



**HATFIELD FOREST**  
**NATIONAL NATURE RESERVE**



**5 YEAR CONSERVATION MANAGEMENT PLAN**

**2015 - 2020**

**General Manager: Ade Clarke**  
**Countryside Manager (Essex): Henry Bexley**  
**Regional Wildlife Advisor: Stuart Warrington**

**October 2015**

## CONTENTS

	Page
<b>PART 1 STATEMENT OF SIGNIFICANCE</b>	<b>4</b>
<b>PART 2 DESCRIPTION</b>	<b>10</b>
2.1 General Information	
2.2 Location	
2.3. Summary Description	
2.4 Land Tenure	
2.5 Management Structure	
2.6 Management Agreements	
<b>PART 3 EVALUATION AND OBJECTIVES</b>	<b>13</b>
3.1 National status	
3.1.1 SSSI Citation	
3.1.2 SSSI Operations likely to damage the special interest	
3.1.3 Condition Assessment of the SSSI	
3.2 Natural Area Context	
3.3 Criteria for Evaluation	
3.3.1 Size	
3.3.2 Diversity	
3.3.3 Naturalness	
3.3.4 Rarity	
3.3.5 Fragility	
3.3.6 Position in an Ecological Unit	
3.3.7 Recorded history	
3.3.8 Opportunity for Education and Public Involvement	
3.4 Vision and Long-term Management Aims and Objectives	
3.4.1 The Vision	
3.4.2 Long Term Aims	
3.4.3 Summary Objectives for SSSI and NNR Features	
3.4.4 Summary Objectives for other features	
3.5 Impact Assessment	
3.5.1 Natural Factors	
3.5.2 Human Factors	
3.5.3 Legal Constraints	
3.5.4 Constraints of Tenure	
3.5.5 Management Constraints	
3.6 Rationale	
<b>PART 4: OPERATIONAL OBJECTIVES AND PRESCRIPTIONS</b>	<b>25</b>
<u>Objective 1</u>	Subject to natural change, to maintain the wood pasture habitat in favourable condition.
<u>Objective 2</u>	To maintain the actively managed coppice habitat in favourable condition.
<u>Objective 3</u>	To allow minimum intervention areas of woodland to develop.
<u>Objective 4</u>	To restore broadleaved deciduous woodland in areas of conifer woodland.
<u>Objective 5</u>	Subject to natural change, to maintain populations of nationally rare and scarce plant, fungi and invertebrate species and assemblages.
<u>Objective 6</u>	Survey the flora and fauna of the Forest.
<u>Objective 7</u>	Maintain the wetland, lake, wet ditch and pond habitats
<u>Objective 8</u>	Prevent as far as is practical the negative impacts caused by pests, diseases and invasive non-native species.
<u>Objective 9</u>	Deepen the interest of the public in Hatfield Forest as a premier site for conservation through creative interpretation, events and educational use aimed at all visitor segments.
<u>Objective 10</u>	Value and protect the archaeological and historical interest of the site
<u>Objective 11</u>	Ensure safe and sustainable use of the site by the public, volunteers and staff
<u>Objective 12</u>	Implement maintenance programmes for buildings and site infrastructure
<u>Objective 13</u>	Maintain good relations with volunteers, local people, tenants, local authorities and conservation partners

**PART 5 REFERENCES 36**

**PART 6 APPENDIX 37**

- Map 1. Hatfield Forest location and extent of National Trust land
- Map 2a. SSSI Units of Hatfield Forest and Wall Wood.
- Map 2b. NNR and SSSI boundary of Hatfield Forest and Wall Wood
- Map 3. Forestry Commission Hatfield Forest compartment numbering (X2)
- Map 4. Woodland Management. Active Coppice Areas (date area cut), Minimum Intervention & Plantations.
- Map 5. Rural Land Registry TL Compartment Map
- Map 6. Grazing Units and Areas in Hatfield Forest
- Map 7. Scrub clearance areas with wood pasture restoration and maiden pollard creation.
- Table A. Hatfield Forest SSSI Condition Assessment (by Natural England 2011, 2012)
- Table B. Summary Evaluation of Nature Conservation Features of Hatfield Forest NNR.
- Table C. The Compartment Names, Numbers, Habitat and outline management at Hatfield Forest

Document I '**Conservation objectives and definitions of favourable condition for designated features of interest**' – Hatfield Forest. Natural England

## **PART 1 STATEMENT OF SIGNIFICANCE FOR HATFIELD FOREST**

### **Synopsis**

Hatfield Forest extends over 424 hectares, including Wall Wood and Woodside Green and has been owned and managed by the National Trust since 1924.

Of greatest significance is that Hatfield Forest is the finest surviving example of a small Medieval Royal Hunting Forest, with all the important features including wood pasture with abundant pollard trees, coppices, wood banks and other earthworks, and almost intact boundaries. There is a long continuity of the most important aspects of the Forest management including the grazing of the wood pasture using cattle and sheep, the deer herd, coppicing and pollarding. As such it is a truly remarkable and unique place, not only within Britain but also in a European context, as an example of a land-use system and vegetation pattern dating from early medieval times, which is still complete and functioning today.

The Forest's ecological and historic importance is reflected in its designations. It is a Site of Special Scientific Interest and a National Nature Reserve, for its considerable ecological significance and especially for its veteran trees and old growth woodland on undisturbed soils. There are two Scheduled Ancient Monuments on the site and four listed buildings, which reflect its historical significance. It is recognised as potentially qualifying for World Heritage Site status in terms of its cultural and natural heritage value.

In addition, Hatfield Forest is a particularly well-documented and researched place for its natural, social and archaeological history and is thus a superb and unique case study.

The Forest is a place of living history, evidence of which abounds wherever you look. Machinery may have replaced hand tools and visitors have replaced commoners but walking through a coppice or past a tree that has been re-pollarded is to walk through a thousand years of history. The continuation of the traditional practices of grazing, coppicing and pollarding are vital to conserve the habitats, the Forest's landscape and its cultural significance for future generations of people and wildlife.

It is also the largest, most accessible and most important space for outdoors recreation for the community in the local area.

### **1. Historic environment significance (A)**

*"Hatfield is of supreme interest in that all the elements of a medieval Forest survive: deer, cattle, coppice woods, pollards, scrub, timber trees, grassland and fen, plus a seventeenth-century lodge and rabbit warren. As such it is almost certainly unique in England and possibly in the world .....The Forest owes very little to the last 250 years ..... Hatfield is the only place where one can step back into the Middle Ages to see, with only a small effort of the imagination, what a Forest looked like in use."* Oliver Rackham, *The Last Forest*, 1976.

The pre-forest landscape is represented by a number of sites. Possible Iron age settlement sites are represented by earthworks at Portingbury Hills and at the warren however in both cases alternative interpretations related to the management of the forest and warren in later centuries are possible. Both are Scheduled Ancient Monuments so should be graded Significance A.

Roman sites are represented by pottery finds and earthworks but these sites are yet to be characterised (significance B). Of more significance is actually the lack of archaeology – to date no evidence of early field systems have been found in the forest suggesting the possibility that the area has never been cultivated and may have retained some woodland cover since the ice-age. Such a history is very rare in the lowlands.

Much of the historical importance of the site relates to the Norman era. Hatfield Forest has a free-living population of more than 150 Fallow Deer, thought to be direct descendants of the original herd, introduced by Henry I. The whole layout of the site was developed with hunting in mind, so the rides were cut through the woodland radiating out to the wood pasture – the main ‘chase’ occurring through the centre of the Forest culminating in a funnel shaped feature at the south-western corner. The characteristic mosaic of woods and open areas with long vistas may have inspired the typical Georgian landscape design. Coppicing and pollarding would have been techniques used to harvest wood and the livestock grazed throughout the wood pasture and the coppices. The Forest Lodge is a rare survivor and is a listed building. It is sited at the best possible place for overlooking the plains and may have had a standing for spectators to watch the ceremonial hunts. Some factors detract from the significance of the forest such as the loss of areas to the north and east, scrub encroachment onto open areas, loss of some coppices and abandonment of coppice or conversion to high forest on some areas. However the survival of all aspects of the medieval forest and its unbroken traditional management make the forest of European significance.

Rabbits were introduced to the Warren (also a S.A.M) and the pillow mounds still prominent there today are likely to have been re-profiled Iron Age earthworks. During the C17th, Warren House was built which is also a listed building. Unusually for Essex it is built from red brick and not timber-framed, which symbolises the great esteem with which the rabbit Warrener was held by society.

Post-medieval developments also made their mark; most notably the C18th landscaped Lake Area which involved the damming of the Shermore Brook to create the lake and its resulting marsh and fen site at the delta where the Shermore Brook enters it. Other activities of that time included the clearance of coppice to achieve a more open landscape within it, the retention of some of the standards as landscape trees, as well as the wider scale planting of ornamental trees. The Grade II\* listed Shell House was also built at this time. These changes were probably the work of Capability Brown, then working for the Houblon family at Hallingbury Place.

WWII had a significant effect on Hatfield Forest, when new sections of road were laid, the coppices used as ammunition stores by the MOD and grazing effort was reduced, leading to the establishment of large tracts of hawthorn scrub. There is undisturbed WWII archaeology to be found throughout Elgins Coppice such as Nissen hut foundations and associated metalwork. The significance of the WWII structures is increased by their almost total destruction elsewhere.

During the 1960s there were large excavations to widen rides now known as the ‘motorways’, to improve general access and for the purposes of forestry timber extraction routes. These have gained significance since that time due to the ditches running down each side being a valuable protected habitat for rare wild flowers.

In December 1999, a Korea Air Lines Boeing 747 carrying cargo crashed immediately to the west of The Forest after taking off from Stansted Airport. Much of the cargo fell on The Forest and while almost all was removed, the risk of some remaining resulted in an area of Lodge Coppice being fenced. This protected site provides a controlled environment to gauge the pressures on the remainder of the Forest, for example from deer, cattle and visitor presence.

## **2. Cultural heritage significance (A)**

The many layers of history which have shaped Hatfield Forest as it can be viewed today have imbued it with a huge amount of cultural significance.

It was established and used by the Norman kings between c. 1100 and 1446 as a provider of deer for the royal table. During this period, the Forest was notably owned by Robert the Bruce, Edward I and then Henry VI who finally gave up the Forestral rights. During the Tudor period, Henry VIII owned the Forest without these rights.

During its period of private tenure, Hatfield Forest was owned by several noteworthy figures; Lord Rich – the Elizabethan Lord Chancellor, Sir Edward Turner – Speaker of the House of Commons during the C17th and later the Houblons, who were a family involved with founding the Bank of England. It is widely thought that Capability Brown was commissioned by the Houblons to design the Lake Area – he certainly designed the Houblons' grounds next door to the Forest at Hallingbury Park.

The Houblons also gave some quirky names to various parts of the Forest, such as Doodle-Oak Coppice which was named after the most famous tree in the Forest – the Doodle Oak – which in its own right has provoked a wealth of folklore and myths.

*“Hatfield is a microcosm of English history. Five of its landowners suffered for high treason. Robert the Bruce, the War of the Roses, the English Civil War, and the founders of the Bank of England all played their part. The seventeenth and eighteenth centuries are a story of comic squabbles between the landowner, the lord of the manor and the commoners...” (Oliver Rackham, 1996)*

As further explored in section 6, regular visitors to the Forest feel a real sense of ownership over the place. There could be a significant vestige of the old system of commoners' rights underlying this phenomenon.

## **3. Landscape and Setting significance (A)**

Hatfield Forest falls within 'The East Anglian Plain'. This is an ancient landscape upon which modern agriculture has generally been imposed. There is a complex network of old hedgerows, ancient woods, villages, hay meadows and pastures, streams and rivers, and wetlands, set in arable land. Much of the vegetation's character derives from the widespread chalky clay soils deposited by glaciers over chalk rock. Habitats of particular importance include a small number of fens scattered throughout the East Anglian Plain, most of which are small and isolated from other fens, small lowland meadows which are now very sparsely scattered through the East Anglian Plain, and ancient woodlands that are amongst the richest in the country for flowering plants. River valleys occur widely spaced across the whole East Anglian Plain. Each valley is a mosaic of habitats, including floodplain grazing marsh, fens, eutrophic standing

water (e.g. in ditch systems) and wet woodlands. Within this local area context a few scattered relic medieval forest systems can be found.

Hatfield Forest is a truly unique landscape in that all of the elements which made up a royal medieval hunting forest are still fully intact and operational today. The managed deer herd, cattle and sheep grazing, coppicing, pollarding and Rabbit Warren date back to a medieval land-use system and vegetation pattern. Its boundaries are largely intact. No other forest can lay claim to the same completeness. Many had their boundaries completely altered and their size reduced once they fell out of royal ownership. Commonly, many have undergone transformation to farmland or parkland in the C18th & 19th. Others have discontinued crucial forest husbandry practices in more recent years. The nearest surviving forests which, along with Hatfield, would have made up the great Forest of Essex are Epping, Hainault and Writtle.

Hatfield Forest provides a striking first impression to any visitor. Cattle, sheep and, at dawn and dusk, deer graze the wood pasture, interspersed with its 884 large and weathered ancient trees. These are landmarks within a reasonably flat landscape as well as symbolising the historical and ecological importance of the site. The yellow meadow anthills which abound on the wood pasture again symbolise the lack of ploughing, as do the many hundreds of earthworks, which indicate man's activities over the centuries from well before it was declared a Forest right through to modern relics from the Second World War. The grasslands become golden yellow in May as millions of buttercups flower, creating perhaps the largest expanse of buttercups in England. The Houblon family provides another layer of history, with the introduction of a designed landscape adapted by Capability Brown in the eighteenth century. The landscape around the Lake Area provides views which are iconic to the Forest and its visitors.

A walk in Hatfield Forest immerses its visitors in a largely unchanged medieval landscape. It is like going back in time and the flat topography means that there are no views out to modern structures. The only detractor to this – and it is a strong one – is the visual and audible impact of aircraft from Stansted Airport, which lies just 2km from the centre of the Forest.

#### **4. Nature and wildlife significance (A)**

Hatfield Forest is biologically of international importance because it provides a superb case study in historical ecology and the survival of the medieval landscape affords a direct link with the primeval vegetation cover of the country and its inhabitants. The Forest also provides a diverse range, a mosaic, of valuable habitats. It is designated a Site of Special Scientific Interest and a National Nature Reserve.

Hatfield Forest's key features are: wood pasture with cattle grazing, unimproved grassland and veteran pollards; ancient coppice woodland with a long continuity of management; and very high species richness of invertebrates, fungi, lichens and plants, including many nationally rare or threatened species.

The 884 recorded ancient and veteran pollards of 8 species, and the old coppice stools, are of huge significance in their own right, however, they also support a nationally important assemblage of invertebrates and fungi dependent on dead and decaying wood found within them. Hatfield Forest is in the top 10 UK sites for this rare saproxylic community. The epiphytic flora of lichens and mosses associated with the veteran trees

is also very important. The wood pasture also supports one the largest areas of varied and herb-rich unimproved grasslands in Essex, and alongside the Shermore Brook there are marsh and fen habitats, rare for Essex. Over 400 flowering plant species have been recorded, including many county rarities, with Oxlip and Flat Sedge populations of national importance. The wood pasture is particularly noted for its ancient 'thorn', often covered with Mistletoe, which is also found growing on Ash and Field Maple. In addition there are a large number of Yellow Meadow Ant hills, some of which may be over 100 years old.

The woodlands are varied in structure and composition, with a diverse range of tree and shrub species. The wide rides within the woodlands provide additional open, sunny habitats, which are important for plants and insects. The inappropriate plantations of conifers in three areas of the Forest have all been recently removed.

The Forest supports a good range of bird and mammal species, and is especially important for bats with 10 species known to forage within the Forest.

## **5. Significance for farming and forestry (B)**

Hatfield Forest comprises several main habitat types which broadly fit in to either the farming or forestry remit. There is c.140 ha of wood pasture, c.190 ha of semi-natural broadleaved woodland c.48 ha of scrub and c.21ha of plantation woodland, although all plantations are in the process of being heavily thinned to make way for native plantings and natural regeneration, only leaving a few relic conifer trees. The relatively large area of the Forest enables sites to be at different stages in the coppicing and pollarding cycles of management.

The whole site is farmed in-hand, either under licence or with our own flock of rare breed sheep where wood pasture is within its restoration phase. The grazing is essential for the continuation of the wood pasture habitat and cattle grazing is currently carried out by a local farmer with 120 Red Poll from 1st May to 31st October, however, this is at risk if farming economics worsen for graziers.

In the mid 1970s, coppicing was reintroduced for the first time since WWII, when it was understood that woodland flora and fauna was in decline as a direct result of discontinuation of this activity for so long. Today, two hectares are coppiced every year on a 35 year rotation. Uniquely, cattle are still allowed to browse through the coppices at around nine years after cutting, a medieval technique to allow more fodder for cattle. These early restorations of old coppice have since become general practice nationally. This pioneering work is reflected in the Forest's veteran tree management and in particular the adoption of restoration 'retrenchment' pruning techniques as practiced on lapsed pollards. The lessons have been learned about how this should be done over many years at the site and we hold several courses on best practice which are attended by arboriculturalists on an international scale.

Hatfield Forest produce, of beef, venison, firewood, sawn timber and hazel poles all play an important part in boosting revenue at this self financing property and marketing the by-product of our conservation work is an intrinsic part of the property business plan.



## **6. Social and socio-economic significance (B)**

Every year, the Forest receives nearly 500,000 visits by people from near and far, who use it as a site for spiritual refreshment, leisure pursuits, research and general natural and social history interests. Local people often have a long standing relationship with the Forest, having been brought there during their childhood for family visits. In turn they bring their children and grandchildren and in this way the association between Forest and family goes back many generations. Hatfield Forest is a source of local pride.

Hatfield Forest has played a significant role in the local community for centuries. A fair was held at the Forest from 1336 to approximately 1600. Today it is used as a gathering point for people from the surrounding area and from further afield. It attracts a large number of people participating in a variety of sport based activities throughout the year, including walking, horse riding, cycling, fishing and boating. Events are well supported and approximately 70 percent of visitors visit more than once a year. Situated in a built up area, the Forest has excellent road links which makes it very accessible to the community. A majority of the Forest's c.150 volunteers live within a 15 mile radius.

Hatfield Forest is a rural haven in an urban area which has seen significant housing development in the last decade. The value of the Forest as a greenspace will become even more prevalent with the demand for housing along the M11 corridor. It provides a safe haven for children to play, explore and learn about the outdoors. It is possible to find a quiet spot for peaceful reflection alone, away from the crowds, where people can appreciate the tranquillity and escape from the pace of modern life. There are opportunities to see and photograph wildlife including deer, birds, wildflowers and fungi.

Hatfield Forest has a well-established Learning Department, which supports cross curricular learning outside the classroom. It has 2 guardianship schools and has strong community links with local groups undertaking practical tasks and assisting in the design of new interpretation. School visits bring children to the Forest who would otherwise not have visited, reaching a wide and new audience.

Due to its relatively small size and logical layout, Hatfield Forest provides an easy introduction to the outdoors for people who are not used to visiting the countryside. Due to the geography of this part of North Essex, the Forest does not present a challenge with undulating terrain, making access inclusive to all abilities.

The three car parks which all lie within the Forest's boundaries and are used by the many visitors are intrusive in the landscape. The Forest is facing increasing pressure due to rising visitor numbers, especially in the winter, when the Forest goes beyond its carrying capacity.

## **PART 2 DESCRIPTION**

### **2.1 General Information**

This Management Plan of Hatfield Forest National Nature Reserve has been prepared by the National Trust in its capacity as an approved body under Section 35 of the Wildlife and Countryside Act 1981 (as amended).

Site name:	Hatfield Forest National Nature Reserve
Authors of Plan:	Ade Clarke, Henry Bexley and Stuart Warrington, The National Trust, Hatfield Forest, Takeley, near Bishops Stortford, Essex. CM22 6NE. Tel: 01279 870678
Date Written:	October 2015
Area of NNR:	404 ha
Key Natural Features:	Nationally important wood pasture with cattle grazing, unimproved grassland and veteran pollards, ancient coppice woodland with long continuity of management; nationally important saproxylic fauna and fungal community; rich invertebrate fauna, lichen, moss and vascular plant flora. Marsh and fen habitats, rare for Essex.
Date Acquired:	1924
Date Declared NNR:	30 September 1994
Date Notified SSSI:	1956, renotified under the 1981 Wildlife and Countryside Act in 1985

### **2.2 Location**

National Grid Reference: TL5320

Hatfield Forest is situated in Northwest Essex, five kilometres east of Bishop's Stortford and eight kilometres west of Great Dunmow, as shown in **Appendix Map 1**. It is bounded on the northern edge by the Flitch Way, a disused railway line (the Braintree - Bishops Stortford spur) owned by Essex County Council which provides a useful buffer zone between the Forest and the residential development along the A120. Roads or farmland form the remaining boundaries. The site lies within Uttlesford District Council.

### **2.3 Summary Description**

Hatfield Forest is the finest surviving example of a small medieval Royal Hunting Forest with all its important features intact. As such it is a truly remarkable place, not only within Britain but also in a European context, as an example of a land-use system and vegetation pattern dating from early medieval times, which is still complete and functioning today. It is also a site with continuity of woodland cover back to the Ice Age, making it an internationally important old growth site.

The Forest essentially consists of a number of ancient coppice-with-standards woodlands within a matrix of pasture and pasture-woodland, with ancient pollarded trees being a very important feature. Most of the site is covered by poorly drained calcareous gley soils, derived from chalky boulder clay. Together with Wall Wood, the Forest occupies just over 404 hectares. The surrounding area, now under strong development pressure, retains elements of its original medieval character in the pattern of fields, hedges and farms, within which context Hatfield Forest has remained the epitome of a medieval Forest. Hatfield Forest has a free-living population of more than 150 Fallow Deer, thought to be direct descendants of the original herd, introduced by Henry I.

Hatfield Forest is a National Nature Reserve and Site of Special Scientific Interest and has been owned and managed by the National Trust since 1924. It is renowned for its rich assemblage of invertebrates and fungi dependent on dead and decaying wood found on the ancient pollards. It is also an excellent site for breeding birds. There are two Scheduled Monuments on the site and four listed buildings.

## **2.4 Land Tenure and Legal Status of the Site**

The National Trust owns the Freehold of the site and the land has been declared inalienable in accordance with the National Trust Act of 1907. Edward North Buxton gifted it to The Trust in May of 1924.

404 hectares of the property is a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR). This means that The National Trust is legally obliged to observe the provisions of the Wildlife and Countryside Act, 1981 (as amended).

**Appendix Map 2** shows the NNR/SSSI boundary and features of Hatfield Forest. Woodside Green and the other Greens owned by the National Trust are excluded from the SSSI. Monks Wood (not NT) is within the SSSI but excluded from the NNR.

There are two Scheduled Monuments; The Warren and Portingbury Hills, afforded protection under the Ancient Monuments and Archaeological Act, 1979.

There are four listed buildings; The Shell House; Warren House; Forest Lodge; Wall Wood Cottage, all of which are Grade II except for The Shell House which is Grade II\*.

Byelaws protect the site and The National Trust Act 1907 ensures that Hatfield Forest will be held in perpetuity as inalienable land.

There are no public rights of way on the Forest, but there is an extensive network of permissive paths. The Forest is not normally closed to public access on foot.

**Constraints of tenure:** Forest Lodge lease.

## **2.5 Management Structure**

Hatfield Forest has been owned and managed by the National Trust since 1924. Overall management is the responsibility of the Beds-Herts-Essex General Manager, supported by Regional Office staff and Essex Heads of Department who are in turn supported by site-specific Hatfield Forest staff. The delivery of the Conservation Management Plan is the direct responsibility of the Countryside Manager.

## **2.6 Management Agreements**

Countryside Stewardship (WD2): Works including capital items under the Woodland Management Plan and Plan of Operations are licensed by the Forestry Commission and grant aided for an area of 257.66 ha under Countryside Stewardship 2015-20. (See ***Appendix Maps 3 and 4***).

Higher Level Stewardship: The HLS Scheme 2011-21 covers the wood-pasture, grazing and scrub management areas. ***Appendix Map 5*** Shows the defined boundaries of existing CS WD2 (woodland) and the HLS (wood pasture) agreements. ***Appendix Maps 6 and 7*** show the grazing and actively managed scrub areas throughout the wood pasture which fall in to the HLS scheme.

## **PART 3 EVALUATION AND OBJECTIVES**

### **3.1 National Status**

#### **3.1.1 Site of Special Scientific Interest Citation**

**County:** Essex                      **Site Name:** Hatfield Forest

**District:** Uttlesford

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

**Local Planning Authority:** Uttlesford District Council

**National Grid Reference:** TL 538202      **Area:** 403.2 (ha) 996.3 (acres)

**Ordnance Survey Sheet 1: 50 000:** 167    **1: 10 000:** TL 51 NW, TL 52 SW

**Date Notified (Under 1949 Act):** 1956      **Date of Last Revision:** 1974

**Date Notified (Under 1981 Act):** 1985      **Date of Last Revision:** -

#### **Other Information:**

Hatfield Forest and Wall Wood are owned by the National Trust.

#### **Reasons for Notification:**

Hatfield Forest is unique in being the last small medieval Royal Forest to remain virtually intact in character and composition. The Forest, together with the purlieu woods: Wall Wood, Monk's Wood and Wallis's Spring, was originally an outlying part of the extensive Forest of Essex and still covers over 400 hectares of mixed ancient coppice woodland, scrub, unimproved grassland chases and plains with ancient pollards, and herb-rich marshland bordering a large lake. The woodland is predominantly wet ash-maple and the ash-maple variant of oak-hornbeam. There is a small area of plateau alder, a restricted habitat within Essex and also the only example in the county of calcareous mixed oak coppice, with its unusually large oak stools. More than four hundred species of higher plants have been recorded, including about thirty trees and shrubs, and many county rarities with Stinking Hellebore *Helleborus foetidus* and Oxlip *Primula elatior* of national importance. It is comparatively rich in bryophytes and lichens and has locally important breeding bird communities and insect populations.

Over fifteen different woodland stand-types have been recognised within the coppices. They are mainly mixed with standards of Ash *Fraxinus excelsior*, Oak *Quercus robur* and Hornbeam *Carpinus betulus* - the latter forming more pure stands in Monk's Wood and Wallis's Spring. Aspen *Populus tremula* and Birch *Betula spp.* occur in varying quantity, especially where Elm *Ulmus spp.* has declined through Dutch Elm disease. The shrub layer is similarly variable with Hazel *Corylus avellana* and Hawthorn *Crataegus monogyna*, with some Blackthorn *Prunus spinosa*. Holly *Ilex aquifolium* is conspicuous by its unexplained absence. The Forest is particularly noted for its ancient "thorn", often covered with Mistletoe *Viscum album*, which is also found

growing on Black Poplar *Populus nigra*, Ash and Maple *Acer campestre*. The ground flora is dominated by Dog's Mercury *Mercurialis perennis* and Bramble *Rubus spp.* And in the wetter areas by Tufted Hair-grass *Deschampsia cespitosa*. Wall and Monk's Woods are well known for their Primroses *Primula vulgaris*, while Oxlips *P. elatior* are found in Dowsett's and Parsley's (Street) coppices as well as in Wall Wood which is close to their southern limit in Britain. Herb Paris *Paris quadrifolia* is found over larger areas of Round and Long Coppice. Other noteworthy species include Early Purple Orchid *Orchis mascula*, Greater Butterfly Orchid *Platanthera chlorantha*, Bird's-nest Orchid *Neottia nidus-avis*, Common Twayblade *Listera ovata*, Wild Daffodil *Narcissus pseudonarcissus*, Common Gromwell *Lithospermum officinale* and Stinking Iris *Iris foetidissima*.

