive species in C4.1 | S/V | | | | | | | | | | | | | | | | | | | |
| 5.2.1.7 Layer hazel in C1.1 | S/V | | | | | | | | | | | | | | | | | | | |

5.2.2 Maintain and enhance grassland and rides

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | |
|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 5.2.2.1 Annual glade cut G1, G2.1, G2.2, G3 | | S | S | | | S | S | | | S | S | | | S | S | | | S | S | |
| 5.2.2.2 Mowing/flailing rides running through all compartments C1,C2,C3,C4 and C5 | S | | | S | S | | | S | S | | | S | S | | | S | S | | | S |
| 5.2.2.3 Create new glade in C1.3 | S/V | | | | | | | | | | | | | | | | | | | |

5.2.3 Maintain and enhance the biodiversity of the heathland

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | |
|---------|---|---|---|---|------|---|-----|-----|------|---|---|-----|------|---|---|-----|------|---|---|-----|-----|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 5.2.3.1 | Biological surveys of the flora and invertebrates of the heathland (Cpt. H) | | | | | | S/C | | | | | | | | | | | | | | |
| 5.2.3.2 | Monitor the success of scrapes | | | | | S | S | | | S | S | | | | S | S | | | | S | S |
| 5.2.3.3 | Removal of undesirable woody species cpt. H | | | | S/V | | | S/V | S/V | | | S/V | S/V | | | S/V | S/V | | | S/V | S/V |
| 5.2.3.4 | Annual grass cut | | | | | | | S/V | S/V | | | S/V | S/V | | | S/V | S/V | | | S/V | S/V |

5.2.4 Maintain and enhance the biodiversity of the ditches and ponds.

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | |
|---------|---|---|---|---|---|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 5.2.4.1 | Remove surface vegetation keeping 2/3 clear open water in pond | | | | | | | S | S | | | S | S | | | S | S | | | S | S |
| 5.2.4.2 | Liaise with the Engineering, Drainage and Water team from E.F.D.C in regards to ditch maintenance | | | | organised and implemented by Engineering, Drainage and Water Team | | | | | | | | | | | | | | | | |

5.2.5 Maintain and enhance the population of invertebrates and their associated habitats

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | |
|---------|--|---|---|---|---------|-----|-----|---|------|---|---|---|------|---|---|---|------|---|---|---|--|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 5.2.5.1 | Survey invertebrates to look at effects of works carried out since 2004/05 | | | | | S/C | S/C | | | | | | | | | | | | | | |
| 5.2.5.2 | Dead wood should be left situ except in the interest of public safety | | | | ONGOING | | | | | | | | | | | | | | | | |
| 5.2.5.3 | Freshly cut timber during management too large for burning should be moved to locations lacking in dead wood | | | | ONGOING | | | | | | | | | | | | | | | | |

5.2.6 Maintain and improve access for all the community and promote the educational value of Chigwell Row Wood.

| Project | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | | | | | | | | | | | | | | | | | | | | |
|---------|--|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | |
| 5.2.6.1 | Maintain public safety. Surveying of the way marked trail regularly | | | | | | | | | | | | | | | | | | | | ONGOING | | | | | | | | | | | | | | | | | | | |
| 5.2.6.2 | Weekly patrols of site by countrycare staff. | | | | | | | | | | | | | | | | | | | | ONGOING | | | | | | | | | | | | | | | | | | | |
| 5.2.6.3 | Inspection of woodland furniture. Organise repairs if/when necessary | | | | | | | | | | | | | | | | | | | | ONGOING | | | | | | | | | | | | | | | | | | | |
| 5.2.6.4 | Compile a photographic catalogue of the boundaries of the site | | | | | | | | | | | | | | | | | | | | ONGOING | | | | | | | | | | | | | | | | | | | |
| 5.2.6.5 | | S | S | | | S | S | | | S | S | | | S | S | | | S | S | | | | | | | | | | | | | | | | | | | | | |
| 5.5.6.6 | S | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

APPENDIX I

6.1 Boundary and Access



6.2 Compartment Map



6.5 Chigwell Row Woods ditch maintenance plan

Ditch maintenance is arranged by the Engineering, Drainage and Water team on behalf of Leisure Services.