Centuries -old pollarded trees are scattered across the grassland plains of the eastern half of the Forest. They include Hornbeam, Oak and probably the only native Beech *Fagus sylvatica* in Essex outside Epping Forest and South Weald Park. The grasslands of the ancient wood pasture are both varied and herb-rich. Notable species include Bee Orchid *Orphrys apifera*, Pyramidal Orchid *Anacamptis pyramidalis*, Common Spotted Orchid *Dactylorhiza fuchsii*, Strawberry Clover *Trifolium fragiferum*, Wild Thyme *Thymus praecox*, Dwarf Thistle *Cirsium acaule* and Adder's Tongue *Ophioglossum vulgatum*. Typical plants of a more sandy area include Sheep's Fescue *Festuca ovina*, Heath-grass *Danthonia decumbens*, Spring Sedge *Carex caryophylla*, Upright Chickweed *Moenchia erecta*, Small-flowered Buttercup *Ranunculus parviflorus* and Harebell *Campanula rotundifolia*.

The rich fen area at the northern end of the Lake, fed by the Shermore Brook, is one of the largest known island marshes in the county. It contains numerous plants which are rare elsewhere in Essex, such as Early Marsh and Southern Marsh Orchids *Dactylorhiza incarnata* and *D. praetermissa*, Broad Blysmus *Blysmus compressus*, Marsh Pennywort *Hydrocotyle vulgaris*, Bog Pimpernel *Anagallis tenella*, Marsh Arrow-grass *Triglochin palustris*, Tubular Water Dropwort *Oenanthe fistulosa*, Ragged Robin *Lychnis flos-cuculi* and Marsh Valerian *Valeriana dioica* as well as at least six species of sedge *Carex spp.* The Lake itself provides an additional habitat for both resident and migrant wildfowl and contains Pike, Tench, Roach, Rudd and Perch.

Grasshopper Warbler, Snipe, Water Rail and Nightingale are amongst the more than sixty species of birds breeding in the Forest. There are also a number of Badger setts within the woodland.

### 3.1.2 Operations likely to damage the special interest

Site name: **Hatfield Forest, North Essex**

OLD1003932

Ref. No.	Type of Operation
1	Cultivation, including ploughing, rotovating, harrowing, and re-seeding.
2	Grazing and changes in the grazing regime (including type of stock or intensity or seasonal pattern of grazing and cessation of grazing).
3	Stock feeding and changes in stock feeding practice, including changes in the number of animals stocked.
4	Mowing or other methods of cutting vegetation and changes in the mowing or cutting regime (including hay making to silage and cessation).
5	Application of manure, fertilisers and lime.
6	Application of pesticides, including herbicides (weedkillers).
7	Dumping, spreading or discharge of any materials.

- 8 Burning.
- 9 The release into the site of any wild, feral or domestic animal\*, plant or seed.
- 10 The killing or removal of any wild animal\*, including pest control.
- 11 The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould or turf.
- 12 Tree and/or woodland management+ and changes in tree and/or woodland management+.
- 13a Drainage, including the use of mole, tile, tunnel or other artificial drains.
- 13b Modification of the structure of watercourses (eg streams, springs, ditches or drains), including their banks and beds, as by re-alignment, re-grading and dredging.
- 13c Management of aquatic and bank vegetation for drainage purposes (see also 11).
- 14 The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes).
- 15 Infilling of ditches, drains, ponds, pools, marshes or pits.
- 16a Freshwater fishery production and/or management (where already damaging) and changes in freshwater fishery production and/or management, including sporting fishing and angling.
- 20 Extraction of minerals, including peat, sand and gravel, topsoil, subsoil, chalk and spoil.
- 21 Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
- 22 Storage of materials.
- 23 Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
- 26 Use of vehicles or craft likely to damage or disturb the flora and fauna.
- 27 Recreational or other activities likely to damage or disturb the flora and fauna.
- 28 Game and waterfowl management and hunting practice and changes in game and waterfowl management and hunting practice.

\* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.

### **3.1.3 Condition Assessment of the SSSI.**

Natural England has assessed the condition of SSSIs based on a system of Common Standards Monitoring. The result of the most recent assessment of the SSSI land owned by The National Trust is shown in **Appendix Table A**. All National Trust owned Units are currently regarded to be in either Favourable Condition or Unfavourable Recovering condition with an accompanying statement of 'Meeting Management Objectives'.

### **3.2 Natural Area Context**

Hatfield Forest falls within Natural Area 50 The East Anglian Plain.

The East Anglian Plain is an ancient landscape upon which modern agriculture has been imposed. There is a complex network of old hedgerows, ancient woods, villages, hay meadows and pastures, streams and rivers, and wetlands, set in arable land. Much of the vegetation's character derives from the widespread chalky clay soils deposited by glaciers over chalk rock.

Habitats of particular importance include a small number of fens scattered throughout the East Anglian Plain, most of which are small and isolated from other fens, small

lowland meadows which are now very sparsely scattered through the East Anglian Plain, and ancient woodlands that are amongst the richest in the country for flowering plants. River valleys occur widely spaced across the whole East Anglian Plain. Each valley is a mosaic of habitats, including floodplain grazing marsh, fens, eutrophic standing water (e.g. in ditch systems) and wet woodlands.

### **3.3 Criteria for Evaluation**

#### **3.3.1 Size**

Hatfield Forest NNR covers an area of over 404 hectares and is one of the largest expanses of semi-natural habitat in Essex. It comprises several main habitat types, including semi-natural broadleaved woodland (c.190 ha), scrub (c.48ha), wood pasture (c.140 ha), open water (5.7 ha), marshland (3.2 ha) and plantation woodland (21 ha) although plantations have been 90% thinned to make way for native plantings and natural regeneration, only leaving a few relic conifers. It is the best surviving example of a small medieval Royal hunting forest in Europe. The size is an important facet for management as it ensures that there is always an area of the Forest in a different stage of management, coppicing and pollarding cycles.

#### **3.3.2 Diversity**

Hatfield Forest consists of a mosaic of open wood pasture areas between coppiced woodland with open water and marsh vegetation. In addition this is one of the few sites where there were eight species of tree pollarded resulting in a very diverse and important veteran tree resource. The Hatfield Forest Veteran Tree Survey (Fay & Fay 2001 and Fay and Monck 2014) identified and mapped over 900 veteran trees across the Plains (850 pollards comprising 42% hawthorn, 23% hornbeam, 18% field maple, 9% (82) oak, 7% (60) ash, plus crab apple, beech, elm). The unimproved and semi-improved grassland of the wood pasture varies from slightly calcareous to neutral, most areas being seasonally wet, and includes a small area of acid grassland. There are locally valuable fen, marsh and reedswamp habitats. There have been 15 different Peterken classification woodlands types identified on Hatfield from alder carr through to hornbeam and hazel coppice. There are areas of coppice in regular rotational management and stands that have not been cut for more than 70 years which contain some veteran coppice stools and have become more like high forest in character. They have been managed with minimum intervention for some years and this has increased the diversity of habitats on site.

Ongoing surveys and collation of data reveal the huge diversity of flora and fauna of Hatfield Forest, which is especially important and impressive for a site in the arable claylands of north-west Essex. The species lists include 510 vascular plants of which 85 are 'woody' species (although 34 of these have been planted), 320 'wildflowers' (of which 29 have not been recorded post-1990) and 96 grasses and sedges (8 of which have not been found post-1990). There are also 150 bryophytes, 105 lichens, over 640 fungi and over 2300 invertebrate species. Of particular note is the richness of the beetle (over 700 species), fly and moth fauna. In addition, surveys since 2001 have produced a list of 17 waxcap species (*Hygrocybe*) in the grasslands. There is also a great diversity of breeding and wintering birds, with more than 60 species breeding on the site.

#### **3.3.3 Naturalness**

Hatfield Forest is a remarkable example of a land-use system and vegetation pattern dating from early medieval times, which is still intact and functioning today. It is this continuity of management and habitats on Hatfield Forest which make it unique. Thus



none of the habitats that occur are original, they are all a result of past human activities, however, the rich diversity of communities they support is natural and of great value. It is likely that the coppice woodland and some of the ancient pollards are managed relics from the natural wildwood of the area, making the element of continuity vitally important in terms of the naturalness of the flora and fauna. The areas of minimum intervention lapsed coppice is reverting to more natural forest conditions with veteran trees growing and therefore provides a valuable link to the primeval natural Forests of Britain.

#### 3.3.4 Rarity

Hatfield Forest is biologically of international importance because it provides a superb case study in historical ecology and the survival of the medieval landscape affords a direct link with the primeval vegetation cover of the country and its inhabitants. The habitats associated with the coppices, wood pasture, veteran trees and decaying wood are scarce or rare in Britain and Europe, and their flora and fauna consequently include many species which are rare, local or declining. Hatfield therefore has an excellent complement of these species. (See **Appendix Table B**).

Of particular importance is the saproxylic beetle fauna with numerous Red Data Book rarities such as *Gastrallus immarginatus*, *Procræus tibialis*, *Malthodes crassicornis*, *Aeletes atomarius*, *Ischnomera caerulea*, *Trichonyx sulcicollis*, *Rhizophagus oblongicollis*, *Scydmaenus rufus* and *Diaperis boleti*. The Index of Ecological Continuity of **140** and Species Quality Index of **684** place Hatfield Forest firmly in the top 10 UK sites for this rare saproxylic fauna. Almost every invertebrate group investigated at Hatfield has rare and scarce species, both nationally and especially in an Essex context.

The epiphytic flora associated with the veteran trees is very important, with a number of scarce lichens and bryophytes. For example, the lichen *Bacidia incompta*, a rare S41 priority species, was found recently on a veteran ash. Other rare lichens include *Cladonia caespiticia*, *Lecidea sublivescens*, *Ochrolechia subviridis*, *Phlyctis argena*, and rare bryophytes *Campylium elodes*, *Rhodobryum roseum* and *Ricciocarpos natans*.

The Forest also provides an important refuge for scarce plants in Essex such as Oxlip *Primula elatior*, Stinking Hellebore *Helleborus foetidus*, Dwarf Thistle *Cirsium acaule* and Pale Sedge *Carex pallescens* and is the only known Essex site for Flat Sedge *Blysmus compressus* and Brown Sedge *Carex disticha*.

The fungal community is exceptionally rich, with over 640 species recorded, and includes national rarities such as *Phellinus cavicola*, *Junghuhnia separabilima*, *Boletus albidus*, *Boletus queletii*, *Hericium cirrhatus* and all 5 *Ganoderma* bracket fungi.

#### 3.3.5 Fragility

Ancient woodland and wood pasture soils - particularly boulder clay - are extremely vulnerable to compaction, poaching and erosion. Recent Footfall Impact Assessments have concluded that the Forest ride system is becoming unsustainably damaged by excessive use. The ground flora of the coppice interiors and the ancient woodbanks are becoming trampled because rides have become unusable during the winter months through poaching. The wood pasture is becoming compacted. Solutions to this issue involving hard infrastructure, drainage, selective tree cutting and local planning are being sought at the time of writing.

The old pollards are extremely fragile, most of them have not been cut for more than 100

years and they now have very heavy boughs, which are breaking off or splitting the whole trunk. Pollards are susceptible to soil compaction from vehicles, cattle and - as cited in the 2014 Veteran Tree Survey - people. There has also been a long period of time when no pollards were created and therefore the ecosystem these trees provide will be slowly dying out without replacements in the short term. This habitat is viable if management continues to create pollards of differing ages to try and recreate the dead and dying wood conditions that are vital in younger trees. The many rare and specialised dead wood invertebrates and fungi are sensitive to changes in temperature and humidity and their habitat requirements are by their very nature specific. Thus it is important to ensure that there is wood in various states of decay to accommodate these species. The potential impact of climate change on this fauna is unknown.

Air pollution is a continuing threat. The epiphytic lichens and mosses associated with the old trees are sensitive to peaks in pollution levels and one incident can destroy the interest completely, making this group especially fragile to air pollution.

Extensive grazing is still carried out on the Forest by a local beef grazier from 1st May to 31st October. Changes in the economic support mechanisms for farmers means that the nature of the relationship is a fragile one. Grazing is essential for the continuation of the wood pasture habitat.

### **3.3.6 Position in an Ecological Unit**

It is fortunate that Hatfield Forest is a large site as it is surrounded on three sides by arable agricultural land and to the north by Stansted airport. There is also the busy M11 to the west and the A120 to the north. The result being that Hatfield Forest is a biodiversity hotspot and green lung in an agricultural landscape. There are a very few other areas of woodland nearby and these include Birchanger woods (a County Wildlife Site) to the west of the M11, Elsenham Woods SSSI to the north and High Wood SSSI towards Dunmow.

### **3.3.7 Recorded History**

The recorded history of management of Hatfield Forest dates back for many hundreds of years and Dr Rackham's book *The Last Forest* (1989) provides a very detailed account up to the present day. The Forest as it now stands is a unique product of 900 years of well-documented and complex historic management. The essential pattern of coppices, plains, scrub and pollards survives, although five former coppices were converted to grassland or wood pasture during the 18th and 19th centuries. The Forest boundary remains historically the same over much of its length; cattle and sheep still graze the plains; coppicing and pollarding continue; fen and marsh are still present. It is unlikely that any cultivation of crops has ever taken place within the Forest and there have been great variations in grazing levels in the Forest over the centuries. This continuity of management is strongly reflected in the flora and fauna of the property. The site provides a superb case study in historical ecology.

### **3.3.8 Opportunity for Education and Public Involvement**

Hatfield Forest offers significant opportunities for public access, appreciation and education. Over 450,000 people visit Hatfield Forest each year, mostly for informal recreation.. The Forest provides a learning resource for school groups, staffed by a Learning Officer, with over 5000 visits from school children each year. Courses, walks, talks and a programme of events are provided for the public, largely in the summer months. Some self-led events are licensed every year. Forest staff are assisted by over 100 volunteers who work throughout all departments.

### **3.4 Vision and Long-term Management Aims and Objectives**

#### **3.4.1 The vision for Hatfield Forest is a property where:**

- The existing ancient medieval hunting forest features and habitats will be conserved and enhanced along with the associated biodiversity.
- The national and international importance and reputation for innovative and pioneering work in ancient tree management is maintained and developed and there is a continuity of ancient trees.
- The cattle grazing will be managed at a level that ensures the survival of the trees and enhancement of the grasslands.
- The ancillary buildings and visitor facilities can be moved to an offsite, nearby location in order that the lake and Shell House can be restored to a setting more closely linked to the original 18<sup>th</sup> century plan.
- Land around the borders will be acquired in order that all car parks on the property could be moved to an off site location resulting in no public vehicle access on the Forest directly to reduce vehicle pressure, maintain and enhance the visitor experience, improve access for disabled, elderly and families and reduce the likelihood of development nearby.
- The management of the entire site will be sustainable.
- The potential for education, interpretation and community involvement will continue to develop and all our visitors leave with an appreciation of the significance of the Forest and an understanding of its management by the Trust.
- The historic and cultural significance of Hatfield Forest will be further researched and developed.

#### **3.4.2 National Trust's Long-term Aims**

##### **A. Improve the conservation management of the medieval hunting forest**

- Obtain long term funding support for the implementation of the pollard survey management recommendations.
- Continue to manage at least 70 hectares of coppice on a 35 year rotation. Explore options for increasing this to 100 hectares
- Work with the local grazier to optimise the grazing regime with the right animals, the right numbers at the right time of year.
- Ensure the property plays a full part in implementing the relevant sections of the national and local Biodiversity Action Plans
- Undertake land acquisition of suitable areas for the visitor facilities including car parks to reduce impacts on the Forest's medieval landscape and special biodiversity.
- Undertake land acquisition of land adjacent to the property for restoration and buffering (initially those areas, which were once part of the medieval forest).
- Oppose the expansion of Stansted Airport
- Ensure long term monitoring of the impact of Stansted Airport and the associated development.
- Ensure continued action is taken when necessary to minimise the impact of the airport and surrounding development.
- Ensure long-term recording and monitoring of the Forest's biodiversity especially its ancient trees and woodlands

## **B. Continue to improve the interpretation of the property and develop more educational activities and community involvement**

- Continue to develop innovative engagement and interpretation to deepen supporters understanding of the property and appreciate the historical and environmental interest..
- Continue to develop the education facility into a year round resource for formal and informal education and community activities for children and adults.
- Develop more corporate partnerships.
- Promote quiet outdoors environment that is safe and accessible.
- Develop greater links with the local community.
- Ensure appropriate welcome and facilities.
- Work with neighbouring organisations to ensure maximum benefit is achieved.
- Continue to raise the profile of the conservation significance of the Forest in the local area
- Adapt interpretation, facilities and events as knowledge of our supporters improves – such as segmentation
- Embed engagement into all that we do

## **C. Shell House and 18<sup>th</sup> Century landscape area**

- Conserve the Shell House
- Develop the Lake Area Conservation Plan and implement actions

## **D. Ensure the property is sustainable**

- Ensure that commercial opportunities and partnerships are maximised in line with the conservation objectives of the site.
- Strive to ensure that the property operates in an environmentally sustainable way.

### **3.4.3 Summary Objectives for SSSI and NNR Features**

- Subject to natural change, to maintain the following features in favourable condition (see Appendix – Conservation Objectives):
  - Veteran trees including pollards and coppice
  - Cattle grazed wood pasture with neutral and acid unimproved grassland
  - Ancient woodland communities, both active coppice and minimal intervention areas
  - Stream, fen, marsh, pond and lake habitats
- Subject to natural change, to maintain populations of nationally rare and scarce plant, fungi and invertebrate species and assemblages
- Ensure the NNR contributes to National and Local Biodiversity Action Plan targets where appropriate.

### **3.4.4 Objectives for Other Features**

*Achieving these objectives should not compromise any of the SSSI objectives*

- To continue to value and protect the archaeological interest of the site.
- To support sustainable public access – particularly during the summer - and encourage an appreciation of the Forest for its history, wildlife and habitats, through visits, interpretation and the website.
- To continue to implement cost-effective provision, replacement and

maintenance programmes for buildings and site infrastructure.

### **3.5 Impact Assessment**

#### **3.5.1 Natural Factors**

**A. Weather and Climate Change:** The recent incidents of prolonged drought combined with unusually high summer temperatures have wide implications for all areas of habitat management on the Forest, ranging from grassland and pollard management through to the habitats associated with the water systems. Unpredictably wet weather makes the grass car parks waterlogged, and paths susceptible to footfall impacts. The change in climate is also having an effect on flowering times, which is especially significant for species like thistle, making it more problematic for management. There also seems to be an increase in high winds during the growing season, which has an implication for the woodland areas and the veteran trees.

**B. Soils:** The predominant soil is an impermeable clay which creates a range of access problems during wet seasons. Cattle can compact the soil significantly and create large muddy areas if they are left on the Forest into the late autumn. Human footfall, by the increasing numbers of visitors, is also a significant issue and causing damage, especially through the winter months.

**C. Succession:** Natural succession, particularly of grassland and wetland habitats towards scrub is an important process. Some scrub is cleared to restore it to wood-pasture, but also that there needs to be some areas of developing scrub providing habitat and sites suitable for natural regeneration. The prevalence of bramble to establish in heavily thinned plantations selected for conversion to native woodland or coppice might provide an opportunity for natural woodland regeneration to occur in areas usually depleted by deer browsing. This is certainly the case where future pollards are nursed by bramble as saplings in the scrubs encroaching on to the wood pasture since WWII. The wetlands and marsh are so important locally within Essex that they need to be managed to prevent succession to willow and alder carr.

**D. Diseases and Pests:** Acute oak decline is active and is predicted to be a major threat to English oak populations. The latest episode is thought to be due to bacterial infection and is highly invasive because it affects the trunk and its bark. It usually kills the host tree within five years of infection and is highly transferable, hence the need for concern, vigilance and appropriate action if suspected and positively diagnosed. Dutch Elm disease is present and active along with other potentially damaging diseases including sudden oak death caused by *Phytophthora ramorum*, a fungus, which affects trees already under stress by drought and warmer climate. Several horse chestnut trees on the Warren have succumbed to bleeding canker and died, however this disease is thought by Forest Research to be on a downturn at present. The onset of the disease can be exacerbated by the tree growing season being affected by the leaf miner moth *Cameraria ohridella*, which almost all Hatfield Forest horse chestnuts have been infected by. Diseases imported with foreign nursery trees such as *Chalara* dieback of ash is now in the UK and threatens the native ash. The final stage of sudden oak death is where the oak jewel beetle *Agilus pannonicus* infects a tree already infected and weakened by *Phytophthora*. The beetle has been identified at Hatfield Forest. The demise of some mature oaks has been attributed to severe drought episodes in recent years. The oak processionary moth has been found in London and moved northwards from France due to climate change. Similarly the European oak *buprestid* has been found in the UK and has affected healthy specimens by eating around the cambium, whereas it was

traditionally believed to only affect dying specimens. Both of these could potentially reach Hatfield Forest within the next five years therefore vigilance will be maintained.

**E. Deer:** The deer cause damage to the fresh growth on coppice stools and also fray saplings. The estimated population of over 150 Fallow deer and 50 muntjac has a significant impact on the regeneration of the coppice and appears to stunt the regrowth by at least four or five years. Coppice stools are protected individually which is labour intensive. Stool mortality as a result of deer browsing has been investigated in Wall Wood and the findings clearly show that if deer browsing is allowed to happen the stool will die within two to three years. Certain species are favoured, in particular ash, oak and hazel, field maple and hornbeam less-so. Hazel stools individually protected by baskets are heavily bark stripped even after eight years of adequate protection, whereafter the basket rots. No stools have died as a result but they will inevitably be rendered not commercially viable and also depleted as a habitat resource. Deer are managed on the Forest and at a landscape scale, utilising patchy data from neighbouring landowners' estimates on deer population, cull targets and actual cull figures, coupled with deer road mortality figures. The resurrection of the Deer Management Group has been implemented in part, albeit by telephone conversations and informal conversations in person. The fallow herd are culled annually by the experienced staff and volunteer stalkers, with up to 60% of the overall herd culled whenever possible to prevent deer numbers increasing. There is a policy to be as transparent as possible about deer management and this appears to have quelled any serious negative PR situation from arising. A large issue is the increasing problem of deer becoming active nocturnally at the Forest and dispersing on to neighbouring land during daylight hours during peak dog walking times. Wherever possible the general public are educated and reminded of the need for responsible dog ownership and keeping their pets under strict control. Assistance from neighbouring landowners is sought in order to pressurize deer behaving in this way and a sporadic collaborative cull has been implemented as a local deer management group to partly tackle the issue.

**F. Death of Veteran Trees:** The gradual decline and death of the lapsed ancient pollards, which are all of a similar age, resulting in a loss of the specialised habitat they provide and a lack of trees which are of intermediate age. The original density was probably 50% higher (Rackham 1989).

### 3.5.2 Human Factors

**A. Visitors:** It is estimated that there are over 450,000 visitors to the Forest annually (2014) and numbers have been rising steadily for several years, as local housing developments have continued. It is extremely popular for families especially during the summer months. People can drive their cars down to the lake area and make use of the cafe and other facilities, so this is a honeypot area. The site is also well used by local dog walkers, and increasing numbers are accessing the Forest from the Flich Way. The net result has been clear trampling impact on the soils and vegetation and some areas do not recover in the summer. Thus the 'Every Step Counts' project is underway to increase the resilience of the Forest to human impacts.

**B. Vehicles:** There are three car parks, one and a half of which are grass and only usable when ground conditions allow. In winter, the access road to the large Lake area car park is closed and all visitors have to park at the entrance gate car park other than at weekends. This can lead to an issue when the surfaced car parks become full, especially during events. Intermittently there are incidents of rutting and soil erosion where cars are parked on verges or attempt to drive on to waterlogged grass.

**C. Fishing:** Fishing is allowed on the main Lake at the Forest from two sides only and both season tickets (limit 25) and day tickets are popular. Fishermen adhere to a list of terms and conditions and tend to be responsible.

**D. Horse Riding:** Horse riding is administered by the National Trust under guidance from the Hatfield Forest Riding Association (HFRA) Committee. Membership is limited to 150. Horse riding has in the past been the single most damaging activity taking place on the Forest. Damage by horse riding has since 1991 been brought within acceptable limits. The Countryside Manager attends Committee meetings and implements all reasonable actions identified.

**E. Air Pollution:** The proximity of Stansted airport, residential areas and major roads means that air pollution is an issue for the Forest. Air pollution monitoring indicates that levels of nitrogen oxides are likely to be of potential harm to the biology of the Forest, especially the epiphytes, based on current scientific studies.

**F. Agriculture:** Grazing has never ceased on the Forest throughout its history and much of the importance of the wood pasture is due to the extensive grazing regime. The long-term viability of extensive cattle grazing is under threat due to changes in the economic situation and support mechanisms for farmers.

### **3.5.3 Legal Constraints**

The legal constraints requiring consideration as part of the management of the reserve are numerous. The National Trust has a responsibility to exercise a duty of care to all of its staff, contractors and customers, particularly in respect of site hazards and to ensure as far as practicable the safety of all who visit the reserve. Constraints under the following acts may apply:

- Countryside & Right of Way Act 2000
- Wildlife and Countryside Act 1981 (As Amended)
- Conservation (Natural Habitats &c.) Regulations 1994
- The Firearms Acts 1968 (as amended)
- Occupiers Liability Act
- Health and Safety at Work Act 1974 (and 1981)
- Agriculture (Safety, Health and Welfare Provision) Act 1956

Land at the Forest is also entered into Government Grant Schemes and will have to comply with the terms of these Grants:

- Countryside Stewardship (Woodland) 2015-2020
- Higher Level Stewardship Agreement 2011-2021

### **3.5.4 Constraints of Tenure**

The National Trust owns all of the land covered by the Conservation Management Plan and there are no constraints of tenure that are considered to be significantly detrimental to the management of the reserve.

### **3.5.5 Management Constraints**

The General Manager is responsible for overall management of National Trust properties in Essex, Bedfordshire and Hertfordshire. The Countryside Manager for Essex heads up a team of the two Countryside Rangers who are based solely at Hatfield Forest. The Property Operations Manager leads the Visitor Services Department and commercial

operations. Staff are supported by the Property Administrator. There are support consultancy and advisory staff at a regional and central level. The management of the Property is assisted by a Local Committee, which meets quarterly.

The National Trust encourages the use of volunteers, in fact, volunteers are critical to the operation of Hatfield Forest. Volunteers are therefore regularly sought to assist in each Department. Volunteer accommodation for one long-term Conservation / Community Volunteer Ranger is also provided in the Estate Office building.

### **3.6 Rationale**

It is Natural England policy that the requirements of SSSI and S41 priority nature conservation objectives must be given top priority on NNRs. The impact of all proposed management projects must be assessed first in relation to the national interest features therefore NE is contacted early in the planning stages of any operation

The National Trust has a number of Instructions, Policies and Guidance Notes that inform the management of its properties. The Hatfield Forest Conservation Management Plan translates the Priority Objectives from the NNR Plan as well as the NT's own objectives relevant to the Countryside Department into the local context and provides the overarching vision for the Forest landscape in terms of its conservation and access provided.

Further rationales are provided for each of the Operational Objectives (Part 4).



## **PART 4: OPERATIONAL OBJECTIVES AND PRESCRIPTIONS**

### **Objective 1 Subject to natural change, to maintain the wood pasture habitat in favourable condition.**

#### Rationale

The wood pasture habitat, with its veteran trees, grazed grassland, fen and scrub, is of great significance at Hatfield Forest. The habitat requires active management, but this will vary depending on which element of the habitat is being considered.

Veteran Trees: The primary aim with the veteran trees is to prolong their life through careful, individual specific management, such as crown reduction or careful restoration pollarding. Many of these trees are too long out of the pollard management cycle to consider full pollarding and the risk of mortality is too high.

The Hatfield Forest Veteran Tree Survey (Fay & Fay 2001 / Fay and Monck 2014) mapped over 900 veteran trees across the Plains, each tree was assessed and an individual management plan was produced for each veteran tree (Plans held at NT Office and on a Mytrees GIS database). The 2001 survey indicated that 82% of the veteran trees within the wood pasture have high viability. The 2014 survey indicated a rise in this score and a vastly decreased probability of decline or collapse score. This demonstrates clearly that the effort in the last fifteen years to restore the veteran tree population has been well worthwhile. The current strategy is still to focus management on the stronger, more vigorous veteran pollards with the objective to prolong their life, phasing operations on individual trees over many years in most cases. No or minimal management will be carried out on the veteran trees in the latter stages of their decline.

Two important restrictions on the veteran tree management are Health and Safety legislation plus the National Trust tree safety policy in areas of high public use (roads, car parks, Shell House area) and the high cost of individual tree management.

Pollard Creation and ongoing maintenance: New pollards have only been created in the last 20 years, before that there have been no new ones since the turn of the 1800s. This leaves a significant generation gap, which will take many decades of work to address. The aim is to create about 40 maiden pollards each year. There are no written descriptions of how to create maiden pollards thus such work will need to be carried out carefully, monitored and reviewed to maximise success over time. Current practice is to identify potential trees when scrub is cleared, leave them for 2 years for epicormic growth to occur and then reduce the crown in 1, 2 or 3 stages, depending on individual tree character, to create the pollard. Six trees are planted every year within the wood pasture, protected with a guard and pollarded as maidens at c. 10 years old. All planted trees are on the Mytrees database and will be cut on a traditional Hatfield Forest pollard cycle of between 15 and 25 years, depending on rate of regrowth.

Cattle Grazing and Grassland Management: The maintenance of summer cattle grazing at levels which are ideal for conservation is one of the most difficult elements to control. A local beef farmer currently carries out grazing under licence. The HLS outcome ensures grazing density is moderately low and there are no inorganic nutrient inputs. However, the animals are not organic although ivermectin products are not used. The loss of the cattle grazier is a significant risk given the scarcity of cattle farmers in Herts and Essex. The Forest is divided into two large grazing units

and the cattle come on to the Forest from 1st May to 31st October. Creeping thistle, spear thistle and ragwort are natural elements of the grasslands at Hatfield Forest and valuable for many invertebrates. These species will show year-to-year fluctuations in abundance but extensive and invasive stands will need to be controlled. Such stands of thistles are topped each year (late June to early August depending on seasonality) and ragwort hand-pulled if required. Chemical control is not desirable, but may be used if necessary, subject to Natural England's consent. Recent operations appear to be working well. Ragwort is currently scarce but was abundant in the 1950s.

Scrub Management and Wood Pasture Expansion: Historically, there will have been significant variations in grazing pressure and thus areas of scrub have developed in the wood pasture. Scrub is a valuable habitat, especially as there are veteran hawthorn trees, which support rare invertebrates and an abundance of mistletoe. However, there is approximately 32.5 hectares of dense hawthorn scrub (about 25% of the original wood pasture), thus the area of scrub can be reduced and wood pasture expanded, with maiden pollards created. The aim is to clear 1 ha of dense scrub per year in order to compensate for the establishment of thicket stage scrub – more valuable as habitat - where appropriate elsewhere, thus maintaining an equilibrium. Scrub establishment will be monitored closely, particularly in areas of high ecological, geological, archaeological or landscape value and target cutting at these locations will be undertaken. After scrub is cleared, suitable standards are left to develop open grown character. Other standards may be selected for 'veteranisation' which is managed premature ageing to help bridge the generation gap between veteran and new pollards. Wherever possible, periodic sheep grazing is introduced in years 2 to 6 to establish the sward and then the area is opened up to the cattle. Where scrubs are situated in areas of high visitor usage, they are mechanically cut on a frequent basis due to sheep welfare concerns. Thistle topping also ensures that fringe scrubs bordering the coppices are prevented from developing.

Prescriptions: Veteran Trees in wood pasture areas

- 1.1 Carry out the management plan for each veteran tree
- 1.2 Monitor the growth and survival of the veteran trees at regular intervals (5 to 10 years)
- 1.3 Retain all fallen deadwood, allow opportunities for phoenix regeneration

Prescriptions: Maiden Pollards

- 1.4 Continue to create between 30 and 50 (target 40) maiden pollards each year, mainly in areas of scrub clearance and plant 5 to 8 trees in the Plains.
- 1.5 Monitor the growth and survival of maiden pollards (3 to 5 years)
- 1.6 Monitor the regrowth of maiden pollards after the first pollard cycle
- 1.7 Maintain as pollards on a 15-25 year cycle thereafter.

Prescriptions: Grassland (see **Appendix Maps 5 & 6** for grassland areas and grazing units)

- 1.8 Ensure annual summer grazing of wood pasture by a suitably small and docile breed of cattle, between from 1 May to 31 October at a density of no lower than 0.85 livestock unit (0.85 LU) per hectare of grassland and 0.85 LU per 5 hectares of grazed woodland. Monitor sward height and scrub establishment at end of grazing season and adjust grazing license accordingly to ensure correct grazing pressure.
- 1.9 Ensure compliance with Countryside Stewardship and Higher Level Stewardship Schemes

- 1.10 Control thistles by annual topping (end-June to early August) and hand-pull ragwort in areas where their density is judged too great or where their area has expanded.

Prescriptions: Scrub (see **Appendix Map 7** for scrub areas)

- 1.11 Clear scrub from 1 ha annually and convert to wood pasture as in HLS agreement. (The 1 ha may be comprised of more than one block of scrub and most will be adjacent to existing cleared areas).
- 1.12 Wherever possible, introduce sheep grazing one year after clearance using stockproof fencing and continue for c. 5 years, then open up area for cattle grazing. Alternatively, cut compartments frequently using mechanical means.
- 1.13 Retain selected trees, including old hawthorn, and for open grown standards, for veteranisation and for maiden pollard creation in cleared areas.
- 1.14 Monitor area and status of scrub habitat using aerial photographs every 10 years.

**Objective 2 To maintain the actively managed coppice habitat in favourable condition.**

Rationale

Hatfield Forest has a very long recorded history of active coppice management with a long coppice cycle. Documentary evidence (Rackam 1989) suggest a coppice cycle of at least 17 years, often longer. Hatfield Forest had approximately 200 hectares of woodland in coppice management c. 100 years ago but this management had almost ceased 70 years ago. The National Trust's vision is for coppice management to be re-instated and continued in large areas of Hatfield Forest for its historical and conservation importance, however, due to the long period with no such management, it will take many years to re-instate a sustainable, rotational coppice management. Sustainability is the key and this decision is based on the resources available (staff and volunteer time) and the current health and state of the coppice stools, largely dictated by the deer population.

Thus the long-term aim is for approximately 45% of the existing former coppice in rotational management, with a density of standards of 12 per hectare (Hatfield Forest's typical density).

The area of coppice cut each winter will be between 4 and 5 hectares depending on resources each season. A total of 100 hectares of woodland will be maintained in coppice management, with a cycle of between 25 to 35 years, depending on regrowth rate. Fencing will be used to exclude cattle from coppice compartments for at least 9 years after cutting following the historical practice at Hatfield Forest (Rackham 1989). The unusual practice of allowing cattle to browse coppices after a period of regrowth is an important part of the traditional woodland management of the site, Wall Wood being the exception to this. Coppice stools will be protected from deer browsing using the effective method of baskets although regrowth in some parts of the Forest has been good without protection. In particularly sensitive sites and where resources allow, deer fencing will be employed. It is the intention to fence Wall Wood in its entirety to protect rideside ground flora, notably the oxlip which is present there. Coppicing here is planned to resume at a rate of 1ha pa. under Countryside Stewardship Woodland Options (WD2)

**Appendix Map 4** shows the coppice compartments, date of last coppice management and dates for proposed management for those compartments due for coppicing in the next 10 years. **Appendix Map 3** and **Table C** summarise the woodland compartments, names and outline management.

#### Deer:

Fallow Deer are an integral part of the history and management of Hatfield Forest. DNA testing of Hatfield Forest deer has suggested that the Fallow Deer originate from Sicily and so may be direct descendants of those introduced by Henry I. Deer numbers will have fluctuated over the centuries. Muntjac deer were first seen at the Forest in 1964 and result from escaping from Woburn Abbey in the early 20<sup>th</sup> Century. The numbers of deer in southern East Anglia are far higher at present than for several centuries following a series of mild winters and the Foot and Mouth outbreak (The Deer Initiative website). Also, the M11 and A120 have trapped deer in the vicinity of the Forest. This has put greater pressure on the Forest ecosystems as deer populations appear to increase through reproduction and immigration. Deer favour browsing to grazing, in that they prefer to eat the leaves, shoots and even bark of woody plants. If their numbers begin to outstrip the food supply, their effect in the woodland can be devastating and today they are the single biggest threat to the woodland of the UK. The level of damage to the coppice became unsustainable during the early 2000s and a reduction cull is still necessary. An annual deer census is carried out using a variety of different techniques including thermal imaging at night and deer impact assessments within the coppice. It is estimated that Hatfield Forest at present (2015) has a fallow herd of approximately 180 fallow and 50 muntjac. The ideal herd number is 120 fallow and no muntjac.

The cull target is set prior to the beginning of the season which for fallow begins on the 1<sup>st</sup> of August. Muntjac have no closed season because they breed all year round. The culling itself is normally carried out at dawn or dusk by professionally trained NT staff and volunteer deer stalkers with a rifle, sometimes from a high seat but often on foot. Deer management by neighbouring landowners has been variable although an informal Deer Management Group exists, consisting of the NT and several key neighbours. Patchy cull records are obtained by active participants although it is a fact that deer favour those areas not stalked in which to lie up during daylight hours. The number of dog walkers using the Forest can have a significant effect on the movements of deer and cull success, whereby their repetitive disturbance and persecution leads to herds resorting to evacuating the Forest or finding unstalkable, dense scrub during the daytime. There must be a concerted effort to address the issue by public engagement and education.

Adding to the final cull figure are numbers of deer killed on local roads.

The Forest has a deer processing unit to include butchery and venison is sold. The Forest cull target will not be increased with the unit being introduced, it will merely maximize revenue from those deer culled.

#### Prescriptions

##### Coppice

- 2.1 Cut between 4 and 5 hectares of coppice annually (see **Appendix Map 4**).
- 2.2 Fence coppice from cattle grazing for at least 9 years
- 2.3 Use baskets or deer fencing to protect cut stools from deer browsing

##### Deer

- 2.4 Continue deer management in partnership with volunteer stalkers, neighbouring landowners and utilizing figures submitted by deer dispatch officer. A) a population

reduction cull of 60% of herd based on annual census figure; then B) maintenance cull of 40% of the estimated deer population once deer impact assessment shows low level of damage. Both figures allow for number of fawns born between census and fallow open season increasing the overall herd number. Maximize effort on muntjac cull especially when fallow are not in season.

- 2.5 Undertake annual deer census and impact assessments and monitor browsing of coppice regrowth and ground vegetation to dictate cull target
- 2.6 Review Deer Management Plan and cull target annually.
- 2.7 Progress the local deer management group initiative.

### **Objective 3 To allow minimum intervention areas of woodland to develop.**

#### Rationale

Several areas of the coppice woodlands have not been managed as coppice for in excess of 75 years, possibly longer. In these areas the outcome of the re-instatement of coppice management would be uncertain. There are also resource implications and the area of active coppice management must not exceed the capacity of the staff and volunteer labour. The survival of the coppice is paramount, therefore its protection with baskets or deer fence must be guaranteed for as long as the deer population remains high. Minimum intervention woodland will be allowed to develop mixed age and species composition in response to the environmental conditions. Natural regeneration will occur in pulses in response to gap creation and variations in seed production and grazing pressure. Dead wood will accumulate and provide important habitat. The gap creation rate is at present reasonably low but where glades or thinnings are cut artificially, natural regeneration occurs only where bramble establishes to protect seedlings from deer and cattle. The quantity of dead wood is quantified, and there is a sufficient quantity in all areas. In addition, there are veteran trees within the coppices, such as old oak stools. These are deemed unviable for re-coppicing although their long term survival may be secured using veteran tree prescriptions such as retrenchment pruning.

About 50% of the woodland is minimum intervention (see **Appendix Map 4** and **Table C**) and includes areas in Street (Cmpts 3 & 4), Gravel Pit (29), Lodge (36, 37, 38, 39, 40 & 41), Round (32 & 35) and Emblem's Coppices (49). An area of 4 ha in Lodge Coppice (37) will be non-intervention woodland as this is where a Korean Airlines aircraft from Stansted crashed in December 1999 and has been fenced indefinitely for Health and Safety reasons.

Cattle can roam freely in most areas set aside for minimum intervention in the south of the Forest, so grazing and browsing takes place as this was a significant part of the historic management of the Forest. Deer cannot be practicably excluded from most large areas of the Forest, only individual compartments where the coppice is in rotation.

#### Prescriptions

- 3.1 Maintain the rides, glades and paths within minimum intervention areas. Annually flail one half of the ride side ditches.
- 3.2 Periodically review these areas for tree regeneration, gap creation, stand structure and dead wood accumulation.
- 3.3 Carry out veteran coppice stool survey (active and minimal intervention areas)

**Objective 4 To restore broadleaved deciduous woodland in areas of conifer woodland.**

Rationale

Conifer plantations in the Forest were heavily thinned (90%) in 2009, in Spittlemore Coppice South (13), Collins Coppice (47), Emblem's Coppice (49) and Wall Wood (57). Regeneration will be monitored in these woods and conifer seedlings will be removed.

Individual conifer trees will be retained within the important Capability Brown landscaped park area of the Forest near the Lake (29) due to their historical significance. These trees also contribute to the overall biodiversity.

Prescriptions

- 4.1 Monitor density & species composition of regeneration throughout all plantations (57, 49, 13, 47 & 29) following thinning (and replanting in 49). Replant & fence if necessary.

**Objective 5 Subject to natural change, to maintain populations of nationally rare and scarce plant, fungi and invertebrate species and assemblages.**

Rationale

The importance of the Forest is not only for its habitats but also with regard to the diversity and rarity of species it sustains. Of particular importance are the species assemblages associated with the veteran trees and ancient woodland, such as saproxylic invertebrates (especially beetles), epiphytic lichens and mosses and the fungi. It is not possible to monitor the majority of these species, due to the specialist taxonomic knowledge required, or because their population dynamics are unknown. The epiphytic lichen and moss communities may reflect the local air quality and thus might be a valuable indicator for environmental changes. Oxlip populations at Hatfield Forest may be negatively impacted by deer grazing, thus these need to be monitored and deer exclusion areas may need to be set up (eg. Wall Wood). It will be necessary also to successfully manage the deer population to render deer impact as insignificant.

Prescriptions

- 5.1 Retain all deadwood, epiphytic and saproxylic habitats.
- 5.2 Carry out periodic targeted surveys for scarce and rare species for which the Forest is an important refuge.
- 5.3 Annually monitor the Oxlip populations in the Forest and review if site specific management might be required (e.g. areas of deer fencing to allow seeding & dispersal).

**Objective 6 Survey the flora and fauna of the Forest.**

Rationale

The importance of the Forest is not only for its habitats but also with regard to the diversity of species it sustains. Recent recording activity at Hatfield Forest has revealed a significant diversity of species. Carrying out surveys for species will help to inform the management of the site and reveal its importance. In addition to carrying out surveys, it is very important to record and manage the species records, to link in with the local recording network of naturalists and the national schemes. The National Trust

commissions specialist surveys on occasions, but in the main will need to rely on amateur experts to provide species records.

Opportunities are also given to provide suitable student projects, share learning and integrate sound scientific results with the management of the property.

### Prescriptions

- 6.1 Maintain species lists for the Forest. Data to be held on spreadsheets, on RECORDER 6 at NT Head Office, and send records to the National Biodiversity Network at least once per plan period.
- 6.2 Instigate use of MapInfo GIS for the monitoring of habitat data.
- 6.3 Encourage survey and recording of the widest range of taxa, through links with local experts, arranging field excursions, and developing links with the Essex Field Club
- 6.4 Maintain links and exchange data with Essex County Recorders and national recording schemes.
- 6.5 Liaise with Bishops Stortford Natural History Society to carry out the annual Breeding Bird (4 areas of the Forest regularly surveyed since 1996) and Dormouse Surveys.
- 6.6 Publish important finds in appropriate media, including the NT website and Nature Conservation Newsletter.
- 6.7 Annually update a list of potential student project and send to Universities in region and post on HF website.

## **Objective 7 Maintain the wetland, lake, wet ditch and pond habitats**

### Rationale

Hatfield Forest supports important wetland habitats for Essex, especially the marsh at the north end of the Lake and the fen habitat alongside the Shermore Brook and by Old Womans Weaver. The water quality of these habitats seems to be good, probably because most of the catchment is within the Forest although the Shermore Brook does flow through an arable field and is culverted under roads and houses before entering the north end of Forest. Meanders were re-created along the middle section of the Shermore Brook in the last 20 years and the wetland, fen and marshy areas have increased in area. The north section of the Brook, before it reaches Old Womans Weaver, is in deep shade cast from dense, young hawthorn scrub and appears to have been straightened in the past. The habitat would benefit from being opened up and meanders created.

There is valuable marginal wetland habitat around the Lake, especially on the north-east side, and an ungrazed reed-swamp (*Phragmites-Typha*) at the north end. The extent of these habitats was significantly altered when the Lake level was raised by the building of a new dam in the early 1980s. The marsh was cleared of scrub/willow in the last plan period, as was the reed-swamp, and both areas have responded well to this management. The Lake water level had been lowered by 46cm in 2007, to reduce water 'ponding' in the Shell House area. After this, the shallow margins of the Lake rapidly colonized with sedges and rushes.

There are a few ponds in the Forest, yet their density is lower than the surrounding countryside (Rackham, 1980). These ponds are known to support common frog, toad, smooth and great crested newt (the latter at a low density in the north end of Forest). The ditches alongside some of the woodland rides support a wetland community of plants and invertebrates, and occasionally amphibians. The ponds and ditches require some rotational management of the silt and vegetation to ensure that a range of successional

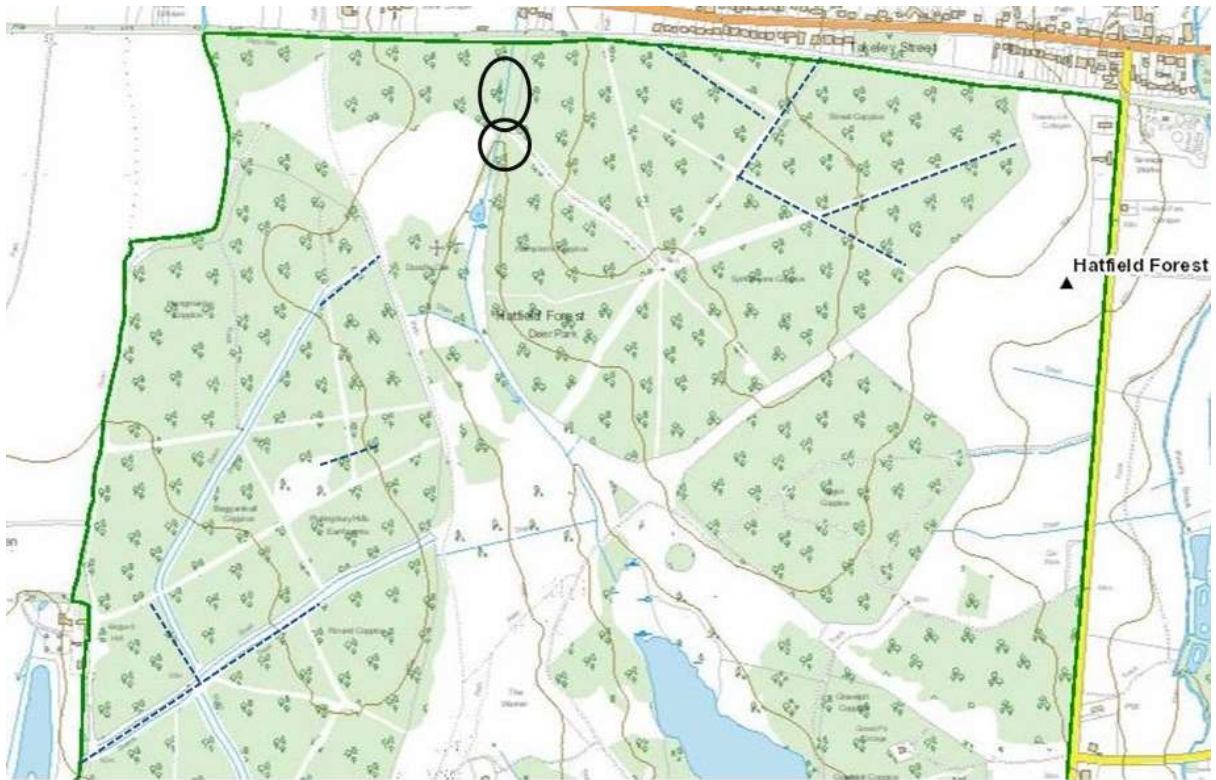
stages are maintained across the Forest.

A significant part of the species diversity and local rarity of Hatfield Forest is associated with the wetland habitats. S41 priority and other special species are present such as Flat Sedge, Tubular water-dropwort, good populations of twayblade, common spotted and marsh orchids, and numerous local or nationally scarce invertebrates.

#### Prescriptions

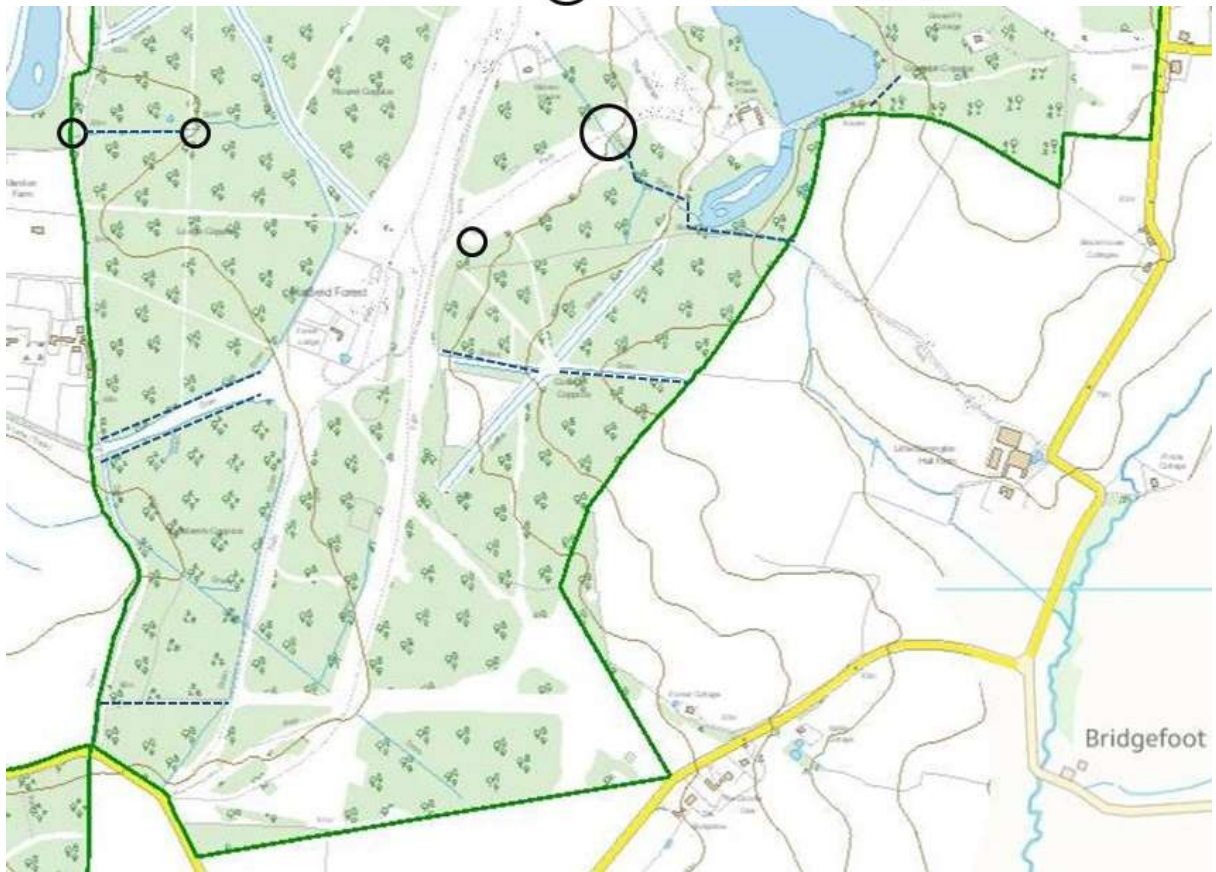
- 7.1 Maintain the marsh and fen habitats by the Lake and at Old Womans Weaver, through autumn sheep grazing and occasional scrub regeneration control.
- 7.2 Maintain the reed-swamp habitats by annual rotational reed cutting & removal of thatch in the Lake delta. A 4-year rotation in 4 compartments is the current plan.
- 7.3 Occasionally cut back woody growth around the woodland ponds and especially Old Womans Weaver and the Decoy Pond, to allow sunlight to penetrate.
- 7.4 Review the management of the lake, its fish populations, water levels and water quality, every three years. Review turbidity of Decoy Lake and instigate removal of carp & tench if eutrophication/turbidity becomes an issue. Net smaller fish periodically from both lakes to assist fish population dynamics and create a more attractive fishery in the Main Lake.
- 7.5 Further extend the meander creation along the Shermore Brook north and South of London Bridge as and when neighbouring scrub is cut so that access & excavation is possible. Remove scrub from around the Brook to the north of Old Womans Weaver and consider if meander creation is feasible (black oval on map).
- 7.6 Repair and restore culverts under important paths and rides. In this plan period, culverts to be tackled will be north of Old Womans Weaver, Cedar Ride near the car-park, Cedar Ride near the main plain, and two on the west side of the Forest (black circles on map).
- 7.7 Rotationally clear woodland ride side ditches of silt and vegetation. No more than 1/20<sup>th</sup> of the ditch network to be tackled in any one year. Silt, if removed, will be spread thinly in the woodland edges. Priority areas to be tackled in this plan are shown by dotted blue lines on the maps.