Watercourses A, B, C & D:

- Inspected quarterly for the following reactive works;
- Machine desilted when required (expect once every 4 years);
- Litter pick when required (expect once per year) and removal of any large debris causing blockages.

Inlets to watercourses A and B:

- Inspected every two months or monthly during winter for blockages;
- Debris removed from grilles plus 10m upstream when required.

Watercourse C:

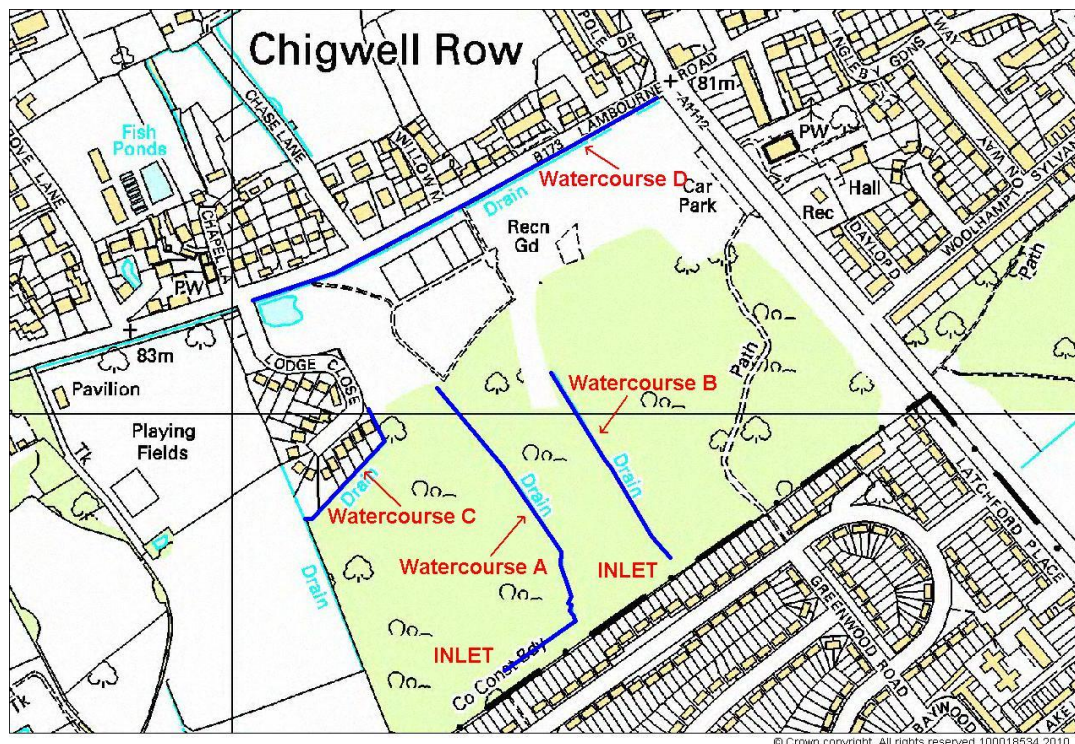
- Vegetation trimmed back when required (expect every 2 years)
- Ensure free flow into downstream ditch.

Watercourse D:

- Culverts rodded when required (expect every 2 years)

Other works may be required such as repairs to inlet/outlets, clearance of culvert blockages, strimming, desilting etc.

Watercourse locations:



Any queries regarding ditch work to be directed to the Engineering, Drainage and Water team.

APPENDIX II-

7.2 Past Management

The reserve is divided into compartments for ease of reference and these compartments have changed since the previous Chigwell Row Wood Management Plan, therefore this current plan will not correspond with previous compartment maps.

7.2.1 Past Management Plans

In January 1989, Epping Forest Countrycare produced the first management proposals for Chigwell Row Wood. (Ref PL/48.34/AWG/JJS). Six key projects were identified with the aims of improving the wildlife, amenity and landscape value of the woods. Since this initial plan was completed a range of practical projects have been undertaken in the woods by both volunteers organised by Countrycare and contract labour funded by Leisure Services.

In 1997, the first full management plan was written with laid out detailed proposals and strategies for effective management of the woodland. The plan was revised for 2006 – 2010.