-----  
 Ditches which are a priority to clear & de-silt in this Plan

○  
 Location for where culvert work required



**Objective 8 Prevent as far as is practical the negative impacts caused by pests, diseases and invasive non-native species.**

Rationale

Hatfield Forest is one of the largest areas of semi-natural habitat in Essex, thus the establishment of invasive pests, diseases and non-native species would be a significant negative impact on the ecosystems. Of particular threat are Acute Oak Decline, Canada Geese in the Lake area and invasive plant species such as Japanese Knotweed, Australian Swampcress (*Crassula*) and Himalayan Balsam.

Prescriptions

- 8.1 Maintain vigilance for symptoms of pests and diseases, particularly in trees. Take action following current NE/FCE/Defra/NT guidance and policy.
- 8.2 Maintain Canada goose population to ensure no goslings hatch annually and no more than 12 resident adult birds annually through egg-oiling and culling.
- 8.3 Manage signal crayfish population by regular, licensed trapping.
- 8.4 Monitor the small stands of Japanese Knotweed by the Dam and in Elgins Coppice and attempt eradication.
- 8.5 Attempt to eliminate invasive non-native plant species should they occur, using best available techniques.

**Objective 9 Deepen the interest of the public in Hatfield Forest as a premier site for conservation through creative interpretation, events and educational use aimed at all visitor segments.**

Rationale

All staff at Hatfield Forest have a mutual obligation to ensure that the countryside elements which make the site internationally important are conveyed in an interesting and understandable way. Support in providing assistance with interpretation is available through the Visitor Engagement Manager for Hatfield Forest.

Prescriptions

- 9.1 Interpret the biodiversity and conservation elements of the Forest using a variety of different media, to include leaflets, Discovery Room displays, website content, adult courses, bookable guided walks, impromptu Conservation in Action walks, power point talks.
- 9.2 Implement the NT Land Outdoor and Nature Programme 'turning up the volume' on what the Countryside Department does in the countryside. This will involve thinking about interpretation of every project and aspects of the annual work programme in the same way as 9.1

**Objective 10 Value and protect the archaeological and historical interest of the site.**

Rationale

There are two Scheduled Monuments at Hatfield Forest, the Warren and Portingbury Hills. A NT funded archaeological survey in 2003-04 identified a large number of earthworks, ditches and mounds of significance. These are well documented in the 'Archaeological & Historic Landscape Survey' for Hatfield Forest, July 2010. The Lake Area is a landscape designed by Capability Brown which is of historical significance.

Prescriptions

- 10.1 Interpret the Archaeological survey and report

- 10.2 Keep the Portingbury Hills clear of scrub
- 10.3 Review the health of the Horse Chestnut trees on the Warren and develop a management plan for future tree planting and site management following archaeological / curatorial guidelines and public safety policy in conjunction with the Lake Area Conservation Management Plan
- 10.4 Allow curatorial guidance to influence priority and areas of scrub to be cut around Cedar Ride and the Warren pillow mounds, also in conjunction with the Lake Area Conservation Management Plan.

**Objective 11 Ensure safe and sustainable use of the site by the public, volunteers and staff.**

Rationale

All work carried out on the property must be done so in full accordance with the Health and Safety at Work Act 1974 and other relevant health and safety codes of conduct and guidance. The National Trust will ensure that all staff and volunteers are trained, competent, well deployed and appropriately resourced to enable compliance with legal responsibilities. In addition, The National Trust has a duty of care to all visitors and will seek to ensure that the safety of visitors, contractors and employees is paramount.

Prescriptions

- 11.1 Carry out NT's Tree Safety Management procedures, record the results and carry out necessary management.
- 11.2 Monthly inspect Stiles, Bridges and Gates and carry out necessary maintenance works.
- 11.3 Carry out Access Audit to ensure DDA compliant and identify priorities for improvement and implement agreed actions.
- 11.4 Monitor visitor numbers and distribution to ensure no negative impacts on the significance of the property.
- 11.5 Ensure staff and volunteers are trained to carry out all work safely.

**Objective 12 Implement maintenance programmes for buildings and site infrastructure**

Rationale

In addition to the Prescriptions in 11 above, the following will be carried out.

Prescriptions

- 12.1 Ensure that short-term and long-term cyclical maintenance programmes are developed for all buildings and associated infrastructure.
- 12.2 Ensure all tenants maintain buildings and property in accordance with their legal obligations and tenancy agreements.
- 12.3 The Dam and sluice is inspected monthly by a competent member of staff and assessed by a structural engineer every 10 years with a clear emergency procedure in place and implementation of recommendations raised within the structural report (Reservoirs Act).
- 12.4 Regularly inspect the roads and cattle grids and action remedial work.
- 12.5 Maintain all signs.
- 12.6 Comply with all legal obligations.
- 12.7 Comply with all National Trust policies and guidance.

### **Objective 13 Maintain good relations with volunteers, local people, tenants, local authorities and conservation partners**

#### **Rationale**

Maintenance of good relations with volunteers, local people, tenants, adjacent landowners and partner organisations is essential to the management of the reserve. The Hatfield Forest Local Committee, which consists of local people and representatives from partner organisations that actively, meets quarterly and helps to guide the management of the property.

#### **Prescriptions**

- 13.1 Organise the Local Committee, annually review the membership.
- 13.2 Regularly liaise with Natural England regarding the NNR management, funding, AES delivery and the condition assessment of the SSSI.
- 13.3 Regularly liaise with Forestry Commission England regarding the woodland management and its funding.
- 13.4 Maintain good relations with the Forest Nature group for the benefit of the biological records.
- 13.5 Fully integrate volunteers to assist with the conservation work at Hatfield Forest.

## **PART 5. REFERENCES**

Alexander, K.N.A. & Lister, J.A. 2002. *Hatfield Forest, Essex*. National Trust Nature Conservation Evaluation (Unpublished). Pp58.

Dayton, N., 2002. *National Vegetation Classification Assessment of Non-Wooded Sites of Special Scientific Interest within Essex, Hertfordshire & Greater London. Site: Hatfield Forest SSSI*. Unpublished report to English Nature.

Drane, A.B., 2001. *Survey of the Saproxyllic Coleoptera of Hatfield Forest, Essex. 199-2000*. National trust Invertebrate Survey (Unpublished).

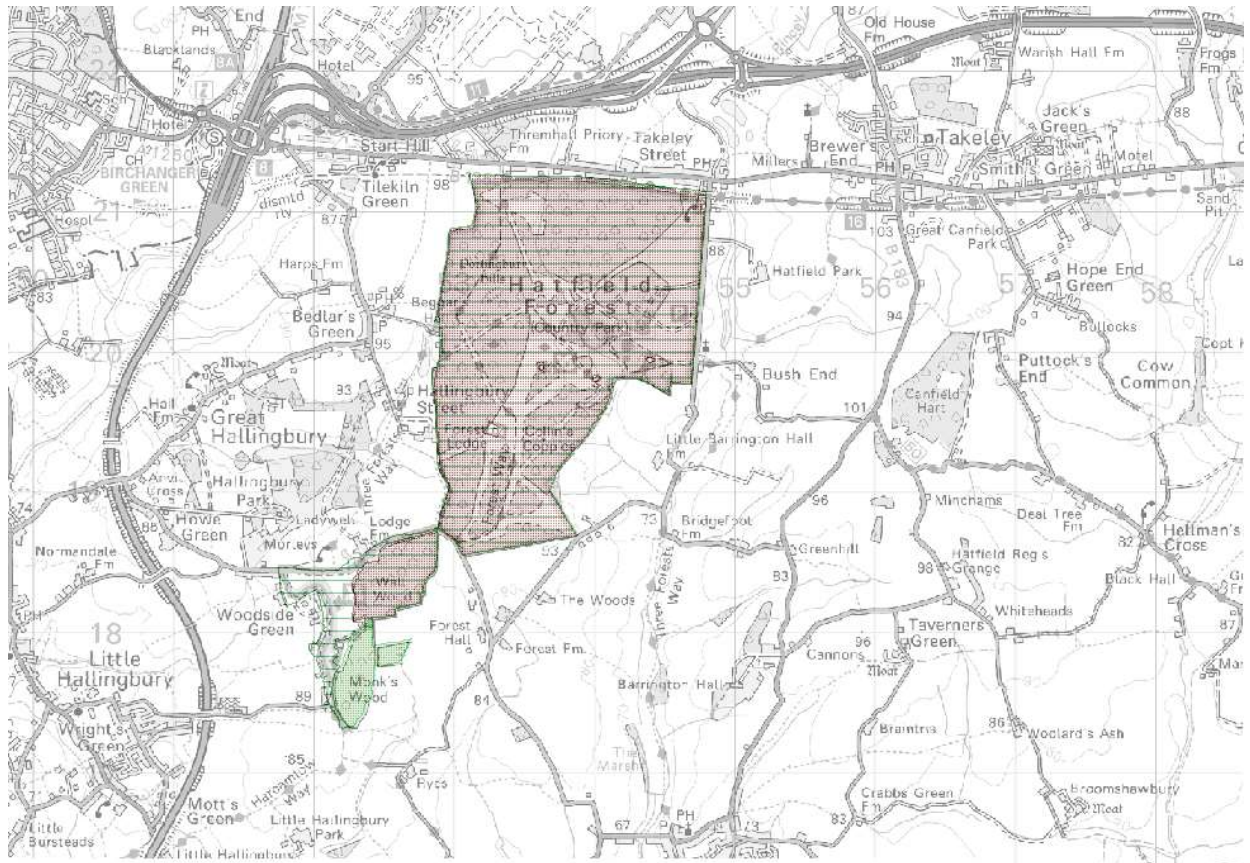
Fay, N. & Fay, L. 2001. *Hatfield Forest Veteran Tree Survey*. TreeWorks Services Ltd, contract report for the National Trust.

Lister, J.A., Alexander, K.N.A., & Hearn, K., 1989. *Hatfield Forest, Essex*. National Trust Biological Survey (Unpublished).

Rackham, O., 1989. *The Last Forest*. Phoenix Giant, London

## **PART 6. APPENDICES**

**Map 1. Hatfield Forest location and extent of National Trust land (horizontal lines).**



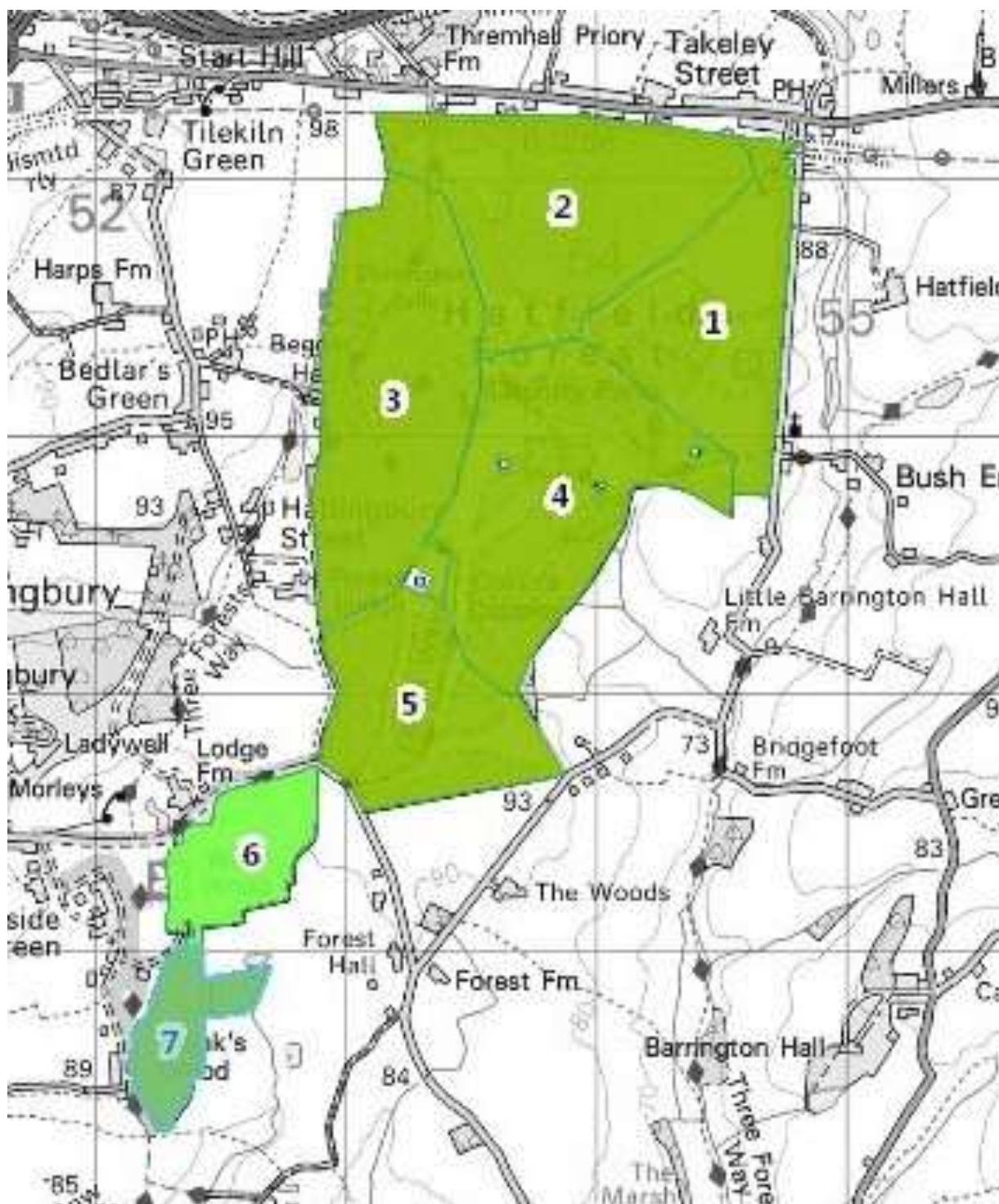
Map produced by MAGIC on February 22 2005. (C) Crown Copyright. All rights reserved. Defra 100018880 2005.

Copyright resides with the data suppliers and the map must not be reproduced without their permission.

Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation.

Please refer to the documentation for details, as information may be illustrative or representative rather than definitive at this stage.

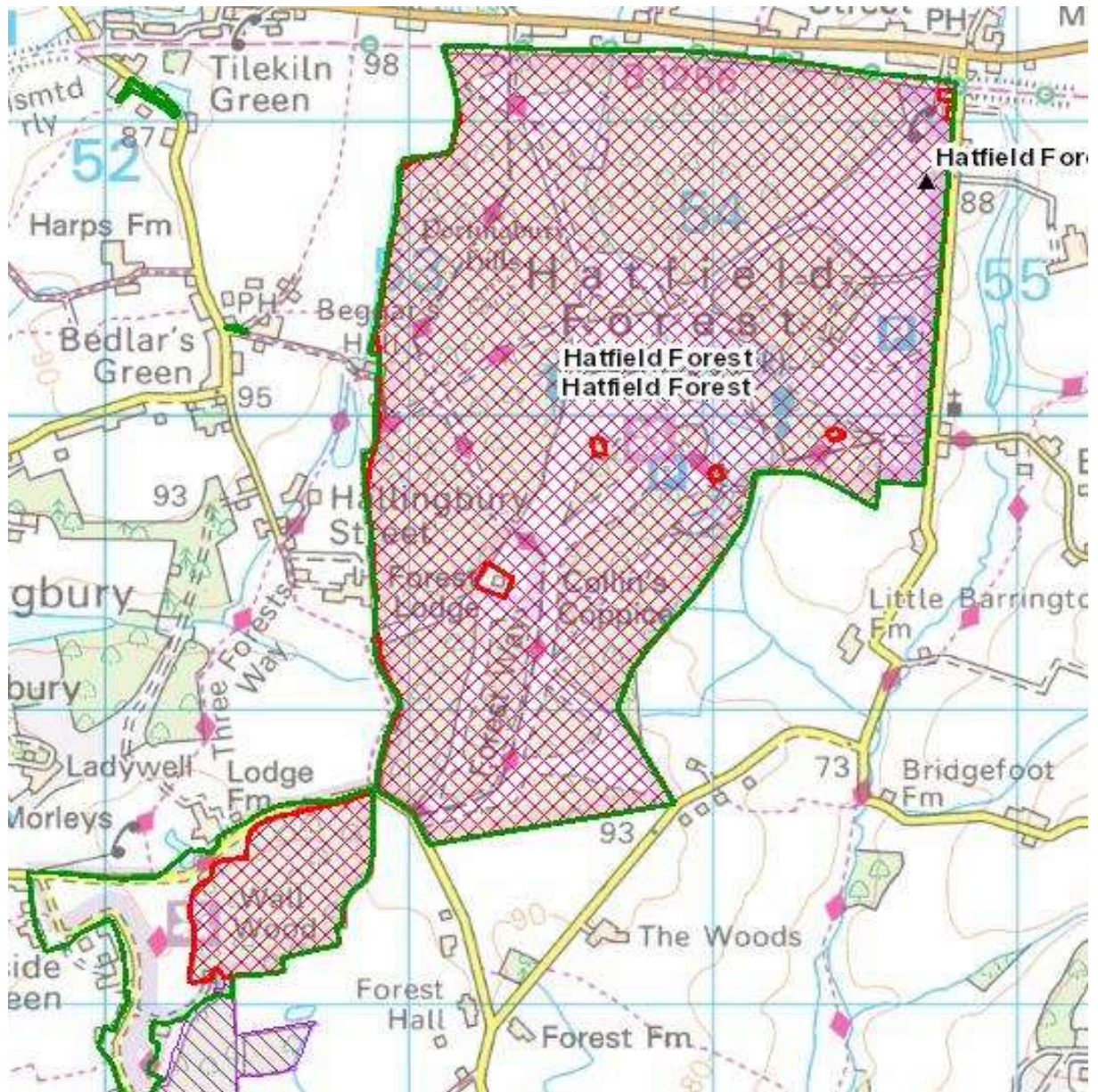
**Map 2a.** Hatfield Forest SSSI.



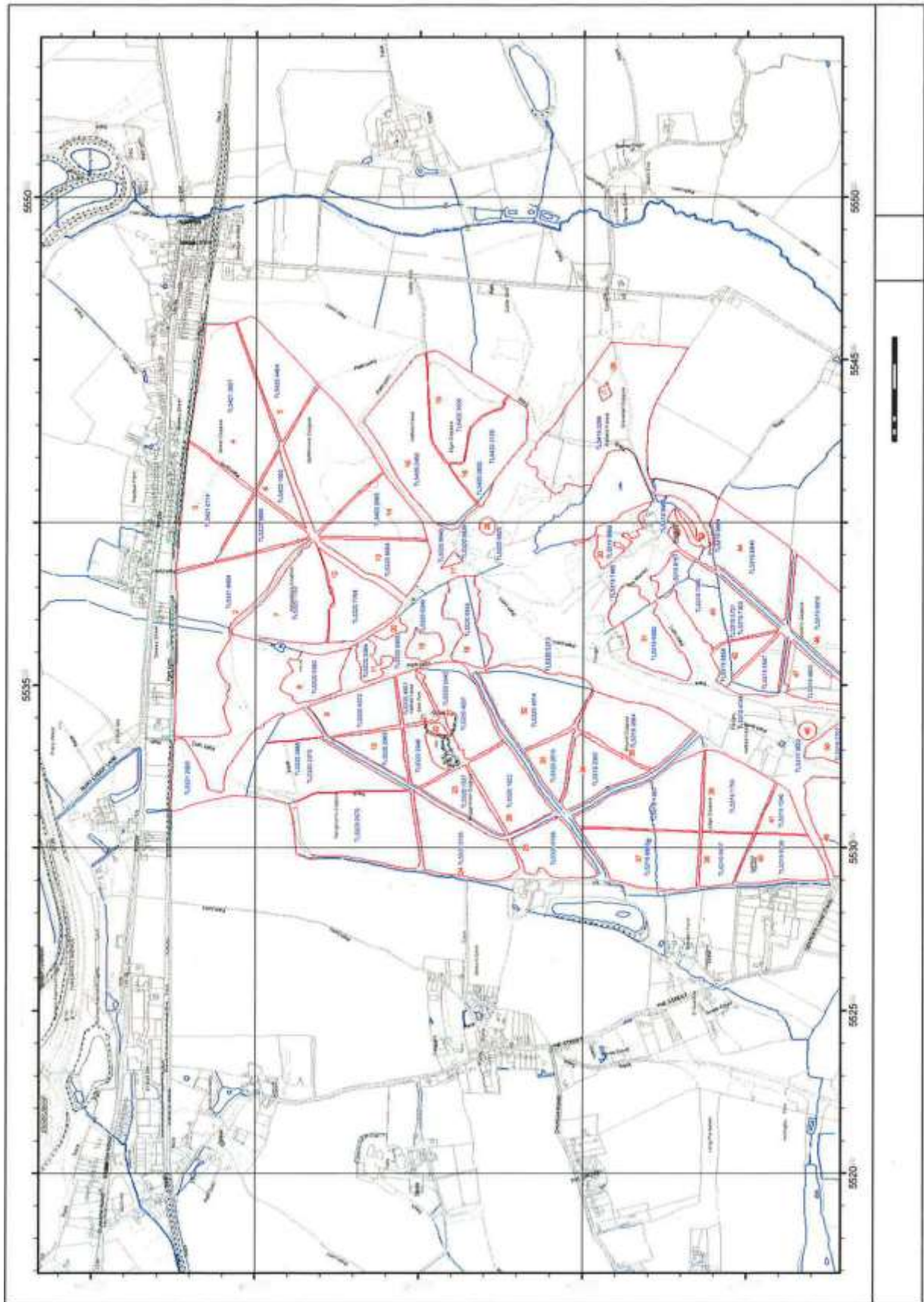
Units 1 to 5 are the Forest, all in Unfavourable Recovering condition, Unit 6 is Wall Wood in favourable condition.

Units 1 to 6 are owned and managed by the National Trust and are within the NNR. Unit 7 is Monks Wood, which is part of the SSSI, but in private ownership, thus it is excluded from the NNR.

**Map 2b.** Hatfield Forest SSSI and NNR boundary (red) with the NT ownership boundary (green)

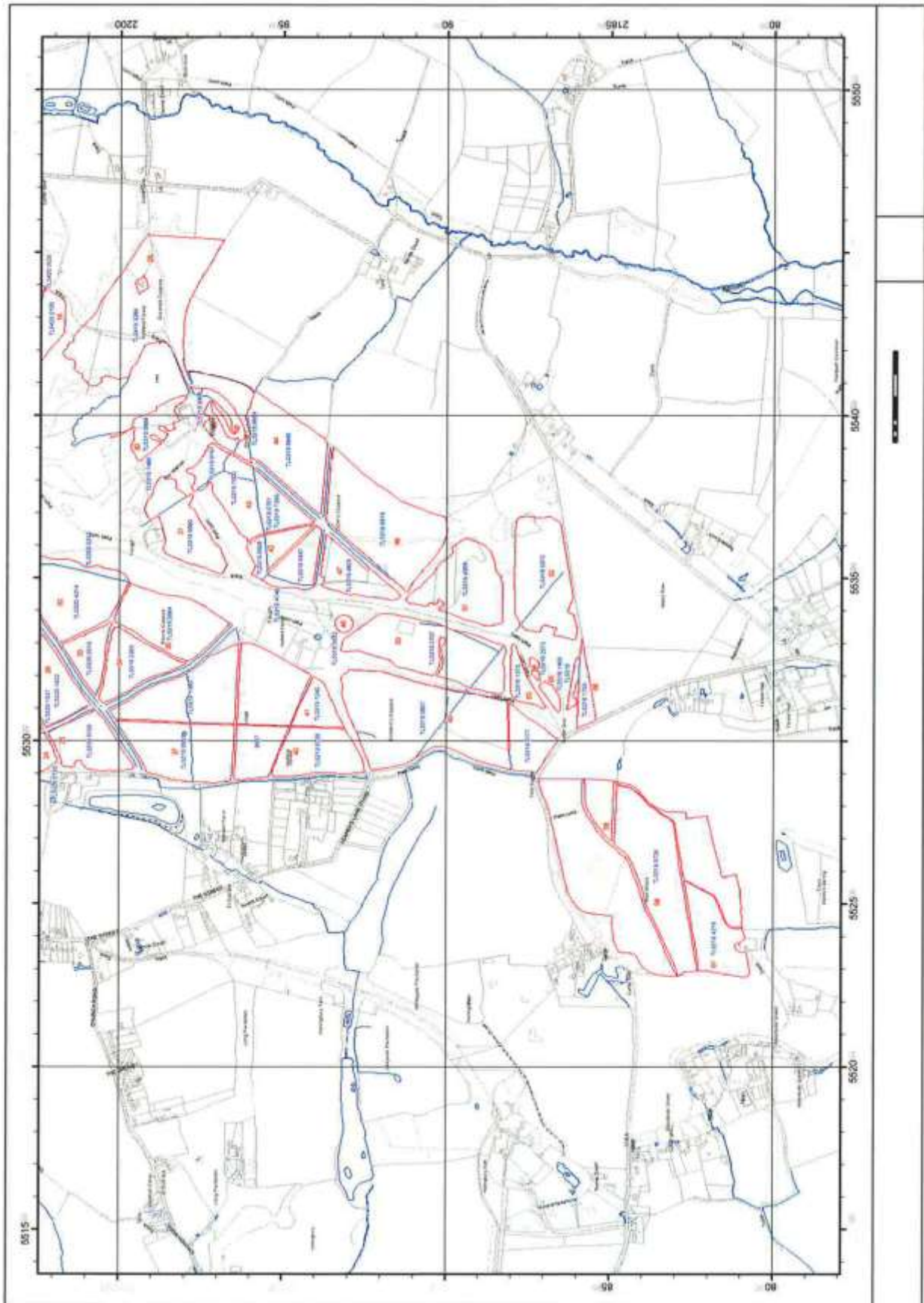


**Map 3.** Forestry Commission Hatfield Forest compartment numbering (1 of 2)



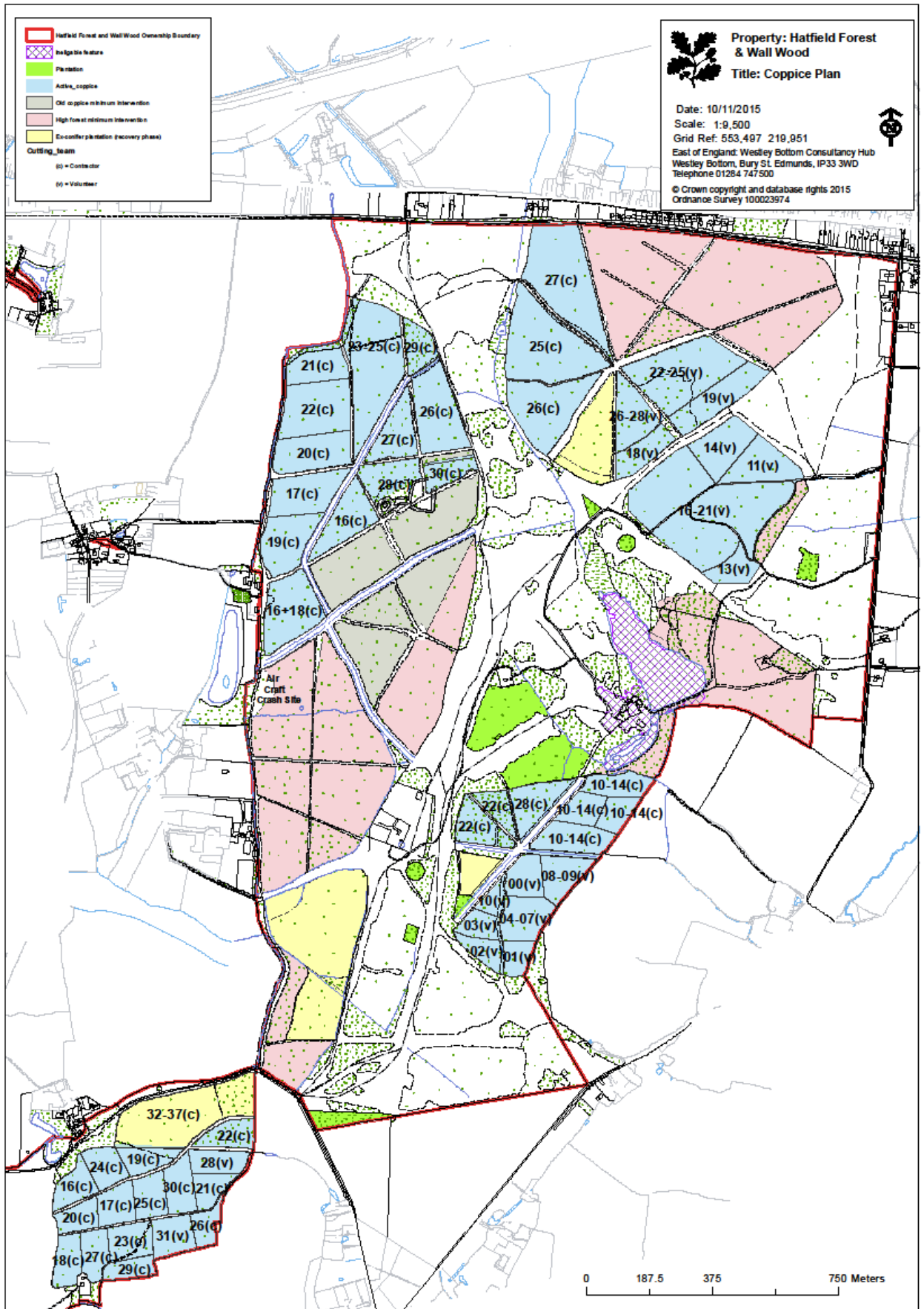


**Map 3.** Forestry Commission Hatfield Forest compartment numbering (2 of 2)

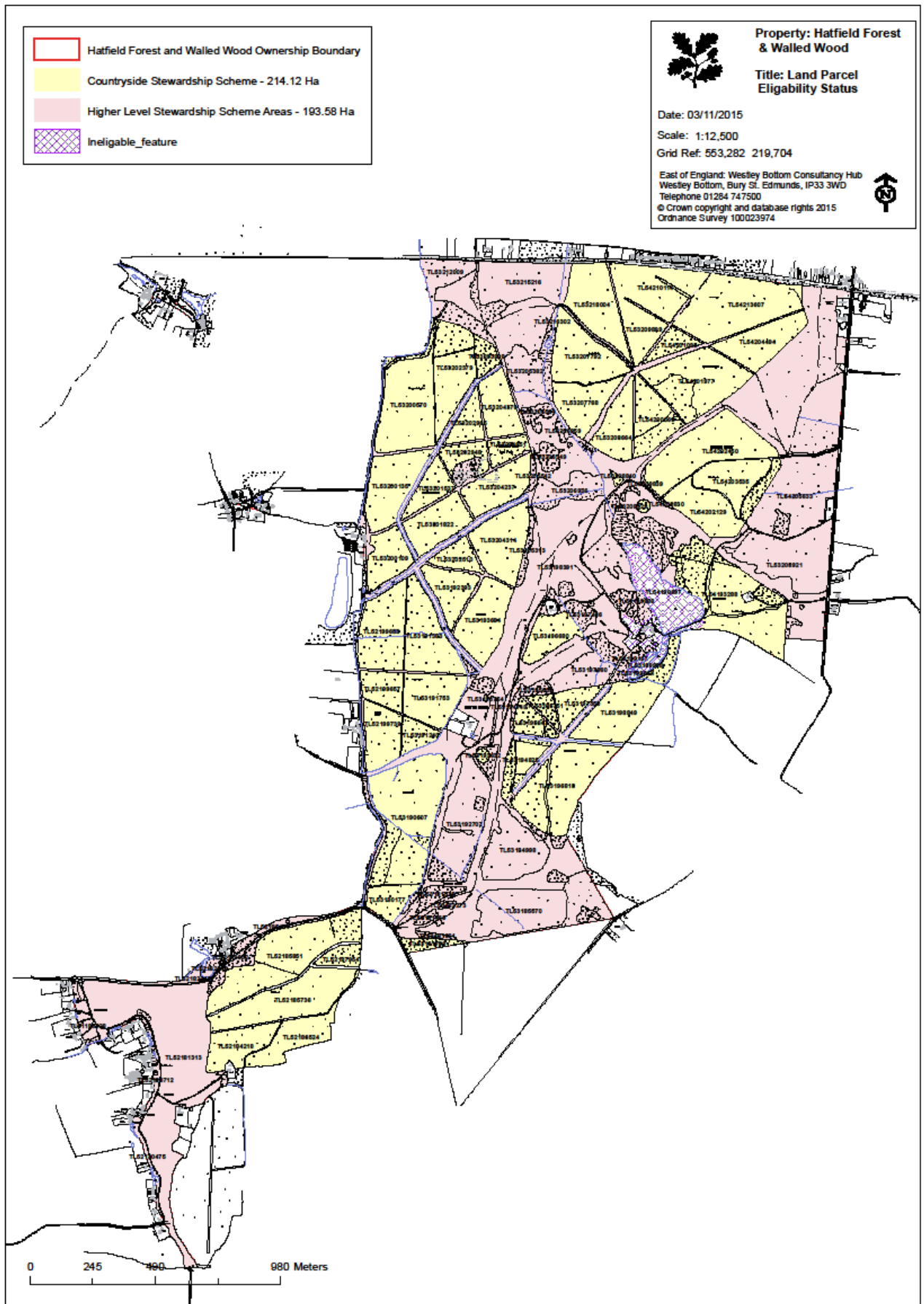


**Map 4.** Woodland Management. Active Coppice Areas (date area cut), Minimum

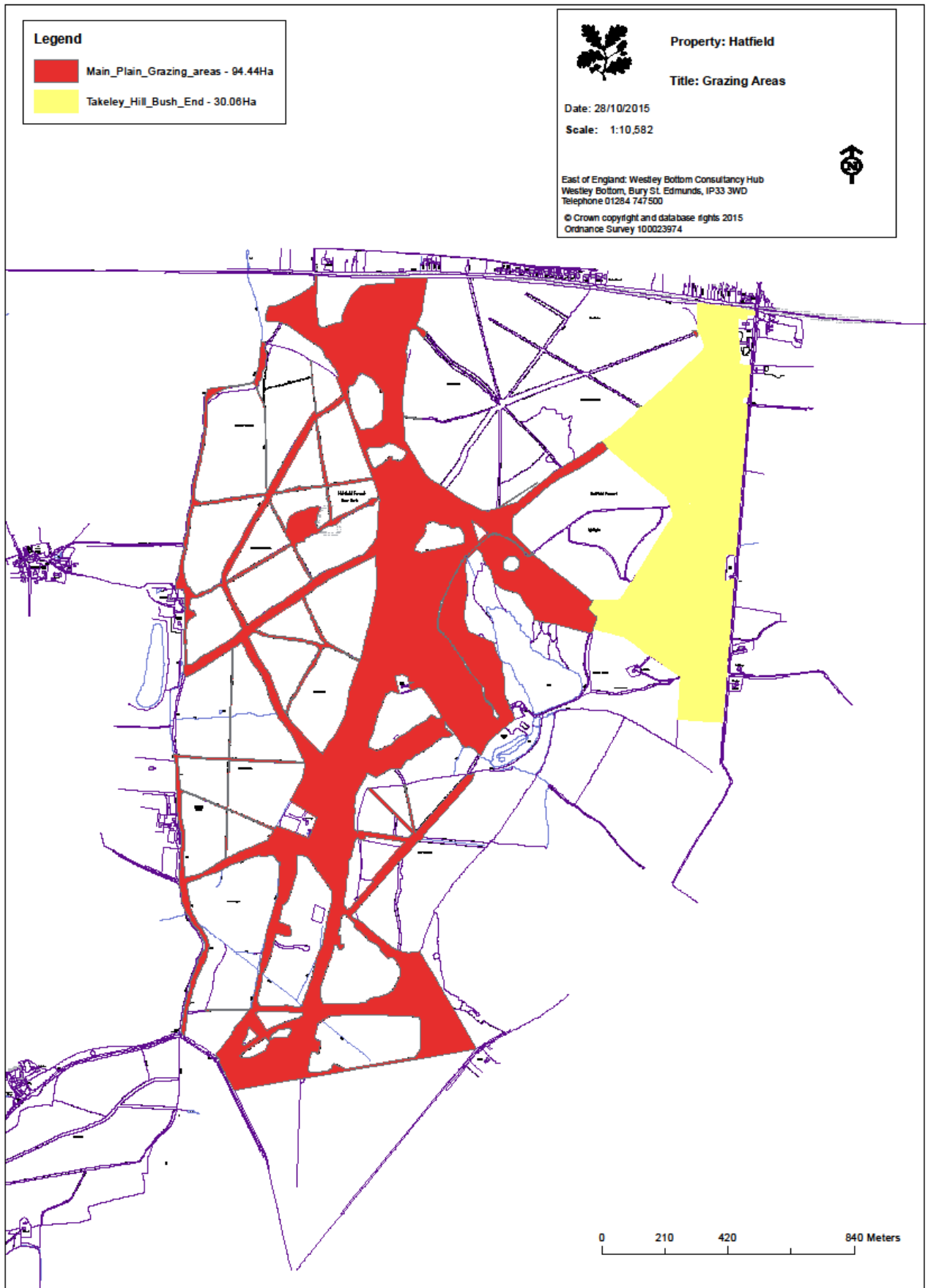
# Intervention & Plantations.



Map 5. Rural Land Registry TL Compartment Map



**Map 6.** Grazing Units and Areas in Hatfield Forest



**Map 7.** Scrub clearance areas with wood pasture restoration and maiden pollard creation.



**Table A. Hatfield Forest SSSI Condition Assessment.**

The main habitat of all Units are described as 'Broadleaved, mixed and yew woodland – lowland' Source: Sites assessed by Neil Fuller (NE). Natural England Website 1 Sep 2015

Unit of SSSI	Area	Date Assessed	Condition	Comment
1. East Plains, Gravelpit & Elgin Coppice	58.6 ha	23/09/2011	Unfavourable Recovering	For the purposes of this condition assessment SSSI Units 1-5 have been considered as an entire and connected habitat mosaic. Furthermore, Unit 6 & 7 have been regarded as separate woods, not part of the wood pasture complex, and will therefore be assessed separately at a later date within their CMS cycle. The Units 1-5 inclusive have been assessed collectively as unfavourable recovering for the overall habitat mosaic, in recognition that some areas and habitats are still in a recovery phase following active management initiatives. Many habitats are regarded as currently favourable (wood pasture tree resource; some core grassland areas of MG5, U1, MG8-13 type and swampfen habitat) and more detailed notes about the habitats are provided in file notes. The targeted management undertaken by the National Trust in accordance with the consented Management Plan and the supporting EWGS and HLS provides Natural England with the confidence that progress will be sustained towards achieving optimal conditions for these SSSI units.
2. Spittlemore & Street Coppice, North Central Plain	83.2 ha	23/09/2011	Unfavourable Recovering	As for Unit 1
3. Western Coppices	88.0 ha	23/09/2011	Unfavourable Recovering	As for Unit 1
4. Central Plain, Lake, Marsh, Gravel Pit, Collin's Coppice	85.5 ha	23/09/2011	Unfavourable Recovering	As for Unit 1
5. Southern Plain, Emblem's Coppice	52.3 ha	23/09/2011	Unfavourable Recovering	As for Unit 1
6. Wall Wood	25.4 ha	19/03/2012	Favourable	Overall woodland unit is currently in borderline favourable condition (set within the context of the whole SSSI National Trust land) . Opportunities exist within consented Management Plan to target further management & optimise unit's contribution to SSSI's special interest. Extent - no loss of ancient woodland stands, veteran stools or semi-natural stands. Unit supports a mosaic of coppice-with standards and high forest, with Oak/Ash standards & Hornbeam, Hazel coppice understorey (see 2009 Survey on file) representative of W8/W10 mosaic - In contrast to NT units 1-5 there is no livestock grazing. High Forest & Coppice canopy 80-90% cover. The latter almost entirely in stored form and thus currently borderline favourable. > 3 Age Classes present, with adequate sapling recruitment but minimal coppice pole regeneration (restricted to ride edge) due to dominant stored state. Low -moderate deer browsing (eg. Fallow deer prints but primrose flowers surviving ). Open space - rides provide adequate permanent space c10%, with c 5% temporary open space provided in high forest areas by conifer thinning. Ideally additional open space could be provided by targeted re-coppicing (experimental). Adequate supply of dead wood in all forms. Composition - c5% non-native (few notable conifers to be conserved via directed winter WGS works). Ground flora mosaic representative of W8/W10 (Bourchier & Watson 2009 survey also records notables Early Purple Orchid & Oxlip). Veteran stools support typical microhabitats. Rides have been cut allowing optimal habitat for flowering.

**Table B. Summary Evaluation of Nature Conservation Features of Hatfield Forest NNR.**

Note: for plants and invertebrates, species of National Importance are S41 Priority Species or RDB listed, Regional importance are Nationally Scarce species or very rare in Essex; for birds, Red listed (RSPB/BTO) species are of National Importance, Amber-listed of Regional significance.

Feature	International	National	Regional
<b>Geology/Geomorphology</b>			
Undisturbed ancient soils		+	
<b>Habitats</b>			
Ancient wood pasture (S41 priority habitat)	+		
Veteran trees and decaying wood	+		
Ancient coppice woodland		+	
Epiphytic and saproxylic habitats	+		
Unimproved neutral grassland		+	
High forest, minimal-intervention woodland			+
Acid grassland			+
Marsh and Fen			+
Eutrophic lake, ponds			+
<b>Species: Plants</b>			
Oxlip <i>Primula elatior</i>			+
Stinking Hellebore <i>Helleborus foetidus</i>			+
Dwarf Thistle <i>Cirsium acaule</i>			+
Pale Sedge <i>Carex pallescens</i>			+
Bog Pimpernel <i>Anagallis tenella</i>			+
Flat Sedge <i>Blysmus compressus</i>		+	
Brown Sedge <i>Carex disticha</i> .			+
Upright Chickweed <i>Moenchia erecta</i>			+
Bryophyte community			+
<b>Species: Lichens and Fungi</b>			
Waxcap grassland fungi (17 species)		+	
Woodland & saproxylic fungi community		+	
<i>Hericium cirrhatus</i> (Tooth fungi)		+	
<i>Boletus albidus</i> (a fungus)		+	
<i>Boletus queletii</i> (a fungus)		+	
<i>Phellinus cavicola</i> (a fungus)		+	
<i>Junghuhnia separabilima</i> (a fungus)		+	
<i>Ganoderma</i> bracket fungi – all 5 UK species		+	
<i>Bacidia incompta</i> (S41 species)		+	
Epiphytic lichen community			+
<b>Species: Mammals</b>			
Badger			+
Water Vole			+
Bats – 7 species (incl. Daubentons)		+	
<b>Species: Birds (Breeding Species)</b>			
Song Thrush		+	
Bullfinch		+	
Reed Bunting		+	
Marsh Tit		+	
Kingfisher			+
Lesser Spotted Woodpecker			+

<b>Species: Invertebrates (for full list of RDB &amp; scarce species see Hatfield Forest property files).</b>			
Saproxylic Coleoptera community	+		
<i>Malthodes crassicornis</i> (a saproxylic beetle)		+	
<i>Procræus tibialis</i> (a saproxylic beetle)		+	
<i>Aeletes atomarius</i> (a saproxylic beetle)		+	
<i>Ischnomera caerulea</i> (a saproxylic beetle)		+	
<i>Trichonyx sulcicollis</i> (a saproxylic beetle)		+	
<i>Rhizophagus oblongicollis</i> (a saproxylic beetle)		+	
<i>Scaptia testacea</i> (a saproxylic beetle)		+	
<i>Scydmaenus rufus</i> (a saproxylic beetle)		+	
<i>Diaperis boleti</i> (a saproxylic beetle)		+	
<i>Myopites inulaedyssentericae</i> (Diptera: a fly)		+	
<i>Paraclusia tigrina</i> (Diptera: a fly)		+	
<i>Stigmus pendulus</i> (Hymenoptera: a wasp)		+	
<i>Gastrallus immarginatus</i> (saproxylic beetle)			+
Small Yellow Wave Moth <i>Hydrelia flammeolaria</i>			+
<i>Microthrix similella</i> (Lepidoptera: a pyralid)			+
<i>Philodromus albidus</i> (a spider)			+
<i>Tetragnatha striata</i> (a spider)			+



**Table C The Compartment Names, Numbers, Habitat and outline management at Hatfield Forest**

Woodland compartment nos. shown in black, area (ha) shown in blue, RLR field parcels shown in red. ASNW is ancient semi-natural woodland. SAM is a scheduled ancient monument).

Compt. No. / area / field no.	Name	Current Habitat	Outline Management	Desired State	
				0-5 Years	5+ Years
<b>Woodland</b>					
<b>3 (7.6 ha)</b> TL54210114 TL53209899	Street Coppice North & Spittlemore Coppice East	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition
<b>4 (8.5 ha)</b> TL54213607	Street Coppice: North-east	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition
<b>5 (3.91 ha)</b> TL54204494	Street Coppice: East	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition
<b>6 (1.39 ha)</b> TL54201092	Spittlemore Coppice East	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition
<b>15 (7.14 ha)</b> TL54201977	Spittlemore Coppice East	ASNW coppice (in-rotation)	Fell 1.37 ha coppice with standards 2019-20 down to 12 / ha min. Basket protection. Coppice Volunteers. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition	Coppice regrowth well protected & vigorous. Good woodland structure. Abundant Regeneration of gaps. Favourable condition.
<b>14 (3.48 ha)</b> TL54200565	Spittlemore Coppice South	ASNW coppice (in-rotation)	Fell 1.48 ha coppice with standards 2018-19 down to 12 / ha min. Basket protection. Coppice Volunteers. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually.	Recovery towards favourable condition	Coppice regrowth well protected & vigorous. Good woodland structure. Abundant Regeneration of gaps.

			Maintain ride drainage where affected by waterlogging.		Favourable condition.
<b>13 (3.19 ha)</b> <b>TL53208664</b>	Spittlemore Coppice South	Recovering broadleaf woodland (ex PAWS)	Minimum intervention until broadleaf regen average 10cm dbh. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition. Converted to coppice within c. 20-30 years
<b>12 (3.54 ha)</b> <b>TL53207768</b>	Spittlemore Coppice West	ASNW coppice (in-rotation)	Coppice c. 2026 Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition. Cut coppice within c. 12 years
<b>7 (5.16 ha)</b> <b>TL53207792</b>	Hampton's Coppice	ASNW coppice (in-rotation)	Coppice & deer fence c. 2025 Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition. Cut coppice within c. 10 years
<b>2 (11.36 ha)</b> <b>TL53218004</b> <b>TL53215216*</b>	Hampton's Coppice	ASNW coppice (in-rotation) / c. 5.5ha mature hawthorn scrub (*)	Coppice c. 2027, Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Cut 2ha scrub 2015-16 / 2018-19. Cut 40 maiden pollards within each compartment. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition coppice / wood pasture.	Favourable Condition. Cut coppice within c. 12 years. 1ha restored wood pasture by 2021 / 1ha by 2024
<b>16 (16.65 ha)</b> <b>TL54202450</b> <b>TL54202129</b> <b>TL54203535*</b>	Elgins Coppice	ASNW coppice (in-rotation) / c.1ha former coppice high forest to east of cut road (*).	Coppice 1.23 ha coppice pa. 2016-21 with standards down to 12 / ha min. Basket protection. Coppice Volunteers. Monitor for good regen / manage deer / deadwood. Cut roadsides bi-annually. Retain c. 1ha minimum intervention to E of cut road. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition coppice + c. 1ha high forest	Coppice and c. 1ha high forest in favourable condition across entire compartment.
<b>29 (12.65 ha)</b> <b>TL54193288</b>	Gravel Pit Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Manage some hornbeam listed in Veteran Tree Survey 2001 / 2014 as veterans. Wood adjacent to Decoy Lake fenced as a non-public access reserve to avoid TSM work detrimental to habitat. Dam slopes to be kept devoid of woody vegetation (Reservoir Act). Maintain drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition
<b>44 (5.98 ha)</b> <b>TL53198849</b>	Collin's Coppice	ASNW coppice (in-rotation)	5.98 ha coppiced 2009-14. Deer Fenced 2010. Check fences & regeneration weekly. Remove fences c. 2020. Re-coppice c. 2040 Maintain ride	Recovery towards favourable condition.	Favourable Condition

			drainage where affected by waterlogging.		
<b>45 (0.16 ha)</b> <b>TL53199664</b>	Decoy Pond Island	Scrub with open space & good flora	Cut scrub on short rotation to keep open space.	Recovery towards favourable condition.	Favourable Condition
<b>46 (7.93 ha)</b> <b>TL53196818</b>	Collin's Coppice	ASNW coppice (in-rotation)	Coppice c. 2035. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Remove stock fence. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>42 (3.21 ha)</b> <b>TL53195647</b> <b>TL53195658*</b>	Collin's Coppice	ASNW coppice (lapsed but viable) / c. 0.8ha mature hawthorn scrub to N & W (*)	Coppice c. 2022: Fell @ 1.5 ha pa coppice with standards down to 12 / ha min. Deer Fence. Contractors. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>43 (5.09 ha)</b> <b>TL53197350</b> <b>TL53195751*</b> <b>TL53197660*</b> <b>TL53199167*</b>	Collin's Coppice	ASNW coppice (lapsed but viable) / c. 2.5ha hawthorn scrub to N & NE (*)	Coppice c. 2028. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Remove stock fence.	Recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>47 (2.25 ha)</b> <b>TL53194825</b>	Collin's Coppice	Recovering broadleaf woodland (ex PAWS)	Minimum intervention until broadleaf regen average 10cm dbh. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition. Converted to coppice within c. 20-30 years
<b>49 north (13.09 ha)</b> <b>TL53190607</b> <b>TL53180177*</b>	Emblem's Coppice	9.69 ha recovering broadleaf woodland (ex PAWS) / *3.40ha ASNW former coppice (lapsed)	Minimum intervention until broadleaf regen average 10cm dbh. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually.* Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Recovery towards favourable condition.	Favourable Condition. Ex PAWS Converted to coppice within c. 20-30 years.
<b>36 (5.23 ha)</b> <b>TL53191383</b>	Lodge Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>37 (5.19 ha)</b> <b>TL52199683</b>	Lodge Coppice	ASNW former coppice (lapsed)	Non-intervention (Dec 1999 747 crash site). Maintain as high forest. Monitor for regen / deer damage and deadwood resource (use as a control). Cut external rides bi-annually. Maintain but assess need for fences. Maintain ride drainage where	Recovery towards favourable condition.	Favourable Condition. Re-coppice?

			affected by waterlogging. Assess viability to re-coppice.		
<b>38 (2.02 ha)</b> <b>TL52199657</b>	Lodge Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>39 (4.05 ha)</b> <b>TL53191753</b>	Lodge Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>40 (3.20 ha)</b> <b>TL52199739</b>	Lodge Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>41 (1.38 ha)</b> <b>TL53191240</b>	Lodge Coppice	ASNW former coppice (lapsed)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>32 (5.56 ha)</b> <b>TL53204314</b>	Round Coppice	ASNW former coppice (lapsed, some probably viable)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice, esp. W side	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>33 (1.5 ha)</b> <b>TL53202510</b>	Round Coppice	ASNW former coppice (lapsed, probably viable)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>34 (2.84 ha)</b> <b>TL53204314</b>	Round Coppice	ASNW former coppice (lapsed, probably viable)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>35 (4.69 ha)</b> <b>TL53193684</b>	Round Coppice	ASNW former coppice (lapsed, probably unviable)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>24 (4.91 ha)</b> <b>TL53200135</b>	Beggarshall Coppice	ASNW coppice (in-rotation)	Coppice 50% 2017 / Deer Fence 2018 / Coppice last 50% 2019: Fell standards down to 12 / ha min. Contractors. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition

			drainage where affected by waterlogging.		
<b>23 (2.06 ha)</b> <b>TL53201537</b>	Beggarshall Coppice	ASNW coppice (in-rotation)	Coppice 100% 2016 / Deer Fence 2017. Fell standards down to 12 / ha min. Contractors. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>22 (1.58 ha)</b> <b>TL53202948</b>	Beggarshall Coppice	ASNW coppice (in-rotation)	Coppice c. 2028. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Remove stock fence.	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>21 (1.41 ha)</b> <b>TL53204651</b>	Beggarshall Coppice	ASNW coppice (in-rotation)	Coppice c. 2030. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Remove stock fence.	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>26 (3.58 ha)</b> <b>TL53201822</b>	Beggarshall Coppice	ASNW former coppice (lapsed, probably viable)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice.	Recovery towards favourable condition.	Favourable Condition Re-coppice?
<b>25 (2.91 ha)</b> <b>TL53200109</b>	Beggarshall Coppice	ASNW coppice (lapsed but viable)	Coppice 50% 2016 / Deer Fence 2017 / Coppice last 50% 2018. Fell standards down to 12 / ha min. Contractors. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>27 (4.01 ha)</b> <b>TL53204237</b> <b>TL53205542*</b>	Beggarshall Coppice	ASNW former coppice (lapsed, probably viable) / 0.68ha mature hawthorn scrub (*)	Minimum intervention as high forest. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Assess viability to re-coppice. Cut 0.68ha mature hawthorn scrub (*) 2017. Retain 20 maiden pollards.	Recovery towards favourable condition. 0.68ha restoration-phase wood pasture (*)	Favourable Condition Re-coppice? Restored wood pasture (*)
<b>1 (17.96 ha)</b> <b>TL53200570*</b> <b>TL53202379</b> <b>TL53203888</b> <b>TL53212009**</b>	Hangman's Coppice	14.51ha ASNW coppice (in-rotation) / 3.45ha mature hawthorn scrub (**)	*Coppice 2.41ha pa. 2020-22 (total 7.23ha) Deer fence 2021. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. **Cut 1ha scrub 2020. Retain 40 maiden pollards.	Recovery towards favourable condition. All coppice kept in rotation. 1ha restoration-phase wood pasture (**).	Favourable Condition. All coppice kept in rotation. 1ha restored wood pasture by 2025
<b>9 (2.22 ha)</b> <b>TL53204370</b>	Hangman's Coppice	ASNW coppice (in-rotation)	Coppice c. 2026. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain	In-rotation coppice / recovery towards	In-rotation coppice / Favourable Condition

			ride drainage where affected by waterlogging. Remove stock fence.	favourable condition.	
<b>10 (1.73 ha)</b> <b>TL53202965</b>	Hangman's Coppice	ASNW coppice (in-rotation)	Coppice c. 2027. Monitor for good regen / manage deer / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Remove stock fence.	In-rotation coppice / recovery towards favourable condition.	In-rotation coppice / Favourable Condition
<b>31 (3.56 ha)</b> <b>TL53196680*</b> <b>TL53197486</b>	The Warren (SAM*)	Veteran (C.18th) horse chestnut stand & mature hawthorn scrub on SAM	Cut 1ha scrub to SE of Warren House 2021-22. Plan for appropriate replacement of chestnuts (if nec.) within Lake Area / Capability Brown Conservation Plan. Continue removal of rank hawthorn & reductions of HCH where necessary to protect earthworks. Maintain ride drainage where affected by waterlogging.	Stabilised earthworks / workable conservation plan drawn up to incorporate any appropriate tree replacement	Stabilised earthworks / implement replanting programme if appropriate / 1ha scrub cut 2022 & restored to wood pasture by 2027.
<b>17 (0.14 ha)</b> <b>TL53209839</b>	Sweet Chestnut Plantation	PAWS – sweet chestnut plantation	Thin sweet chestnut as appropriate to visitor safety, tree form & vitality, no replacement required.	Trees retained only for their lifetime.	No replacement following tree failure.
<b>28 (0.21 ha)</b> <b>TL53209929</b>	Gravel Pit Plantation	PAWS - beech plantation	Thin beech as appropriate to visitor safety, tree form & vitality, no replacement required.	Trees retained only for their lifetime.	No replacement following tree failure.
<b>56 (1.1 ha)</b> <b>TL15381759</b>	Southern Plain: South End Plantation	PAWS - beech & pedunculate oak plantation	Thin trees as required for straight timber, no replacement required.	Trees retained only for their lifetime.	No replacement following tree failure.
<b>48 (0.23 ha)</b> <b>TL53193632</b>	Forest Lodge Copse	PAWS – Scots Pine Plantation	Thin trees as required for straight timber, no replacement required.	Trees thinned as required for straight timber & retained only for their lifetime.	No replacement following tree failure.
<b>57 (9.03 ha)</b> <b>TL52185851</b>	Wall Wood	ASNW 30% (west of compt.) / ex - PAWS 70% (east of compt).	2016 / 2019 / 2024: Cut 1 ha coppice with standards down to 12 / ha minimum to west of compartment. Thin ash. Replace birch. 2017: Permanent deer fence around whole wood. Contractors. Monitor for good regen / manage deer (check fences weekly) / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging. Plan to cut ex-PAWS to east of compartment for first time as broadleaf coppice c.2032-37.	Fence & restore coppice / abundant flora incl oxlips / maintain favourable condition.	As 0-5 years / cut ex - PAWS as coppice for first time since restoration to broadleaf.