7.2.2 Past Management 2007 – 2011

Please note the compartment map has been changed for the current management plan and therefore will not correspond with the previous management plan compartments.

| | | |
|---------------------|-------------|---|
| January | 2007 | – 12 volunteers from the Friends of Chigwell Row Wood Group and 2 staff coppicing hazel |
| 9 February | 2007 | – 11 Capel Manor students volunteer around the reserve |
| 12 February | 2007 | – 18 children and 4 key workers from the Limes Farm estate cleared Holly along western path leading to the recreation ground |
| 22 February | 2007 | – 14 volunteers clearing holly in western side of the wood with 10 Capel Manor arboriculture students felling Oaks |
| 8 March | 2007 | – 10 volunteers and 2 staff coppiced beside path between the two footbridges while 15 Capel Manor students felled hornbeams |
| 22 March | 2007 | – 30 students felling and clearing scrub around heathland |
| 3 May | 2007 | – 1st phase of dipping platform created and cleared around veteran trees with 8 Volunteers. (Pond on rec ground) |
| 8/9 May | 2007 | – Staff completed dipping platform on recreation ground pond. |
| 5 July | 2007 | - Cut and pulled small areas of heathland above height of young heather, gorse and tormentil. Installed steps at dipping platform with the help of 13 volunteers. 2 dangerous trees felled by Gristwood and Toms. |
| 18 September | 2007 | – Staff cut and raked grass and bramble around heathland, rides and glades. |
| 23 October | 2007 | – Staff cut grass on the heathland |
| 25 October | 2007 | – 7 Volunteers pulled bramble and aspen by hand from around young heather and cutting and raking rank grasses |
| 19 November | 2007 | – Cleared Holly with 15 Capel Manor students |
| 22 November | 2007 | – 12 Volunteers cleared holly at the intersection of the two paths next to bench. |
| 19 December | 2007 | – Created another glade north of the existing central glade. |
| 20 December | 2007 | – Removed logs surrounding heathland |

2007 = 11 project days, 1074 volunteer hours, 192 staff hours

- 21 January 2008** – Cleared holly from main ride north of heath with 25 Capel Manor students
- 13 March 2008** – 13 volunteers cleared and burnt holly and hornbeam north of heath
- 20 March 2008** – 11 volunteers cleared holly and hornbeam in central glade create in 2007
- 1 May 2008** – 9 volunteers cleared around heath, felled in woodland and replace damaged way markers
- 11/29 July 2008** – Staff cut back bramble along rides
- 20/28 August 2008** – staff and 16 volunteers cut heathland and ride parallel to Romford Road
- 25 September 2008** – 17 volunteers cut and raked bramble and glades north of heath
- 21 October 2008** - Staff improved security against motorbikes
- 15/16 December 2008** – Tree felling with Jim Curry and Gristwood and Toms

2008 = 6 project days, 546 volunteer hours, 108 staff hours

- 15/17 January 2009** – 12 Volunteers cleared along hardened path
- 9 February 2009** – Continued work on hardened path with 12 Capel Manor students
- 12/13 February 2009** – 12 Volunteers and 2 probationers helped to clear holly along paths
- 16/17 March 2009** - 10 Capel Manor students cleared holly an created scrapes on heath
- 19 March 2009** – Continued work on heath an removed rubbish and debris from pond with 16 volunteers
- 26 March 2009** – 9 volunteers cleared felled material at top of ride near the heath using a chipper
- 30 March 2009** – 10 volunteers replaced fence at brocket way entrance and re instated post for kissing gate. Cleared inorganic litter from pond and replace missing way markers.
- 16 April 2009** – Litter picked entire site with 10 volunteers
- 11 May 2009** – Stump an bramble clearance
- 5 June 2009** – Cut paths and cleared logs from pond
- 19 June 2009** – Cut paths
- 30 July 2009** – 10 volunteers resurfaced granite chip path
- 6 August 2009** – 11 volunteers complete resurfacing work and pulled aspen and bramble from heath
- 8 August 2009** – Cut heathland
- 10 August 2009** – 10 volunteers helped to removed arisings from cutting and continue pulling bramble from around the edge of the heath.
- 10 December 2009** – 10 volunteers cleared bramble and holly near pond
- 17 December 2009** – 14 volunteers helped to clear holly