<b>58 (1.23 ha)</b> <b>TL52187954</b>	Wall Wood	ASNW coppice (lapsed but viable)	2022: Cut 1 ha coppice with standards down to 12 / ha minimum to west of compartment. Thin ash. Replace birch. 2017: Permanent deer fence around whole wood. Contractors. Monitor for good regen / manage deer (check fences weekly) / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Fence & restore coppice / abundant flora incl oxlips / maintain favourable condition.	As 0-5 years / keep coppice in-cycle.
<b>59 (7.05 ha)</b> <b>TL52185736</b>	Wall Wood	ASNW coppice (lapsed but viable)	2017 / 2020 / 2021 / 2025 / 2028 / 2030: Cut 1 ha coppice with standards down to 12 / ha minimum. Thin ash. Replace birch. 2017: Permanent deer fence around whole wood. Contractors. Monitor for good regen / manage deer (check fences weekly) / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Fence & restore coppice / abundant flora incl oxlips / maintain favourable condition.	As 0-5 years / keep coppice in-cycle.
<b>60 (3.5 ha)</b> <b>TL52186524</b>	Wall Wood	ASNW coppice (lapsed but viable)	2023 (part in 61) / 2026 / 2029 / 2031: Cut 1 ha coppice with standards down to 12 / ha minimum. Thin ash. Replace birch. 2017: Permanent deer fence around whole wood. Contractors. Monitor for good regen / manage deer (check fences weekly) / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Fence & restore coppice / abundant flora incl oxlips / maintain favourable condition.	As 0-5 years / keep coppice in-cycle.
<b>61 (3.14 ha)</b> <b>TL52184218</b>	Wall Wood	ASNW coppice (lapsed but viable)	2023 (part in 60) / 2018 / 2027: Cut 1 ha coppice with standards down to 12 / ha minimum. Thin ash. Replace birch. 2017: Permanent deer fence around whole wood. Contractors. Monitor for good regen / manage deer (check fences weekly) / deadwood. Cut rides bi-annually. Maintain ride drainage where affected by waterlogging.	Fence & restore coppice / abundant flora incl oxlips / maintain favourable condition.	As 0-5 years / keep coppice in-cycle.
<b>Grassland</b>					
<b>TL53181661*</b> <b>52(S)(3.66 ha)</b> <b>TL53185070**</b> <b>53 (0.86 ha)</b> <b>TL53181575</b>	Southern Plain: South end	Wood pasture* / restoration-phase wood pasture / mature hawthorn scrub.	Grazing - cattle on wood pasture / sheep on restoration phase wood pasture (cut scrubs). Mechanical cutting of cut scrubs where not grazed. July/Aug thistle topping throughout entire plain. 1ha scrub removal 2020**. Veteran tree and younger	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree &	As 0-5 yrs. Favourable Condition.

<b>54 (0.16 ha)</b> <b>TL53182273</b> <b>55 (0.28 ha)</b> <b>TL53181469</b>			pollard management. Treeguard maintenance.	scrub management programme up to date. Mosaic habitat maintained. Progression towards favourable condition.	
<b>TL53194748*</b> <b>50 (6.73 ha)</b> <b>TL53192707</b> <b>51 (4.74 ha)</b> <b>TL53184998**</b> <b>52(N) (2 ha)</b> <b>TL53185070</b>	Southern Plain	Wood pasture* / restoration-phase wood pasture / mature hawthorn scrub.	Grazing - cattle on wood pasture / sheep on restoration phase wood pasture (cut scrubs). Mechanical cutting of cut scrubs where not grazed. July/Aug thistle topping throughout entire plain. 1ha scrub removal 2017**. Veteran tree and younger pollard management. Treeguard maintenance.	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL53198391*</b> <b>TL53205313</b> <b>30 (1.44 ha)</b> <b>TL53199888**</b>	Main Plain: Centre	Wood pasture* / restoration-phase wood pasture / mature hawthorn scrub**.	Grazing - cattle on wood pasture / sheep on restoration phase wood pasture (cut scrubs) where practical (high visitor usage here). Mechanical cutting of cut scrubs where not grazed. July/Aug thistle topping throughout entire plain. Veteran tree and younger pollard management. Treeguard maintenance.	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>18 (2.54 ha)</b> <b>TL53206936</b> <b>19 (0.78 ha)</b> <b>TL53206349</b> <b>20 (0.32 ha)</b> <b>TL53206859*</b> <b>11 (0.8 ha)</b> <b>TL53205564</b>	Main Plain: North	Wood pasture / recovery phase wood pasture / mature hawthorn scrub / Shermore Brook (wetland - meanders and flushes).	Grazing - cattle on wood pasture. Mechanical cutting of cut scrubs here due to high visitor usage. July/Aug thistle topping throughout entire plain. 1ha scrub removal 2016-17*. Veteran tree and younger pollard management. Treeguard maintenance. Monitor cattle poaching in wetland (unfenced at this location).	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Wetland in good condition. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL53216302*</b> <b>8 (2.3 ha)</b> <b>TL53205382</b>	Elman's Green	Wood pasture* / recovery phase wood pasture /	Grazing - cattle on wood pasture. Mechanical cutting of cut scrubs here due to high visitor usage. July/Aug thistle topping throughout entire plain.	Well grazed, low thistle density, restoration phase wood pasture progressing	As 0-5 yrs. Favourable Condition.



		mature hawthorn scrub	Veteran tree and younger pollard management. Treeguard maintenance.	towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Progression towards favourable condition.	
<b>TL54205633</b>	Takeley Hill, Bush End North Bush End South	Wood pasture	Grazing - cattle on wood pasture. Mechanical & hand cutting of scrub encroachment / establishment over site. July/Aug thistle topping (mechanically or by hand where necessary) Veteran tree and younger pollard management. Visitor management required to prevent damage to grassland (boardwalk, some ground reinforcement, education).	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL53209838</b> <b>TL54200830</b> <b>TL53208840</b>	The Gravel Pit	Acid grassland	Grazing - cattle on wood pasture. Mechanical & hand cutting of regenerating scrub over site. July/Aug thistle topping (mechanically or by hand where necessary) Veteran tree and younger pollard management. Visitor management required to prevent damage to grassland (studposts & nature trail route)	Well grazed, low thistle density, restoration phase wood pasture progressing towards restored. Pollards kept in cycle, vet tree & scrub management programme up to date. Mosaic habitat maintained. Acid grassland / gravel workings protected from significant footfall pressure. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL53202948</b>	Portingbury Hills (SAM)	Calcareous grassland	Scrub control (hand cut only), light grazing.	Species rich calcareous grassland / well protected SAM / defined earthworks.	Species rich calcareous grassland / well protected SAM / defined earthworks.

Wetland					
<b>TL53216302</b>	Old Woman's Weaver	Wetland & fen	Grazing - sheep in 2 fenced Weaver fen compartments between Oct – Feb inclusive. Draw down 4 X sluices March – Oct. Hand cutting of regrowth in there. Shermore Brook culvert repairs required at TL 537,211.	Seasonally well grazed wetland (Shermore Brook, Old Woman's Weaver and surrounding fen) maintained in good condition. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL54200013</b>	The Marsh	Wet grassland, marsh, reedbed and fen.	Rotational reed bed cutting, hand cutting of scrub regeneration and willow / thorn stool regrowth removal, sheep grazing between Oct – Feb inclusive.	Mosaic habitat maintained in good condition. Progression towards favourable condition.	As 0-5 yrs. Favourable Condition.
<b>TL53199968</b> <b>TL53199664</b>	The Lake and Decoy Pond	Open water, pond	Water level control & quality monitoring. Manage Canada geese, signal crayfish and numbers of small fish / large bottom feeders in Decoy. Investigate options for de-siltation / improving aquatic vegetation.	Progression towards favourable condition.	Favourable Condition.


## DOCUMENT I

# Conservation objectives and definitions of favourable condition for designated features of interest



These Conservation Objectives relate to all designated features on the SSSI, whether designated as SSSI, SPA or SAC features

Name of Site of Special Scientific Interest (SSSI)	
Hatfield Forest	
Names of designated international sites	
Special Area for Conservation (SAC)	Not applicable
Special Protection Area (SPA)	Not applicable
Ramsar	Not applicable
Relationship between site designations	
Not applicable	

Version control information		
Status of this Version (Draft, Consultation Draft, Final)	Consultation draft	
Prepared by	Michael Parkin and Neil Fuller	
Date of this version	15 March 2010	
Date of generic guidance on favourable condition used	CSM Grassland (Sep 2003) CSM Woodland (Feb 2003)	
Other notes/version history	First draft prepared by Justine Anstey (Mar 05) Second draft prepared by Frances Falconer and Carl Borges (July 05). Reformatted by Michael Parkin (October 2008). Reworked by Neil Fuller (Feb/Mar 09) Reviewed by Keith Kirby (Mar 09) Further review (Aug 2009-February 2010)	
Quality assurance information		
Checked by	Name Neil Fuller	Date 15 March 2010
	Signature 	

## **Conservation Objectives and definitions of Favourable Condition: notes for users**

### **Conservation Objectives**

SSSIs are notified because of specific biological or geological features. Conservation Objectives define the desired state for each site in terms of the features for which they have been designated. When these features are being managed in a way which maintains their nature conservation value, then they are said to be in 'favourable condition'. It is a Government target that 95% of the total area of SSSIs should be in favourable condition by 2010.

### **Definitions of Favourable Condition**

The Conservation Objectives are accompanied by one or more habitat extent and quality definitions for the special interest features at this site. These are subject to periodic reassessment and may be updated to reflect new information or knowledge; they will be used by Natural England and other relevant authorities to determine if a site is in favourable condition. The standards for favourable condition have been developed and are applied throughout the UK.

### **Explanatory text for Tables 2 and 3**

Tables 2 and 3 set out the measures of condition which we will use to provide evidence to support our assessment of whether features are in favourable condition. They are derived from a set of generic guidance on favourable condition prepared by Natural England specialists, and have been tailored by local staff to reflect the particular characteristics and site-specific circumstances of individual sites. Quality Assurance has ensured that such site-specific tailoring remains within a nationally consistent set of standards. The tables include an audit trail to provide a summary of the reasoning behind any site-specific targets etc. In some cases the requirements of features or designations may conflict; the detailed basis for any reconciliation of conflicts on this site may be recorded elsewhere.

These objectives are intended to set the biological standards by which the condition of the site will be assessed. They are not intended to detect any possible impacts arising from air pollution or the associated deposition of nitrogen or acidity. Except in the most extreme cases, such impacts are often particularly subtle in their effects and are usually very difficult to detect by simple field observation. Air quality issues will be addressed through the introduction of an 'at risk' category on ENSIS, which will operate in parallel with the condition assessments to provide an overall picture of the health of SSSIs.

## **Conservation Objectives**

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition (\*), with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar) as individually listed in Table 1.

### **Habitat Types represented (Biodiversity Action Plan categories)**

Acid grassland – lowland/ Neutral grassland - lowland mosaic  
Broadleaved, mixed and yew woodland - lowland

### **Geological features (Geological Site Types)**

(Not applicable)

(\*) or restored to favourable condition if features are judged to be unfavourable.

Standards for favourable condition are defined with particular reference to the specific designated features listed in Table 1, and are based on a selected set of attributes for features which most economically define favourable condition as set out in Table 2 and Table 3:

These objectives are intended to set the biological standards by which the condition of the site will be assessed. They are not intended to detect any possible impacts arising from air pollution or the associated deposition of nitrogen or acidity. Except in the most extreme cases, such impacts are often particularly subtle in their effects and are usually very difficult to detect by simple field observation. Air quality issues will be addressed through the introduction of an ‘at risk’ category on ENSIS, which will operate in parallel with the condition assessments to provide an overall picture of the health of SSSIs.

**Table 1 Individual designated interest features**

BAP Broad Habitat type / Geological Site Type	Specific designated features	Explanatory description of the feature for clarification	SSSI designated interest features	SAC designated interest features	SPA bird populations dependency on specific habitats			Ramsar criteria applicable to specific habitats			
					Annex 1 species	Migratory species	Waterfowl assemblage	1a Wetland characteristics	2a Hosting rare species &c	3a 20000 waterfowl	3c 1% of population
Broadleaved, mixed and yew woodland-lowland & Lowland wood pasture and parkland	W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> woodland	Broadleaved Alder woodland with nettles	*								
	W8 <i>Fraxinus- Acer-Mercurialis</i> woodland	Broadleaved ash woodland with field maple and dog's mercury	*								
	W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland	Broadleaved oak woodland with bracken and bramble	*								
Acid grassland – lowland/ Neutral grassland - lowland mosaic	MG5 - <i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> grassland	Lowland hay meadow	*								
	MG8 - <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland	Crested dog's-tail and Marsh marigold dominated grassland	*								
	MG13 - <i>Agrostis stolonifera</i> - <i>Alopecurus geniculatus</i> grassland	Marshy grassland	*								
	U1 <i>Festuca ovina-Agrostis capillaries</i> grassland	Lowland dry grassland	*								
Fen, marsh and swamp	S22 – <i>Glyceria fluitans</i> water margin vegetation	Lake and stream edge vegetation	*								

NB. Features where asterisks are in brackets (\*) indicate habitats which are not notified for specific habitat interest (under the relevant designation) but because they support

notified species.

**Table 2 Habitat extent objectives**

<b>Conservation Objective for habitat extent</b>	To maintain the designated features in favourable condition, which is defined in part in relation to a balance of habitat extents (extent attribute). Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Extent - Dynamic balance</b>	On this site favourable condition requires the maintenance of the extent of each habitat type (either designated habitat or habitat supporting designated species). Maintenance implies restoration if evidence from condition assessment suggests a reduction in extent.

<b>Habitat Feature</b>	<b>Estimated extent (ha) and date of data source/ estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Broadleaved, mixed and yew woodland - lowland	299 ha (English Nature NVC Survey 2002)  Broadleaved semi natural woodland: 272 ha  Scrub: 27 ha	No loss of ancient semi-natural stands.  No loss of ancient woodland.  No loss of semi-natural wood-pasture mosaic area (see Map 5 National Trust map - woodland plan 2005)).  No unconsented loss of veteran trees or old coppice stools, except through natural causes (see Comments).	Areas to be measured using aerial photographs and/or site visit. 20% canopy cover is conventionally taken as the lower limit for an area to be considered as woodland. Stand loss can be defined as 0.5 ha or 0.5% of the stand area, whichever is the smaller. Stand loss due to natural processes e.g. in minimum intervention stands may be acceptable. Stand destruction may occur if the understorey and ground flora are irretrievably damaged even if the canopy remains intact. Targets for extent may be modified where a target has been set to increase the extent of habitat features on the site at the expense of other woodland habitats. For example, conversion of some closed canopy areas to wood-pasture and/or scrubby areas to grassland may be beneficial for the site's notified interest features and quality features. <u>Veteran Trees</u> Particularly for the wood pasture at this site the number and distribution of veteran trees is as relevant as the area involved. The recent detailed survey (Fay & Fay 2001) mapped over 900 veteran trees across the Plains (Plans held at National Trust offices). <i>Some veterans will be lost through windthrow or drought etc and this is accepted. It is important that management efforts are applied to minimise loss and ensure there is adequate recruitment. The current Management Plan states 'Create 40 maiden pollards each year mainly in areas of scrub clearance. Monitor the growth and survival of maiden pollards (3-5 years). Monitor regrowth of maiden pollards after the first pollard cycle. Veteranise selected standard trees within cleared scrub areas. Prolong the life of</i>

Habitat Feature	Estimated extent (ha) and date of data source/ estimate	Site Specific Target range and Measures	Comments
			<i>veteran trees and creating maiden pollards may not address a significant generation gap in the trees at Hatfield Forest. Thus selected trees within the cleared scrub away from visitor areas too large for maiden pollarding will be veteranised. This involves speeding the onset of decay processes through causing damage to the bark, some limbs and crown reduction'</i>
Acid grassland – lowland / Neutral grassland - lowland	1.26ha, EN NVC Survey 2002	<p>Minimum of 90 Ha of grassland habitat supporting a mosaic of semi-improved grassland plant communities chiefly, including a range of neutral grasslands (e.g. MG5, MG8 and MG13) and acid grasslands (U1 – type) typical of old grassland habitats.</p> <p><u>Provisional Targets (see comments)</u></p> <p>Acid grassland: U1 mosaic - Minimum of 1Ha</p> <p>Neutral grasslands: MG5 mosaic - Minimum of 30Ha MG8 - Minimum of 1.5 Ha MG13 – Minimum of 1 Ha</p>	<p>These are initial targets based on the distribution and extent of habitats described in the NVC survey (2002). Further survey work is necessary to more accurately define the current extent of these plant communities and where opportunities exist to extend and enhance them with targeted management. Until, this survey work is undertaken, these targets are regarded as provisional, recognising that opportunities exist under the current management regime, in accordance with the Management Plan, to increase the extent and quality of the grassland communities.</p> <p>The listed communities are most likely to occur within the Management Plan units 107- particularly e, f, g, i, l , o &amp; p (see Map 4 - National Trust Biological survey 2002). See Other Notes for Management Plan reference.</p>



<b>Habitat Feature</b>	<b>Estimated extent (ha) and date of data source/ estimate</b>	<b>Site Specific Target range and Measures</b>	<b>Comments</b>
Fen, Marsh and swamp	Estimated 1.38ha, EN NVC Survey 2002	<p>No unconsented decrease in the area of this habitat.</p> <p>Minimum of 1.55 Ha of core swamp habitat in total, supporting a mosaic of swamp communities including S22.</p>	<p>This swamp vegetation occurs at the margins of the Lake and the streams on site. It is actually part of a swamp community mosaic and the figure provided is an estimated extent.</p> <p>The listed communities are most likely to occur within the Management Plan units 107e and 107l (see Map 4 - National Trust Biological survey 2002)). See Other Notes for Management Plan reference.</p>

<b>Audit Trail</b>
<b>Rationale for habitat extent attribute</b> (Include methods of estimation (measures), and the approximate degree of change which these are capable of detecting).
This is a large site, covering over 400ha, at least three-quarters of that is broad-leaved woodland.
*Estimates of extent taken from the EN commissioned NVC Survey of Hatfield Forest 2002
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
Within generic guidance. The target area for wood pasture is taken from the National Trust Hatfield Forest Management Plan (2005-2010).
<u>References:</u> Fay, N. & Fay, L. (2001). <i>Hatfield Forest Veteran Tree Survey</i> . TreeWorks Services Ltd, Contract Report for the National Trust. The National Trust. (2006). <i>Hatfield Forest National Nature Reserve. 5 Year Management Plan 2006-10</i> . Quadrat Scotland (2001). <i>National Vegetation Classification Assessment of Non-woodedSSSIs within Essex, Hertfordshire and Greater London</i> . Contract report for English Nature. The National Trust's Nature Conservation Evaluation (2002): Hatfield Forest. Rackham, O (1989). <i>The Last Forest</i> . Published by J.M. Dent.

**Other Notes**

The Forest, together with the Purlieu Woods, Wall Wood, Monk's Wood and Wallis's Spring, covers mixed ancient coppice woodland, scrub, unimproved grassland chases and plains with ancient pollards, and herb-rich marshland bordering a large lake.

The woodland is predominantly wet ash-maple and the ash-maple variant of oak-hornbeam. There is a small area of plateau alder, a restricted habitat within Essex and also the only example in the county of calcareous mixed oak coppice, with it's unusually large oak stools.

More than four hundred species of higher plants have been recorded, including about thirty trees and shrubs, and many county rarities with Stinking Hellebore *Helleborus foetidus* and Oxlip *Primula elatior* of national importance. It is comparatively rich in bryophytes and lichens and the SSSI citation refers to locally important breeding bird communities and insect populations. Since SSSI notification the national significance of the saproxylic invertebrate assemblage has been identified (see Comments section on page 20). In addition to this, the national significance of the site for fungi should also be recognised, with over 650 recorded species.

A lake provides an additional habitat for both resident and migrant wildfowl and contains Pike, Tench, Roach, Rudd and Perch.

The SSSI citation refers to over sixty species of birds breeding in the Forest with specific reference to grasshopper warbler, snipe, water rail and nightingale. Since notification the assemblage has changed to include red listed breeding birds such as bullfinch, lesser spotted woodpecker, marsh tit, reed bunting and orange listed birds such as cuckoo, goldcrest, stock dove, willow warbler. There are also a number of Badger setts within the woodland.