2009 = 13 project days, 888 volunteer hours, 204 staff hours

- 21 January 2010** – 13 volunteers felled Holly and Hornbeam in south of wood
- 9/16/30 March 2010** – Staff flailed path and around glades
- 22 April 2010** – 10 volunteers installed a drainage pipe and replaced damaged way marker posts
- 28 April 2010** – Staff move log piles way from the edge of ride
- 10 May 2010** – Staff pulled bramble on heath
- 29 June 2010** – Staff cut aspen for faggots
- 16 August 2010** – Flailed glade in eastern side of wood
- 25/26 August 2010** – staff and 10 volunteers cut and removed arisings from heath
- 30 September 2010** – 16 volunteers replaced vandalised way marker posts and western glade cut and arisings removed
- 16 December 2010** – 16 volunteers coppiced hazel in western side of wood

2010 = 5 project days, 390 volunteers hours, 156 staff hours

- 19 January 2011** – Staff cut scallops along hardened path
- 20/25 January 2011** – Staff and 14 volunteers clearing sycamore and installing new bench
- 7 April 2011** – Digging up sycamore in north west corner of wood by the hardened path.
- 9/11 May 2011** – Flailing along edges of paths
- 12 May 2011** – 11 volunteers cleared the western drainage ditch inorganic litter and debris
- 23 May 2011** – Strimmed an mowed bramble near the heath
- 26 May 2011** – 13 volunteers dug up aspen and bramble around the heath
- 5 July 2011** – 4 volunteers helped to dig up aspen near the heath
- 31 August 2011** – 13 volunteers cut the heath and removed the arisings
- 16 September 2011** – Prepared work area for Try Your Hand Event
- 20 September 2011** – Processed stakes and binders cut during the Try Your Hand Event
- 30 November 2011** – Prepared work area for Christmas task
- 1 December 2011** – 11 volunteers cleared debris from the pond, reinstated hardened path at the edge of the recreation ground and cleared around kissing gate entrance
- 15 December 2011** – 18 volunteers cleared holly encroaching on to the paths west of the hardened path and to expand the western glade

2011 = 7 Project days, 588 volunteer hours, 168 staff hours

7.2.3 Summary of restoration work on veteran pollards

7.2.3.1 Phase One – 1991

The first restoration work on these old pollards began in 1991. It is now apparent that much of this work, however well intended, has speeded up their decline. Management practices at the time, undertaken in this wood and in Hainault Forest in the early 1990's were to remove all the pollards stems tight to the bolling. This is now recognised as being far too severe as it puts the old trees under considerable stress. While 84% of the trees that were worked on in 1991 are still alive 10 years on, many are in a poor condition with signs of heavy decay.

In this first phase of "restoration" all the branches were removed from the trees with the cut made very close to the knuckle of the bolling. A survey of this first phase of pollarding was undertaken in 1997 and again in 04/2001 the following was observed;

Area P1 1991 - 26 pollards were cut.
 1997 - 21 alive and 5 dead or dying.
 2001 - 21 alive and 5 dead
 7 good condition, 11 stressed condition and 3 dying.

Area P2 1991 - 10 pollards were cut
 1997 - 10 alive.
 2001 - 10 alive
 5 good condition, 3 stressed condition and 2 dying

Area P3 1991 - 15 pollards were cut
 1997 - 12 alive, but 3 in poor condition
 2001 - 12 alive and 3 dead.
 2 good condition, 6 stressed condition, 4 dying

Totals from 1991 Phase

1991 - 51 trees were cut.
1997 - 43 trees were still alive with 8 dead or dying.
2001 - 43 trees were still alive with 8 dead

In 2001, although 43 trees were still alive, only 14 were in really good condition. Some 20 trees showed signs of stress with rot on the main trunk or bole, although all did have strong regeneration in the crown of the pollard. The remaining 9 were in a very poor condition, heavily rotted with die back and restricted regrowth i.e. half or more of crown canopy had died in some cases.

It is still difficult to assess the success. Statistically 84% of the original pollards are still alive after 10 growing seasons, however, many of the trees are showing signs of die back to the bole with significant fungal growth on many of the trees. With only 14 trees in a really good condition, any future work will have to be considered carefully.

7.2.3.2 Pollarding Phase Two – 1997

In this second pollarding phase a total of 59 trees were cut. As in 1991, the entire crown was removed, however the branches were not cut right back to the knuckle, but left much longer. In 2001, 57 were still alive and appeared to be doing well, with only 2 having died.

7.2.3.3 Pollarding Phase Three – 1999-2001

Between 1999 and March 2001, around 15 trees received restoration work in conjunction with coppice management to improve the entrances and the main rides. All the trees were either Oak or Hornbeam. If possible all the stems were left long i.e. over 12 feet and some had just single stems removed.

7.2.3.4 Pollard and Tree Condition Surveys

A comprehensive survey of 364 pollards was undertaken in 2008 by James Curry Arborists. The complete findings of which can be found at Epping Forest District Council's Countrycare offices.

The survey includes tree species, height of bolting, total tree height, maximum crown spread, diameter at breast height and the percentage of functional cambium. All the trees in the survey were categorised into 4 groups and prioritised in management plan for the five years from the date of the survey, although all will need a degree of work to prolong their lives. Also included in the survey are comments and suggestions on the type of management needed for each individual tree and a map of their location.

In addition to the above pollard survey a tree condition survey was undertaken in 2009. Using non invasive visual tree assessment methods, trees near or overhanging the main paths through the wood were assessed and mapped.

With physiological and structural condition taken into account, management recommendations were provided for each tree in a similar fashion to the pollard survey, some overlap between the surveys was necessary due to tree locations.

The complete findings of the Tree Condition Survey can also be found at Epping Forest District Council's Countrycare offices

A further veteran tree survey will be undertaken towards the end of this management plan.

7.3 General Management Guidelines.

7.3.1 Management of the veteran oak pollards.

The veteran oak trees within Chigwell Row Wood are to far lapsed to consider pollarding again. They should therefore be left except for minor crown reduction if considered absolutely necessary.

The temptation to "tidy up" any of the veteran trees should be resisted at all cost, as long as it is safe any dead branches should be left either on the tree or where they fall.

Very dense scrub and holly surrounding the tree should be cleared to reduce competition for nutrients and prolong the life of the tree. However, it is important to retain enough scrub to shelter the tree which will also provide nectar sources for the many insects that live there.

7.3.2 Management of the veteran hornbeam pollards

Some of the largest and healthiest lapsed hornbeam pollards are contained within compartments P7, P8 and P9. Very careful consideration should be made before any further works are undertaken. It may be decided that it is appropriate to leave these trees as relicts and let nature take its course. This will ensure that the existing character of the old pollard areas to which visitors have become accustomed is retained. In turn mosses, ferns, fungi and insect fauna adapted to these conditions are safeguarded.

There are conflicting views as to the best time to undertake any pollarding work. Recent research suggests that cutting in Spring should definitely be avoided. At Hatfield Forest, July is a preferred time. As pollarding has taken place in both October, February and March it will be interesting to compare how the different pollards survive.

Thought needs to be given to the length of time for the pollarding cycles. Oliver Rackham has found documentation that supports the cutting of pollards between 18 and 25 years in Hainault Forest during the Middle Ages. Re-introducing pollarding on 18-25 year cycles could provide timber of a diameter useful for firewood. However, earlier rotations although increasing the frequency of management could bring additional wildlife benefits by ensuring that the ground flora is never completely shaded out.

It is proposed for the trees that were cut in 1991, to begin removing one large stems each year (or longer depending on the response of the individual tree). This will ensure that at no time in the future will the whole canopy be removed at once.

For all the lapsed pollards, it is proposed that only a very gradual reduction of the crown is undertaken to lessen the weight of existing stems. The health of individual trees must be assessed before any work is undertaken. Before any more pollarding is attempted a full survey of the veteran trees (see below) should be undertaken. This will help to highlight the more vulnerable pollards and form there drafting of plans for individual trees. Some lapsed pollards should simply be left to do there own thing.

7.3.3 Management of Heathland

To restore this area of relic heathland scrapes were taken of the top layer of grass and soil to expose any remaining buried seedbank. A report on the restoration trial was undertaken and found that in some areas to much was removed by mechanical diggers. Since then further scrapes have been created by hand at a shallow depth, which has proved successful.

Once the colony of heather is established areas of mature plants can be cut to allow regeneration but until such time the only management consists of controlling of Aspen and an annual cut, this takes place in late September/October.

The complete findings of the Blackwood Bayne Heathland Restoration Report can be found at Epping Forest District Council' s Countrycare offices.