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Broadleaved, mixed and yew woodland- lowland</b> habitat at <b>Hatfield Forest SSSI</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
W6 <i>Alnus glutinosa</i> – W8 <i>Fraxinus-urticae</i>	Structure and Natural processes	Assess by field survey using structured walk and/or transects.	Mosaic of ancient coppice-with-standards woodland within a matrix of pasture and pasture-woodland with ancient pollarded trees.	<u>Dead wood</u> Assessment of dead wood targets may be difficult to carry out and caution should be exercised in judging condition for this element.	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<i>Acer-Mercurialis</i> , W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland			<p><u>Canopy cover</u> High Forest (30-90% cover) – average 60 – 90%, Coppice areas (0 – 100% cover) – average in cycle (5% - 30%). Wood pasture (10-30%)</p> <p><u>Understorey</u> Understorey (2-5m) present over at least 20% of total stand area (except in wood pasture). Wood pasture - understorey (2-5m) present over no greater than 20% of total stand area (*).</p> <p><u>Veteran trees</u> Wood pasture - Veteran trees should always be present. Coppice with standards – Veteran standards /trees and/or stools should be present. ( See Quality Indicators – Veteran tree section)</p> <p><u>Age classes</u> At least three age classes spread across the average life expectancy of the commonest trees.</p> <p><u>Open space</u> Open space (permanent and temporary combined ) to form at least 10% of stand area.</p>	<p>If using structured walk, assess the standing and fallen dead wood visible from each of at least 10 sample points per unit.</p> <p>Dead wood scores: ‘Good’ = at least 1 large (&gt;50cm diameter) fallen tree or trunk <u>and</u> abundant 5-50cm pieces in view at each sample point. ‘Average’ = 1 or 2 large pieces but little smaller material, <u>or</u> only smaller material in view at each sample point. ‘Poor’ = even smaller material is scarce.</p> <p>Deadwood that poses a threat to safety/access may be moved but should be left within the unit, preferably in partial shade.</p> <p><u>Open space</u> Open space targets can be relaxed within a unit (particularly for smaller units) provided they are met when averaged over the unit and its immediate neighbouring areas.</p>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
			<p><u>Dead wood</u> Dead wood score at least 'average' to 'good' across the unit (see Comments for definitions)</p>		
<p>W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> , W8 <i>Fraxinus-Acer-Mercurialis</i>, W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland</p>	Composition	Assess by field survey using structured walk and/or transects.	<p>At least 95% of cover in any one layer of site-native or acceptable naturalised species.</p> <p>No evidence of rapid die-back (greater than 10% by number or area in any five year period).</p>	<p>In sites where there might be uncertainty as to what counts as site-native or as acceptable naturalised species this must be made clear (e.g. the position of sycamore). Where cover in any one layer is less than 100% then the 95% target applies to the area actually covered by that layer. Factors leading to the death or replacement of woodland species could include pollution or new diseases.</p> <p>Damage to species by non-native species that does not lead to their death is not necessarily unacceptable. Excessive browsing/grazing, even by native ungulates, may be undesirable if it causes shifts in the composition/ structure of the stand.</p> <p>Deer are affecting regeneration at this site.</p>	Yes



Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
			<p>i) At least 10% of the area has field layer and/or scrub vegetation which is left unmanaged through the winter, so that seed heads and dead stems remain undisturbed.</p> <p>4) Grassland plant communities:</p> <p>Core areas of grassland within the wood pasture support notable vascular plant communities, for example those listed as MG5, MG8, MG13 and U1. See respective targets in Table 3 for these grassland areas.</p>	<p>fungi as larvae require open-structured flowers (eg hawthorn, bramble, umbellifers, composites,) as food sources once they become adult, so these flowers are particularly important.</p> <p>Presence of both early-flowering and late-flowering species is important, as is a mix of flowering shrubs and herbs.</p> <p>It is important that a significant proportion of the flower resource is in no more than partial shade.</p> <p>3) Seed heads: Seed heads and erect and fallen hollow stems of herbaceous plants are often important overwintering sites for invertebrates.</p>	Yes (see Table 3)
		Assess by field survey using structured walk and/or transects	<p>5) Waxcap grassland:</p> <p>Core areas of old semi-improved grassland support wax cap grassland fungi.</p>	<p>5) Surveys since 2001 have produced a list of 17 waxcap species (<i>Hygrocybe</i>) in the grasslands – see Management Plan. Further survey work is necessary to accurately define location and extent of core areas. Additional work is necessary in consultation with specialists to refine the provisional targets for this quality feature.</p>	No
		Presence /absence of notable plant species	<p>Notable species of woodland and rides present:</p> <p>i) Oxlip (<i>Primula elatior</i>) - Nat scarce ii) Stinking Hellebore (<i>Helleborus foetidus</i>) – Nat scarce</p>	<p>Whilst presence of oxlip and stinking hellebore is the baseline that should be sustained, ideally management and monitoring should ensure the site supports a viable population of these plant species. This requires a site survey to inform habitat management (including deer control).</p>	No
W6 <i>Alnus</i>	Regeneration	Assess by field	No evidence that browsing is	A proportion of gaps at any one time may develop	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<i>glutinosa</i> – <i>Urtica dioica</i> , W8 <i>Fraxinus</i> - <i>Acer</i> - <i>Mercurialis</i> , W10 <i>Quercus</i> <i>robur</i> - <i>Pteridium</i> <i>aquilinum</i> - <i>Rubus</i> <i>fruticosus</i> woodland	potential	survey using structured walk and/or transects.	<p>significantly limiting the coppice and sapling regeneration targets or presence of oxlip.</p> <p>(i) Signs of seedlings growing through to saplings to young trees at sufficient density to maintain canopy density over a 10 yr period.</p> <p>(ii) Coppice regrowth should be at least 2m high and occur in at least 75% of stools or over at least 75% of the area within 3 years of cutting.</p> <p>(iii) Pollard regrowth - Regeneration from the re-pollarding from the boles at least 30cm long 2 years after cutting on about 70% of boles.</p> <p>No unconsented tree planting within the SSSI.</p>	<p>into permanent open space; equally some current permanent open space/glades may in time regenerate to closed canopy. Regeneration may often occur on the edges of woods rather than in gaps within it. The density of regeneration considered sufficient is clearly less in parkland sites than in high forest; in coppice most of the regeneration will be as stump regrowth. The minimum level of regeneration to be acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective.</p> <p>The Site Management Plan proposes: i) 2ha of coppice coupes to be cut annually and 12-15 standards per ha left standing ii) 30 new pollards per annum from 2004 A higher rate of failure is acceptable on maiden pollards or at the first re-cutting of neglected pollards.</p> <p>No re-planting should occur unless consented by Natural England. For example, it may be appropriate to plant within areas with locally-native stock (e.g. limited tree planting with site native species in the wood pasture areas where evidence from old maps indicates that tree density is too low).</p> <p>In general though, if natural regeneration is</p>	



Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
				<p>regarded as insufficient to achieve required number of saplings, there may be a need to control grazing levels or protect individual seedlings.</p> <p>Assess this attribute by walking through the wood pasture areas in late summer/autumn.</p>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<p>W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> , W8 <i>Fraxinus-Acer-Mercurialis</i>, W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland</p> <p><b>Veteran trees</b></p> <p>(all native species, in <u>all</u> habitats within which they occur)</p>	Structure and natural processes	Age/size class variation within and between stands; presence of open space and old trees; dead wood lying on the ground; standing dead trees	<p>Veteran trees should always be present within SSSI.</p> <p>(Canopy cover within wood pastures and other woodland types is included within the standards for these habitats)</p> <p>(Understorey cover within wood pastures and other woodland types is included within the standards for these habitats)</p>	<p>Any changes leading to exceedance of these limits due to natural processes are likely to be acceptable.</p> <p>The Management Plan aims for 90% of veteran trees in the wood pasture areas to be managed (mainly by crown reduction) over a 30 year period. Mature pollards can be actively managed by re-pollarding or by crown reduction as regarded appropriate to circumstances, and new maiden pollards can be created as replacements (*).</p> <p>All veteran trees allowed to die standing, and all stumps and fallen boles or branches &gt;20 cm diameter allowed to rot in-situ, except where this would endanger public safety.</p> <p>Assess this attribute by field survey.</p> <p>(* For this target it is acceptable for individual units to be outside the specified range, provided that the average value across the site remains within the specified range.)</p>	Yes
<p>W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> , W8 <i>Fraxinus-Acer-Mercurialis</i>,</p>	Regeneration potential	<p>Successful establishment of young trees.</p> <p>Successful regrowth</p>	<p>10% of the number of mature trees present as young trees (at least 3m high) every decade.</p> <p>Regeneration from bole or lower branches following crown reduction at</p>	<p>No re-planting should occur unless consented by Natural England. For example, it may be appropriate to plant within areas with locally-native stock (eg. limited tree planting with site native species in the wood pasture areas where evidence from old maps indicates that tree density</p>	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<p>W10 <i>Quercus robur</i>- <i>Pteridium aquilinum</i>- <i>Rubus fruticosus</i> woodland</p> <p><b>Veteran trees</b></p> <p>(all native species, in <u>all</u> habitats within which they occur)</p>		<p>following crown reduction and/or re-pollarding of existing veteran trees.</p>	<p>least 30cm long 2 years after cutting on about 70% of veteran trees.</p> <p>Regeneration from the re-pollarding from the boles at least 30cm long 2 years after cutting on about 70% of veteran tree boles.</p>	<p>is too low).</p> <p>In general though, if natural regeneration is regarded as insufficient to achieve required number of saplings, there may be a need to control grazing levels or protect individual seedlings.</p> <p>The minimum level of regeneration to be acceptable from a nature conservation viewpoint is likely to be much less than that needed where wood production is also an objective. A higher rate of failure is acceptable:</p> <ul style="list-style-type: none"> <li>- on maiden pollards of all species;</li> <li>- at the first re-cutting of neglected hornbeam pollards;</li> <li>- at first crown reduction of large beech or oak pollards;</li> <li>- at any crown reduction or other tree surgery carried out as emergency 'rescue' works following severe storm damage.</li> </ul> <p>The National Trust are <u>not</u> currently carrying out re-pollarding of veteran pollards at Hatfield Forest (pers. comm. S. Warrington, National Trust) . This has proved to be an unsatisfactory way to manage pollards that are a long time out of the pollarding cycle. Thus, these veteran trees are managed by environmental arboriculture, using crown reduction. Also, there is a focus on working on trees that are in healthy condition, to</p>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
				ensure there are long-lived veteran trees for the future, rather than remedial action on trees that are already in the latter stages of decline.	
<p>W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> ,  W8 <i>Fraxinus-Acer-Mercurialis</i>,  W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland</p> <p><b>Veteran trees</b></p> <p>(all native species, in <u>all</u> habitats within which they occur)</p>	Composition	<p>Cover of native versus non-native species.</p> <p>Death, destruction or replacement of native woodland species through effects of non-native fauna or external unnatural factors.</p>	<p>At least 95% of veteran trees of site-native or acceptable naturalised species.</p> <p>No evidence of rapid die-back (greater than 10% by number or area in any five year period).</p>	<p>Excessive browsing/grazing by even native ungulates may be considered an unnatural external factor where it leads to undesirable shifts in the composition/structure of the stand, although this may be picked up by other attributes.</p> <p>Assess by field survey using structured walk and/or transects.</p>	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
<p>W6 <i>Alnus glutinosa</i> – <i>Urtica dioica</i> , W8 <i>Fraxinus-Acer-Mercurialis</i>, W10 <i>Quercus robur-Pteridium aquilinum-Rubus fruticosus</i> woodland</p> <p><b>Veteran trees</b></p> <p>(all native species, in <u>all</u> habitats within which they occur)</p>	Veteran tree microhabitats	Presence of characteristic features of veteran trees; which provide habitat niches for specialist species of bryophytes and invertebrates.	<p>At least 30% of veteran trees to have rotting dead wood present; either as heart-rot, or in the form of dead limbs or snags.</p> <p>At least 60% of veteran trees to have at least one of the following features: hollowing, knot holes, rot holes, rain tracks, sap runs, crevices or knot holes in exposed roots, crevices in bark, evidence of wood-rotting fungi; and all of these features to be present within most random samples of 20 trees.</p>	<p>These features provide essential supporting habitat for specialist species which form an important element of the outstanding assemblages of invertebrates and of bryophytes.</p> <p>These features also contribute to the special character and ‘sense of place’ of Hatfield Forest.</p>	Yes

Audit Trail
Rationale for limiting standards to specified parts of the site
Rationale for site-specific targets (including any variations from generic guidance)
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).

## Other Notes

### Veteran trees

The provision of separate standards for 'Veteran trees' by separating them from those for wood pasture and for other woodland habitats is intended to reflect the importance of Hatfield Forest for veteran trees and their importance as supporting habitat for invertebrates, bryophytes and fungi. It also recognises that many veteran trees are present outside the areas of wood pasture.

Reference: Fay, N. & Fay, L. 2001. *Hatfield Forest Veteran Tree Survey*. TreeWorks Services Ltd, Contract Report for the National Trust.

### Invertebrate assemblage

Although, not listed as a criteria feature at SSSI notification, the invertebrate assemblage associated with the mosaic of habitats on site is regarded to be a quality feature of this SSSI. In particular, the saproxylic beetle (Coleoptera) fauna has numerous Red Data Book rarities such as *Gastrallus immarginatus* (a BAP priority species), *Procræus tibialis*, *Malthodes crassicornis*, *Aeletes atomarius*, *Ischnomera caerulea*, *Trichonyx sulcicollis*, *Rhizophagus oblongicollis*, *Scydmaenus rufus* and *Diaperis boleti*. Recent survey data (2008), indicates the Index of Ecological Continuity is 111 and the Species Quality Index is 626, placing Hatfield Forest in the top 10 UK sites for this rare saproxylic fauna (pers comm. Stuart Warrington, National Trust)

### Mosses and Lichens

In addition to this, the epiphytic flora associated with the veteran trees is very important, with a number of scarce lichens and bryophytes. For example, the lichen *Bacidia incompta*, a rare UK BAP species, was found recently on a veteran ash. Other rare lichens include *Cladonia caespiticia*, *Lecidea sublivescens*, *Ochrolechia subviridis*, *Phlyctis argena*, and rare bryophytes *Campylium elodes*, *Rhodobryum roseum* and *Ricciocarpos natans*

### Fungi

Since SSSI notification, the national significance of the site for fungi should be recognised, with over 650 recorded species.

**Table 3 Site-Specific definitions of Favourable Condition**

<b>CONSERVATION OBJECTIVE FOR THIS HABITAT / GEOLOGICAL SITE-TYPE</b>	To maintain the <b>Mosaic of Acid grassland and neutral grassland at Hatfield Forest</b> in favourable condition, with particular reference to relevant specific designated interest features. Favourable condition is defined at this site in terms of the following site-specific standards:
<b>Site-specific details of any geographical variation or limitations (where the favourable condition standards apply)</b>	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
U1b, c, d, f (Species-rich parched grasslands)	Extent	Total area (ha), mapped in relation to a site-specific reference level to be determined, in period end April-mid July.	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Excludes bare ground associated with rabbit warrens (see below).	Yes
	Sward structure: bare ground	Record extent of bare ground (not rock) distributed through the sward, visible without disturbing the vegetation, in period end April-mid July.	No more than 15% bare ground.	Outside target indicates management problems e.g. over-grazing.	
	Sward structure: localized bare ground	Record extent of localized bare ground around rabbit warrens.	No more than 0.25 ha (i.e. approximately 50x50 metres)	Heavy rabbit grazing usually associated with type but outside target indicates rabbit grazing and disturbance levels are too high.	
	Sward structure: litter	Record cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area, in period end April-mid July.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient e.g. under-grazed.	
	Sward	Record sward height in period end	Sward 5 cms or less	Outside target indicates insufficient	



**Site-specific standards defining favourable condition**

<b>Criteria feature</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Site-specific Targets</b>	<b>Comments</b>	<b>Use for CA?</b>
	structure: average height	April-mid July.		grazing.	
U1b, c, d, f (Species-rich parched grasslands)	Sward composition: positive indicator species	Record the frequency of positive indicator species in period end April-mid July. <i>Aira</i> spp., <i>Aphanes</i> spp., <i>Astragalus danicus</i> , <i>Centaureum erythraea</i> , <i>Cladonia</i> spp, <i>Dianthus deltoides</i> , <i>Erigeron acer</i> , <i>Erodium cicutarium</i> , <i>Fragaria vesca</i> , <i>Galium verum</i> , <i>Helianthemum nummularium</i> , <i>Leontodon hispidus/L. saxatilis</i> , <i>Lotus corniculatus</i> , <i>Ornithopus perpusillus</i> , <i>Pilosella officinarum</i> ( <i>Hieracium pilosella</i> ), <i>Plantago coronopus</i> , <i>Rumex acetosella</i> , <i>Sedum acre</i> , <i>Teesdalia nudicaulis</i> , <i>Thymus</i> spp.	At least two species/taxa frequent and four species/taxa occasional throughout the sward	Choice of species related to NVC type and restriction to unimproved grassland, considered satisfactory when inside target. Among possible species that could be used, choice further restricted by ease of identification, visibility in recording period.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record % cover of coarse grasses e.g. <i>Holcus lanatus</i> , <i>Dactylis glomerata</i> , in period end April-mid July.	No more than 10% cover	Invasive species chosen to indicate problems of eutrophication and insufficient removal of biomass e.g. under-grazing.  Species in <b>bold</b> have been recently recorded on the site.	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
	Sward composition: negative indicator species	Record frequency of <i>Senecio jacobaea</i> , in period end April-mid July.	No more than occasional throughout the sward	Frequency outside target indicates management problems e.g. over-grazing and trampling.  Species in <b>bold</b> have been recently recorded on the site.	
U1b, c, d, f (Species-rich parched grasslands)	Sward composition: negative indicator species	Record the frequency and % cover of <i>Pteridium aquilinum</i> , in period end June-end September. NB If <i>Pteridium</i> is more than occasional throughout the sward but less than 10% cover, it is soon likely to become a problem if no management such as cutting or rolling is being carried out.	No more than 10% cover	Invasive species chosen to indicate insufficient management e.g. insufficient removal of biomass e.g. under-grazing and/or lack of cutting or rolling.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the frequency and % cover of negative indicator species. Record in period end April-mid July. <i>Carduus nutans</i> , <b><i>Chamerion angustifolium</i></b> , <i>Cirsium arvense</i> , <i>Cirsium vulgare</i> , <i>Plantago major</i> , <i>Urtica dioica</i> .	No species/taxa more than occasional throughout the sward or singly or together more than 5% cover in core areas	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target e.g. poaching, stock feeding.  This target aims to ensure core areas of MG5 grassland (and the botanical quality they support) are not adversely affected by a significant presence of <i>Cirsium</i> thistles. However, it is recognised that these thistle species are part of the overall MG5 assemblage and contribute more widely to the habitat mosaic and invertebrate requirements. Consequently,	Yes

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
				<p>some MG5 grassland areas may support &gt;5% <i>Cirsium</i> cover and ideally judgments about condition of areas should be made at a unit-based &amp; SSSI-based level.</p> <p>Species in <b>bold</b> have been recently recorded on the site.</p>	
	Sward composition: negative indicator species	Record the frequency and % cover of all tree and scrub species in period end April-mid July. NB If scrub/tree species are more than occasional throughout the sward but less than 5% cover, they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.	No more than 5% cover.	Invasive species outside target shows that habitat is not being managed sufficiently e.g. under-grazed.	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG5 <i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> lowland meadows	Extent	Total area (ha), mapped in relation to a reference level to be determined, in period mid- May - early July, before hay cut (meadows), or mid-May - late July (pastures).	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed.	Yes
	Sward structure: bare ground	Record extent of bare ground (not rock) distributed through the sward, visible without disturbing the vegetation. Record in period late May -early July, before hay cut, or mid-May - late July (pastures). Also record sometimes in aftermath grazing period in hay meadows.	No more than 5%	Outside target indicates problems with stock management e.g. poaching, supplementary feeding.	
	Sward structure: litter	Record cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area. Record in period late May -early July, before hay cut, or mid-May - late July (pastures). Also record sometimes in aftermath grazing period in hay meadows.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient e.g. not cut for hay or insufficient grazing.	
	Sward structure: average height	Record sward height in period mid-May - late July. Upper target refers to pastures only.	Sward 5-15 cm	Sward height above upper target shows that habitat is not being managed sufficiently e.g. lack of or insufficient grazing or if below lower target, is being overgrazed.	
	Sward composition: grass/herb	Proportion of non-Graminae (“herbs”), in period mid- May - early July, before hay cut (meadows), or	40-90% herbs	Low proportion outside target indicates eutrophication, usually from fertilisers, or insufficient removal of biomass, leading	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
	ratio	mid-May - late July (pastures).		to dominance by grasses.	
MG5 <i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> lowland meadows	Sward composition: positive indicator species	Record the frequency of positive indicator species in period mid May - early July, before hay cut, (meadows), or mid-May - late July (pastures). <b><i>Agrimonia eupatoria</i></b> , <i>Alchemilla</i> spp., <i>Anemone nemorosa</i> , <b><i>Centaurea nigra</i></b> , <i>Euphrasia</i> spp., <b><i>Filipendula ulmaria</i></b> , <i>Filipendula vulgaris</i> , <b><i>Galium verum</i></b> , <i>Genista tinctoria</i> , <i>Lathyrus linifolius</i> (=montanus), <b><i>Lathyrus pratensis</i></b> , <b><i>Leontodon hispidus</i></b> / <i>L. saxatilis</i> , <b><i>Leucanthemum vulgare</i></b> , <b><i>Lotus corniculatus</i></b> , <b><i>Pimpinella saxifraga</i></b> , <i>Polygala</i> spp., <b><i>Potentilla erecta</i></b> , <b><i>Primula veris</i></b> , <i>Rhinanthus minor</i> , <i>Sanguisorba minor</i> , <i>Sanguisorba officinalis</i> , <i>Serratula tinctoria</i> , <i>Silaum silaus</i> , <i>Stachys officinalis</i> , <b><i>Succisa pratensis</i></b> , <b><i>Tragopogon pratensis</i></b> , small blue-green <b><i>Carex</i></b> spp. (leaves less than 5mm wide) ( <i>C. flacca</i> ).	At least two species/taxa frequent plus at least four species/taxa occasional throughout the sward.	Choice of species related to NVC type and restriction to unimproved grassland, considered satisfactory when inside target. Among possible species that could be used, choice further restricted by ease of identification, visibility in recording period.  Species in <b>bold</b> have been recently recorded on the site.	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG5 <i>Cynosurus cristatus</i> - <i>Centaurea nigra</i> lowland meadows	Sward composition: indicators of waterlogging	Record % cover of <i>Juncus</i> spp, <b><i>Deschampsia cespitosa</i></b> , large Carex spp. (leaves more than 5mm wide) e.g. <i>Carex acutiformis</i> , large grasses (leaves more than 10mm wide, stout stems) i.e. <b><i>Glyceria maxima</i></b> , <b><i>Phalaris arundinacea</i></b> , <b><i>Phragmites australis</i></b> . Record in period late May -early July, before hay cut, or mid-May - late July (pastures).	No species/taxa together or singly covering more than 10% of the sward	Species chosen to indicate waterlogging problems when outside target e.g. from raised water tables.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the frequency and % cover of negative indicator species in period mid May -early July, before hay cut, (meadows), or mid-May - late July (pastures). <b><i>Anthriscus sylvestris</i></b> , <b><i>Cirsium arvense</i></b> , <b><i>Cirsium vulgare</i></b> , <b><i>Galium aparine</i></b> , <b><i>Plantago major</i></b> , <b><i>Pteridium aquilinum</i></b> , <b><i>Rumex crispus</i></b> , <b><i>Rumex obtusifolius</i></b> , <b><i>Senecio jacobaea</i></b> , <b><i>Urtica dioica</i></b> .	No species more than occasional throughout the sward or singly or together more than 5% cover	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target e.g. poaching, stock feeding.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the frequency and % cover of all tree and scrub species, considered together. NB If scrub/tree species in pastures are more than occasional throughout the sward but less than 5% cover, they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.	No more than 5% cover.	Invasive species outside target shows that habitat is not being managed sufficiently e.g. not cut for hay each year or inadequately grazed	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG8 - <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland	Extent	Total area (ha), mapped in relation to a reference level to be determined, in period May - end of August (before hay cut in meadows).	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Temporary reductions related to natural variation in hydrological conditions should be noted as such where information allows.	Yes
	Sward structure: bare ground	Record extent of bare ground (not rock) distributed through the sward, visible without disturbing the vegetation, e.g. from the seasonal effects of flooding. Record in period May - end of August (before hay cut in meadows). Also record sometimes in aftermath grazing period in hay meadows.	MG8, MG8-related: No more than 15% in May-early June or no more than 5% in mid-June-July	Outside target indicates problems with stock management e.g. poaching, supplementary feeding or excessive flooding.	
	Sward structure: litter	Record cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area. Record in period May - end of August (before hay cut in meadows). Also record sometimes in aftermath grazing period in hay meadows.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient e.g. lack of or insufficient grazing or not cut for hay.	
	Sward structure: average height	Record sward height in period May - end of August (before hay cut in meadows). Upper target refers to pastures only.	MG8, MG8-related Sward 5 - 15 cm	Sward height above upper target shows that habitat is not being managed sufficiently e.g. lack of or insufficient grazing or if below lower target, is being overgrazed.	

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG8 - <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland	Sward composition: positive indicator species	Record the frequency of positive indicator species from the list below to give an overall total of 2 frequent and 4 occasional or locally abundant. Record in period May - end of August (before hay cut in meadows). <i>Achillea ptarmica</i> , <b><i>Berula erecta</i></b> , <b><i>Caltha palustris</i></b> , <b><i>Cardamine pratensis</i></b> , <i>Cirsium dissectum</i> , <b><i>Eupatorium cannabinum</i></b> , <b><i>Filipendula ulmaria</i></b> , <b><i>Galium palustre</i></b> / <b><i>G. uliginosum</i></b> , <i>Geum rivale</i> , <b><i>Hydrocotyle vulgaris</i></b> , <b><i>Lotus pedunculatus</i></b> , <b><i>Lychnis flos-cuculi</i></b> , <b><i>Mentha aquatica</i></b> , <i>Orchidaceae</i> spp., <i>Potentilla palustris</i> , <b><i>Ranunculus flammula</i></b> , small blue-green <i>Carex</i> spp. (leaves less than 5mm wide) ( <i>C. flacca</i> , <i>C.nigra</i> , <i>C.panicea</i> ), <i>Succisa pratensis</i> , <i>Thalictrum flavum</i> , <i>Valeriana dioica</i> , <i>Viola palustris</i> .	Overall total of at least two species/taxa frequent plus at least four species/taxa occasional throughout the sward or locally abundant in more than 10% of the sward	Choice of species related to NVC types, restriction to unimproved grassland and wetness characteristics of habitat, all satisfactory when inside target. Among possible species that could be used, choice further restricted by ease of identification, visibility in recording period.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: indicators of waterlogging MG8, MG8-related only	Record % cover of <i>Juncus</i> spp, <b><i>Deschampsia cespitosa</i></b> , large <i>Carex</i> spp. (leaves more than 5mm wide) e.g. <b><i>Carex acutiformis</i></b> , large grasses (leaves more than 10mm wide, stout stems) i.e. <b><i>Glyceria maxima</i></b> , <b><i>Phalaris arundinacea</i></b> , <b><i>Phragmites australis</i></b> . Record in period May -end of August (before hay cut in meadows).	No species/taxa together or singly covering more than 10% of the sward	Species chosen to indicate waterlogging problems when outside target e.g. from raised water tables.  Species in <b>bold</b> have been recently recorded on the site.	Yes



Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
	Sward composition: negative indicator species.	Record the % cover of negative indicator species. Record in period May - end of August (before hay cut in meadows). <i>Senecio aquaticus</i>	No species more than occasional throughout the sward or more than 5% cover	Outside target can discourage hay/grazing management because the species is toxic to livestock, and is palatable when dry.	
MG8 - <i>Cynosurus cristatus</i> - <i>Caltha palustris</i> grassland	Sward composition: cover of Juncus spp	Record the % cover of Juncus species from groups A and B. Record in period early June - end of August (before hay cut in meadows). Group A: jointed rushes ( <i>Juncus acutiflorus</i> , <b>J. articulatus</b> , <i>J. subnodulosus</i> ) Group B: <b>Juncus conglomeratus</b> , <i>J. effusus</i> and <b>J. inflexus</b> .	Species from group A at least occasional throughout the sward. All species combined no more than 80% cover, of which no more than 50% made up of species from Group B	Juncus spp can be characteristic components of the communities. However, increasing cover is indicative of insufficient management by grazing or cutting. Group B species may indicate problems of eutrophication from various sources when outside target e.g. stock feeding, fertiliser use.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the frequency and % cover of negative indicator species. Record in period May- end of August (before hay cut in meadows). <b>Cirsium arvense</b> , <b>Cirsium vulgare</b> , <b>Rumex crispus</b> , <b>Rumex obtusifolius</b> , <b>Urtica dioica</b> .	No species more than occasional throughout the sward or singly or together more than 5% cover	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target e.g. poaching, stock feeding.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the % cover or frequency of negative indicator species in period May - end of August (before hay cut in meadows). All tree and scrub species excluding <i>Salix repens</i> , considered together. NB If scrub/tree species in	No more than 5% cover.	Invasive species outside target shows that habitat is not being managed sufficiently e.g. lack of or insufficient grazing/cutting	Yes

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
		pastures are more than occasional throughout the sward but less than 5% cover, they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.			