APPENDIX III

8.1 Species List

8.1.1 Wildflowers

| Common Name | Scientific Name |
|--------------------------|------------------------------|
| Bird's-foot-trefoil | <i>Lotus corniculatus</i> |
| Bittersweet | <i>Solanum dulcamara</i> |
| Bramble | <i>Rubus fruticosus</i> |
| Buttercup, Creeping | <i>Ranunculus repens</i> |
| Buttercup, Celery-leaved | <i>Ranunculus sceleratus</i> |
| Catsear, Common | <i>Hypochaeris radicata</i> |
| Celandine, Lesser | <i>Ranunculus ficaria</i> |
| Cleavers, Common | <i>Galium aparine</i> |
| Cinquefoil, Creeping | <i>Pentilla reptans</i> |
| Coltsfoot | <i>Tussilago farfara</i> |
| Common Water-Crowfoot | <i>Ranunculus aquatilis</i> |
| Cow Parsley | <i>Anthriscus sylvestris</i> |
| Clover, Red | <i>Trifolium montanum</i> |
| Clover, White | <i>Trifolium repens</i> |
| Chickweed, Common | <i>Stellaria media</i> |
| Duckweed sp. | <i>Lemna sp.</i> |
| Enchanters Nightshade | <i>Circaea lutetiana</i> |
| Garlic Mustard | <i>Alliaria petiolata</i> |
| Gorse, Dwarf | <i>Ulex minor</i> |
| Hawk's-beard, Rough | <i>Crepis biennis?</i> |
| Heather | <i>Calluna vulgaris</i> |
| Herb Robert | <i>Geranium robertianum</i> |
| Honeysuckle | <i>Lonicera periclymenum</i> |

| Common Name | Scientific Name |
|-----------------------------|-----------------------------------|
| Ivy | <i>Hedera helix</i> |
| Lords-and-Ladies | <i>Arum maculatum</i> |
| Lousewort | <i>Pedicularis sylvatica</i> |
| Mint, Water | <i>Mentha aquatica</i> |
| Nettle, Common | <i>Urtica dioica</i> |
| Ragwort, Common | <i>Senecio jacobaea</i> |
| Rose | <i>Rosa sp.</i> |
| Reedmace | <i>Typha latifolia</i> |
| Tormentil | <i>Potentilla erecta</i> |
| Knapweed, Black | <i>Centaurea nigra</i> |
| St. Johns-Wort, Slender | <i>Hypericaceae pulchrum</i> |
| Sawthistle, Smooth | <i>Sonchus oleraceus</i> |
| Sorrell, Common | <i>Rumex acetosa</i> |
| Spearwort, Lesser | <i>Ranunculus flammula</i> |
| Stitchwort, Greater | <i>Stellaria holostea</i> |
| Stitchwort, Lesser | <i>Stellaria</i> |
| Violet | <i>Viola sp.</i> |
| Water-milfoil, Whorled | <i>Myriophyllum verticillatum</i> |
| Wild Liquorice (milk-vetch) | <i>Astragalus glycyphyllos</i> |
| Willowherb, Great | <i>Epilobium hirsutum</i> |
| Willowherb, Broad-leaved | <i>Epilobium montanum</i> |
| Wood Avens | <i>Geum urbanum</i> |

8.1.2 Grasses Sedges and Rushes

| Common Name | Scientific Name |
|-------------|----------------------------|
| Bracken | <i>Pteridium aquilinum</i> |
| Float grass | <i>Glyceria fluitans</i> |
| Soft Rush | <i>Juncus effusus</i> |

| Common Name | Scientific Name |
|----------------|-----------------------------|
| Timothy-grass | <i>Phleum pratense</i> |
| Yorkshire Fog | <i>Holcus lanatus</i> |
| Wavyhair grass | <i>Deschampsia flexuosa</i> |

8.1.3 Trees and Shubs

| Common Name | Scientific Name |
|----------------|-------------------------------|
| Horse Chestnut | <i>Aesculus hippocastanum</i> |
| Field Maple | <i>Acer campestre</i> |
| Sycamore | <i>Acer pseudoplatanus</i> |
| Silver Birch | <i>Betula pendula</i> |
| Hornbeam | <i>Carpinus betulus</i> |
| Hazel | <i>Corylus avellana</i> |
| Hawthorn | <i>Crataegus monogyna</i> |
| Buckthorn | <i>Frangula alnus</i> |
| Ash | <i>Fraxinus excelsior</i> |
| Holly | <i>Ilex aquifolium</i> |
| Crab Apple | <i>Malus sylvestris</i> |

| Common Name | Scientific Name |
|-------------|-------------------------|
| Aspen | <i>Populus tremula</i> |
| Wild Cherry | <i>Prunus avium</i> |
| Blackthorn | <i>Prunus spinosa</i> |
| Oak | <i>Quercus robur</i> |
| Dog Rose | <i>Rosa canina</i> |
| Bramble | <i>Rubus sp</i> |
| Elder | <i>Sambucus nigra</i> |
| Goat willow | <i>Salix caprea</i> |
| Whitebeam | <i>Sorbus aria</i> |
| Rowan | <i>Sorbus aucuparia</i> |
| Yew | <i>Taxus baccata</i> |

8.1.4 Fungi

| Common Name | Scientific Name |
|----------------------|---------------------------------|
| | <i>Chondostereum purpureum</i> |
| | <i>Collybia dryophila</i> |
| | <i>Coriolus versicolor</i> |
| | <i>Cylindrobasidium evolens</i> |
| | <i>Dacrymyces stillatus</i> |
| King Alfred's Cake | <i>Daldina concentric</i> |
| | <i>Diatrype disciformis</i> |
| Artists fungus | <i>Ganoderma applanatum</i> |
| Sulphur tuft | <i>Hypoholoma fasciculare</i> |
| | <i>Hypoxylon fragiforme</i> |
| | <i>Hypoxylon multiforme</i> |
| | <i>Hypoxylon nummularium</i> |
| Chicken of the woods | <i>Laetiporus sulphurous</i> |
| Brown Birch Bolete | <i>Leccinum scabrum</i> |
| Bonnet mycena | <i>Mycena galericulata</i> |

| Common Name | Scientific Name |
|----------------|--------------------------------|
| | <i>M. acalina</i> |
| | <i>M. inclinata</i> |
| Coral spot | <i>Nectria cinnabrina</i> |
| Rooting Shank | <i>Oudemansiella radicata</i> |
| Birch polypore | <i>Piptoporus betulinus</i> |
| Deer fungus | <i>Pluteus cervinus</i> |
| | <i>Psathyrella hydrophilum</i> |
| Yellow Russula | <i>Russula ochroleuca</i> |
| Purple Russula | <i>Russula atropurpurea</i> |
| Tar spot | <i>Rhytisma acerinum</i> |
| Earthball | <i>Scleroderma citrina</i> |
| Hairy sterium | <i>Stereum hirsutum</i> |
| | <i>S. rugosum</i> |
| Candle snuff | <i>Xylaria hypoxylon</i> |

8.1.5 Mosses Lichens and Liverworts

| Scientific Name |
|--------------------------------|
| <i>Orthodontium lineare</i> |
| <i>Cladonia coniocraea</i> |
| <i>Cladonia humilis</i> |
| <i>Brachythecium rutabulum</i> |
| <i>Eurhynchium praelongum</i> |

| Scientific Name |
|---|
| <i>Parmelia sulcata</i> |
| <i>Parmelia (Melanelia) subaurifera</i> |
| <i>Hypogymnia physodes</i> |
| <i>Lophocolea heterophylla</i> |

8.1.6 Butterflies

| Common Name | Scientific Name |
|---------------------|--------------------------|
| Small Tortoiseshell | <i>Aglais urticae</i> |
| Painted Lady | <i>Cynthia cardui</i> |
| Peacock | <i>Inachis io</i> |
| Comma | <i>Polygonia c-album</i> |
| Red Admiral | <i>Vanessa atalanta</i> |
| Speckled Wood | <i>Pararge aegeria</i> |

8.1.7 Reptiles and Amphibians

| Scientific Name | Scientific Name |
|-----------------|--------------------------|
| Grass Snake | <i>Natrix natrix</i> |
| Toad | <i>Bufo bufo</i> |
| Common Frog | <i>Rana temporaria</i> |
| Smooth Newt | <i>Triturus vulgaris</i> |