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG13 - <i>Agrostis stolonifera</i> - <i>Alopecurus geniculatus</i> grassland	Extent	Total area (ha), mapped in relation to a reference level to be determined, Record in period May - July (before hay cut in meadows).	No reduction in area and any consequent fragmentation without prior consent	Recoverable reduction = unfavourable; non-recoverable reduction = partially destroyed. Temporary reductions related to natural variation in hydrological conditions should be noted as such where information allows.	Yes
	Sward structure: bare ground	Record extent of bare ground (not rock) distributed through the sward, visible without disturbing the vegetation, e.g. from the seasonal effects of flooding. Record in period May - July (before hay cut in meadows). Also record sometimes in aftermath grazing period in hay meadows.	No more than 15% in May-early June or no more than 10% in mid-June-July	Outside target indicates problems with stock management e.g. poaching, supplementary feeding or excessive flooding.	
	Sward structure: litter	Record cover of litter where in a more or less continuous layer, distributed either in patches or in one larger area. Record in period May - July (before hay cut in meadows). Also record sometimes in aftermath grazing period in hay meadows.	Total extent no more than 25% of the sward	Outside target indicates biomass removal is insufficient e.g. lack of or insufficient grazing or not cut for hay.	
	Sward structure: average height	Record sward height in period May - July (before hay cut in meadows). Upper target refers to pastures only.	Sward 5 - 15 cm (excluding <i>Juncus</i> spp.)	Sward height above upper target shows that habitat is not being managed sufficiently e.g. lack of or insufficient grazing or if below lower target, is being overgrazed.	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
MG13 - <i>Agrostis stolonifera</i> - <i>Alopecurus geniculatus</i> grassland,	Sward composition: positive indicator species	Record the frequency of positive indicator species from the list below to give an overall total of 2 frequent and 2 occasional or locally abundant. Record in period May - July (before hay cut in meadows). <i>Achillea ptarmica</i> , <b><i>Caltha palustris</i></b> , <b><i>Cardamine pratensis</i></b> , <b><i>Eleocharis</i> spp.</b> , <b><i>Filipendula ulmaria</i></b> , <b><i>Galium palustre</i></b> / <b><i>G. uliginosum</i></b> , <i>Juncus acutiflorus</i> / <b><i>J. articulatus</i></b> / <i>J. subnodulosus</i> (jointed rushes), <b><i>Leontodon autumnalis</i></b> , <b><i>Lychnis flos-cuculi</i></b> , <b><i>Lysimachia nummularia</i></b> , <b><i>Mentha aquatica</i></b> , <b><i>Myosotis laxa cespitosa</i></b> / <b><i>M. scorpioides</i></b> , <b><i>Oenanthe fistulosa</i></b> , <i>Persicaria amphibia</i> , <b><i>Ranunculus flammula</i></b> , small blue-green <i>Carex</i> spp. (leaves less than 5mm wide) ( <b><i>C. flacca</i></b> , <b><i>C.nigra</i></b> , <b><i>C.panicea</i></b> ), <i>Thalictrum flavum</i> .	Overall total of at least two species/taxa frequent plus at least two species/taxa occasional throughout the sward or locally abundant in more than 10% of the sward	Choice of species related to grassland types, restriction to unimproved grassland and wetness characteristics of habitat, all satisfactory when inside target. Among possible species that could be used, choice further restricted by ease of identification, visibility in recording period.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: indicators of waterlogging	Record % cover of <i>Juncus</i> spp, <b><i>Deschampsia cespitosa</i></b> , large (leaves more than 5mm wide) <i>Carex</i> spp. (e.g. <b><i>Carex acutiformis</i></b> ), large grasses (leaves more than 10mm wide, stout stems) i.e. <b><i>Glyceria maxima</i></b> , <b><i>Phalaris arundinacea</i></b> , <b><i>Phragmites australis</i></b> . Record in period May - July (before hay cut in meadows).	No species/taxa together or singly covering more than 25% of the sward	Species chosen to indicate waterlogging problems when outside target e.g. from raised water tables.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward	Record the frequency and % cover of	No more than occasional	Outside target can discourage	

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
	composition: negative indicator species.	negative indicator species. Record in period May - July (before hay cut in meadows). <i>Senecio aquaticus</i>	throughout the sward or more than 5% cover	hay/grazing management because the species is toxic to livestock, and is palatable when dry.	
MG13 - <i>Agrostis stolonifera</i> - <i>Alopecurus geniculatus</i> grassland	Sward composition: negative indicator species	Record the frequency and % cover of negative indicator species. Record in period May - July (before hay cut in meadows). <b><i>Cirsium arvense</i>, <i>Cirsium vulgare</i>, <i>Rumex crispus</i>, <i>Rumex obtusifolius</i>, <i>Urtica dioica</i>.</b>	No species more than occasional throughout the sward or singly or together more than 5% cover	Invasive species chosen to indicate problems of eutrophication and disturbance from various sources when outside target e.g. poaching, stock feeding.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Sward composition: negative indicator species	Record the % cover or frequency of negative indicator species in period May - July (before hay cut in meadows). All tree and scrub species, considered together. NB If scrub/tree species in pastures are more than occasional throughout the sward but less than 5% cover, they are soon likely to become a problem if grazing levels are not sufficient or if scrub control is not being carried out.	No more than 5% cover.	Invasive species outside target shows that habitat is not being managed sufficiently e.g. lack of or insufficient grazing/cutting	Yes

**Site-specific standards defining favourable condition**

<b>Criteria feature</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Site-specific Targets</b>	<b>Comments</b>	<b>Use for CA?</b>
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Habitat extent	A baseline map showing the boundary of the habitat should be used to assess any changes in extent. Aerial photographs can offer a convenient means of rapidly assessing extent in some cases.	There should be no reduction in the total combined extent of wetland in relation to the established baseline.	Baseline to be established from site visits and aerial photographs In 2009.	Yes
	Habitat structure	Visual estimate of % cover of leaf litter.	Discretionary attribute: Total extent across the area assessed should be no more than 25% cover.	A high frequency and cover of exposed substrate will usually be undesirable and may indicate, inter alia, over-grazing, and water scour. Patches of exposed substrate are likely to be more typical/desirable for M10, 13-14, 37, S1-23 and some examples of M1-3 and M6. More than 25% litter cover indicates insufficient removal of biomass by grazing.	No
	Habitat structure	Visual estimate of % cover of exposed substrate.	Total extent across the area assessed should be no more than 10%.	A high frequency and cover of exposed substrate will usually be undesirable and may indicate, inter alia, over-grazing, and water scour. Patches of exposed substrate are likely to be more typical/desirable for M10, 13-14, 37, S1-23 and some examples of M1-3 and M6.	Yes

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Habitat composition	A baseline map showing the boundary of the components (where appropriate), should be used to assess any changes in extent. Aerial photographs can offer a convenient means of rapidly assessing extent in some cases.	Targets should be set for key components of the wetland where relevant and appropriate (see descriptions in sect. 8). As a generic target there should be no loss of the component types, and in some instances target extents should be set for key elements. (For lowland fens the balance between open fen and wet woodland/dense scrub should always be addressed as part of this.)	Lowland fens: Variety within fens is determined by water supply mechanism, hydrosere succession and land management practices. Account should be taken of successional processes and management aims/priorities (i.e. what a particular site is important for) in setting limits on extent of fen components. Intervention is often required to give the desired range of habitats and dependent species. The practicality of mapping certain vegetation types may also be a consideration. For Fen woodland and scrub see comments under Negative indicators (woody species) in Table 6. Lowland springs & flushes: These features are often small in extent and their boundaries may be difficult to determine. Their extent may also vary in relation to season and/or recent rainfall events. These should be taken into account when making an assessment.	Yes

Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Vegetation composition: positive indicators	Visual assessment of cover, using structured walk or transects and recording quadrats. Comparison against accurate baseline maps, assessments of whether a certain percentage of sample points laid out upon a grid conform to the community or not, shifts in the position of community interfaces along permanent transects.	For each component wetland other than fen woodland and fen meadow that has been identified on the site (according to the descriptions given in sect.8), one characteristic NVC community should be selected, any rare NVC communities present should also be monitored. Targets should be set for each of these NVC communities according to the generic limits set out in Table 5. As a generic standard, the frequencies of positive indicators should at the very least, confirm the presence of the target community. Local targets could also be set for site-specific positive indicator species, to register a decrease in frequency of 20% or more as unfavourable. Targets should be set locally to register an increase or decrease in the extent of key communities.	The suite of key communities to be monitored is chosen on a site-specific basis. Characteristic and rare communities should be chosen. Site-specific targets should be set using Table 5 as a framework. See text (section 3.5) for examples of instances where this attribute is critical.	Yes
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Vegetation composition: indicators of negative change - undesirable non-woody species	Visual assessment of cover, using structured walk or transects and recording quadrats	(a) Invasive non-native species should be absent, or no more than rare if present.  Invasive aliens within lowland fens may include <i>Crassula helmsii</i> , <i>Acorus calamus</i> , <i>Mimulus spp.</i> , <i>Impatiens glandulifera</i> , <b><i>Fallopia japonica</i></b> , <i>Heracleum mantegazzianum</i> , <i>Azolla</i> .	Spread of invasive alien spp. can often be very rapid once established.  Species in <b>bold</b> have been recently recorded on the site.	Yes



Site-specific standards defining favourable condition					
Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Vegetation composition: indicators of negative change - undesirable non-woody species	Visual assessment of cover, using structured walk or transects and recording quadrats	(b) Target should be set to register high or increasing frequency/cover of other undesirable spp. as unfavourable. May include graminoids such as <i>Phragmites australis</i> , <i>Phalaris arundinacea</i> , <i>Glyceria maxima</i> , <i>Typha latifolia</i> , <i>Juncus</i> spp., <i>Molinia caerulea</i> ; tall herbs such as <i>Epilobium hirsutum</i> , <i>Urtica dioica</i> , <i>Pteridium aquilinum</i> , <i>Rubus fruticosus</i> ; and bryophytes such as <i>Brachythecium rutabulum</i> , <i>Eurhynchium praelongum</i> , <i>Sphagnum recurvum</i> .	See Table 6 for negative indicators for each of the key vegetation communities that were monitored for positive indicators, and adapt as relevant.  Other negative indicator species have been chosen as indicative of dereliction, drainage, eutrophication or disturbance, although in some vegetation types on some sites these spp. may be acceptable components, even as dominants. Individual site circumstances must be considered. The dynamics are important, as is the apparent health of the indicators. A weak stand of moribund <i>Typha latifolia</i> , for example, among poor fen (sump wetland) with healthy invasive <i>Sphagnum</i> would not mean unfavourable condition. Conversely, an aggressive healthy front of invading <i>Typha</i> would indicate a negative trend in these circumstances.  Species in <b>bold</b> have been recently recorded on the site.	Yes

**Site-specific standards defining favourable condition**

Criteria feature	Attribute term in guidance	Measure	Site-specific Targets	Comments	Use for CA?
Lowland fens: S22 - <i>Glyceria fluitans</i> water-margin vegetation	Vegetation composition: indicators of negative change - woody species	Visual assessment of cover of the whole feature, using structured walk or transects. Aerial photography may be a useful aid though will not pick up small saplings and seedlings.	As a generic target for open fen (excluding wet woodland), woody species (including <i>Betula</i> , <i>Salix</i> , <i>Rhododendron</i> , <i>Pinus</i> , other gymnosperms) should be no more than scattered, predominantly <1.5m high. Cover should be <10% on open fen Saplings/seedlings should be no more than rare. None of these species should be present on flushes and springs, although <i>Salix</i> is acceptable at least 5m from petrifying springs.	Scrub and woodland are integral components of many fen systems and may be particularly important for invertebrates. However invasion by woody species and their development to maturity may indicate drying out, dereliction, disturbance and/or enrichment for both fen. Trees and shrubs may also exacerbate drying out.  Species in <b>bold</b> have been recently recorded on the site.	Yes
	Indicators of local distinctiveness* e.g. notable spp., transitions to other habitats, presence of pools or other structural features	Visual assessment of frequency/cover of rare/scarce/local species in sample points chosen to represent their known distribution. Structured observation or sampling. Aerial photos may offer a convenient means of rapidly assessing these.	There are no generic targets for this attribute. Local targets should be set to ensure: - existing populations of rare/scarce species[1] are maintained - community and habitat transitions are maintained at current levels and in current - existing populations of rare/scarce species are maintained at least at current levels and often local distribution characteristics - community and habitat transitions are maintained at current levels and in current locations[1] - other locally distinctive features e.g. pools are maintained. Additional targets may be set for other attributes as appropriate. [1] Transitions from fen to other habitats e.g. grassland, heath are	This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not covered adequately by the previous attributes, or by separate guidance (e.g. for notified species features). Targets to be determined locally. Transitions from fen to other habitats e.g. grassland, heath are often important and vulnerable features.	

<b>Site-specific standards defining favourable condition</b>					
<b>Criteria feature</b>	<b>Attribute term in guidance</b>	<b>Measure</b>	<b>Site-specific Targets</b>	<b>Comments</b>	<b>Use for CA?</b>
			often important and vulnerable features.		

<b>Audit Trail</b>
<b>Rationale for limiting standards to specified parts of the site</b>
<b>Rationale for site-specific targets (including any variations from generic guidance)</b>
<b>Rationale for selection of measures of condition (features and attributes for use in condition assessment)</b> (The selected vegetation attributes are those considered to most economically define favourable condition at this site for the broad habitat type and any dependent designated species).
<b>Other Notes</b>

## **Annex 1 Lists of Surfaces for Structural Recording Samples (SRS)**

Preferred surfaces are shown in bold. Typical plants for each surface are in brackets. Heights given are rough indications only, not definitions or limits.

### Canopy Woodland:

- 1) Bare soil, mud or water film (sparse lower plants or scattered dicots).
- 2) **Short layer** (<c0.3m)
- 3) **Medium layer** (>c0.3m)
- 4) **Scrub/ young trees/ understorey** (<c5m) (Crataegus, Prunus, Corylus, Quercus, Betula, Fraxinus).
- 5) **Canopy trees** (Quercus, Betula, Fraxinus).

### Open Space in Woodland:

- 1) **Bare ground or sparse lichen/bryophyte cover** (no or very sparse cover with occasional ruderals, lichens & bryophytes).
- 2) **Short swards in rides & glades** (<c0.1m).
- 3) **Longer grasses/forbs** (c0.1-0.3m)
- 4) **Coarse, tussocky grasses & larger forbs** (>c0.3m) (Dactylis glomerata, umbellifers, Cirsium spp, Carex pendula etc).
- 5) **Young scrub** (<c.1.5m) (young plants of tree and understorey species, especially flowering shrubs such as Crataegus, Prunus, Rubus & Rosa spp).
- 6) Mature scrub & trees.

### Wood-Pasture and Parkland:

- 1) Bare ground (none, or very sparse lower plants and ruderals).
- 2) **Short sward** (<c0.1m) (grasses and grazed grassland/ heathland forbs).
- 3) **Taller, coarser grasses/ forbs & tussocks** (Holcus, Dactylis, Deschampsia, Juncus, composites, nettles).
- 4) Bracken.
- 5) **Scrub and young trees** (eg Crataegus, Rubus, Ulex, Prunus, Corylus, tree saplings).
- 6) **Veteran trees that have 'grown downwards' by death of higher canopy** (main wood-pasture trees, e.g. oak, hornbeam, ash etc).
- 7) **Tall veteran trees and trees that are mature but not yet veteran** (species as 6).

Annex 2      Maps

Boundary map

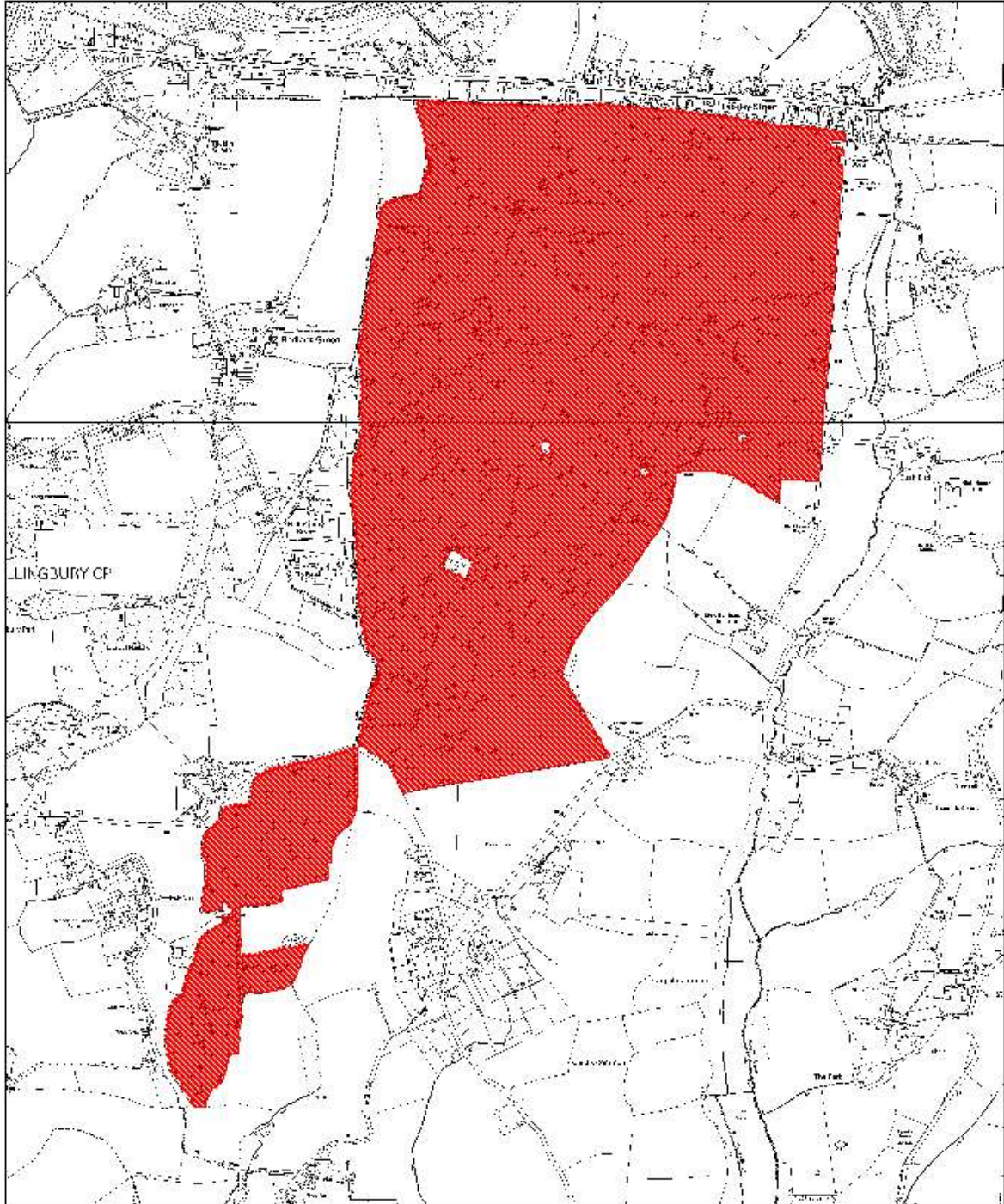
Unit map

NVC communities map 2002

Management compartment map 2006

# Hatfield Forest

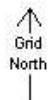
## Site of Special Scientific Interest



Scale 1:21,820 Map 1 of 1  
0 1 2 3km  
0 2500 5000 7500m

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown copyright. All Rights Reserved. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number 100046223, 2009

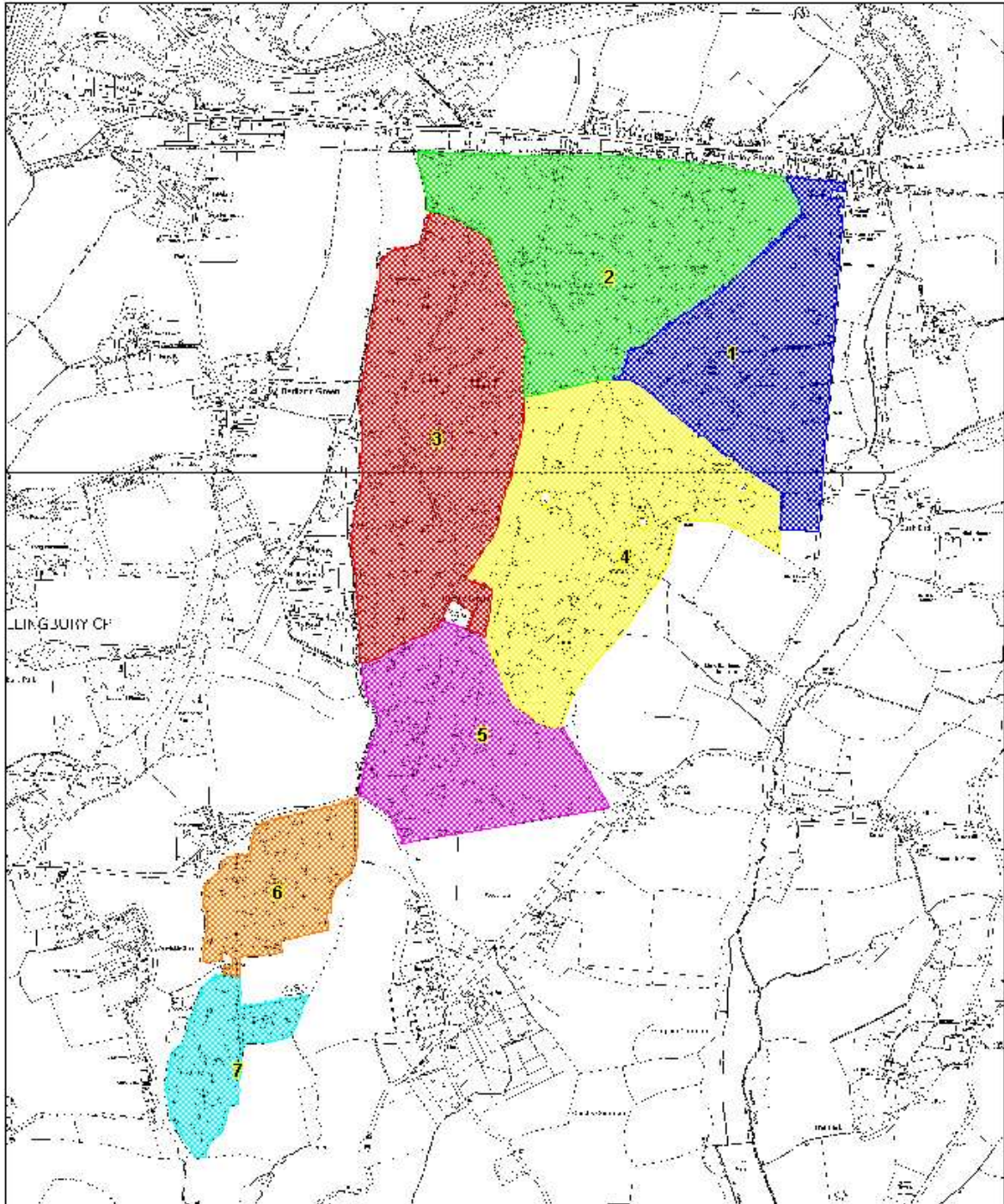
Drawn by: Michael Parkin  
Date: 26/1/2009  
Ref: t153461928  
© Natural England 2009



Natural England  
Essex & Herts Land & Sea Management  
Harbour House  
Hythe Quay  
Colchester  
Essex  
CO2 8JF

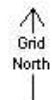
# Hatfield Forest SSSI

## Units



Scale 1:21820 Map 1 of 1  
 0 1 2 3km  
 0 2500 5000 7500m

Drawn by: Michael Parkin  
 Date: 25/2/2009  
 Ref: t153461928  
 © Natural England 2009

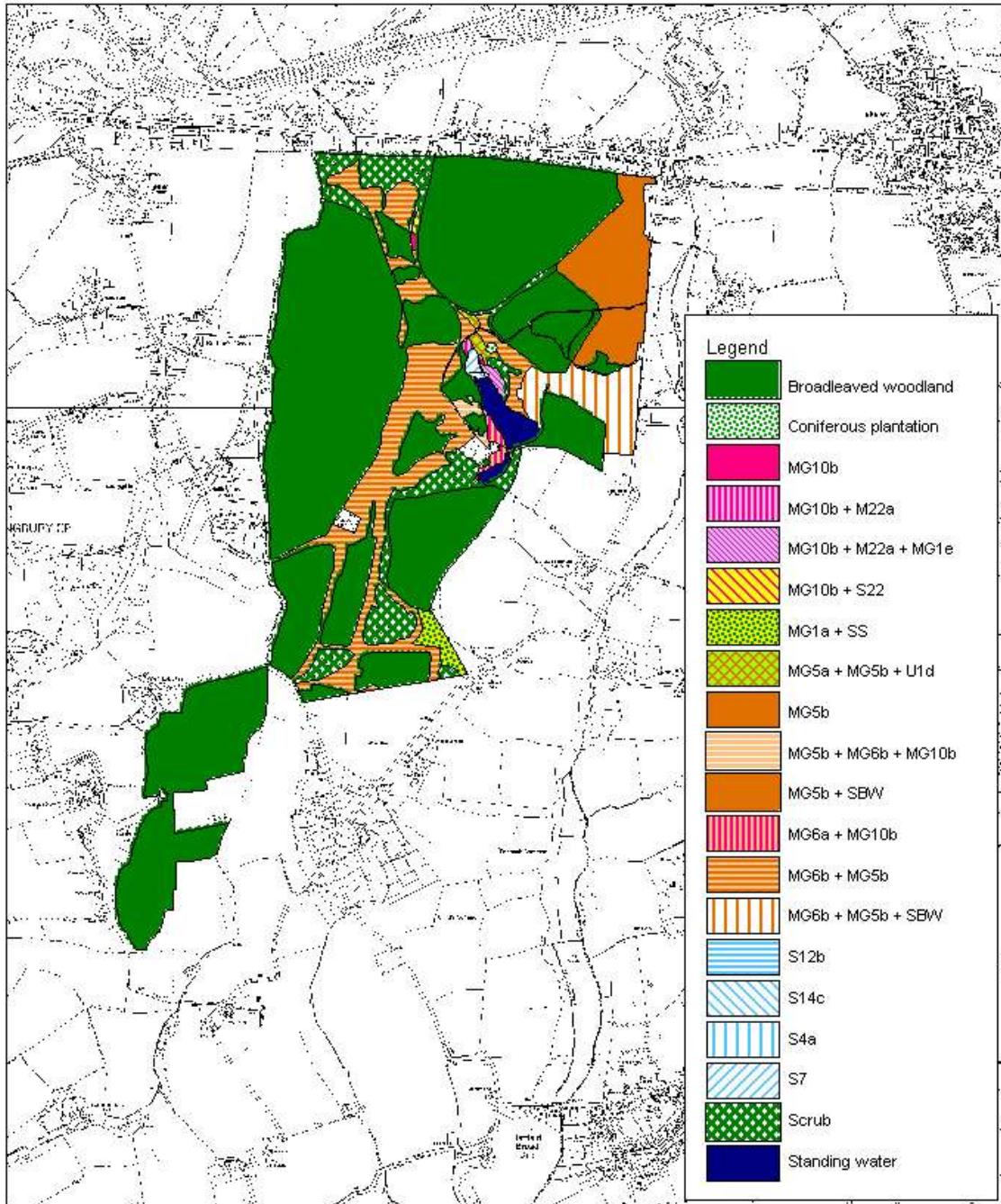


Natural England  
 Essex & Herts Land & Sea Management  
 Harbour House  
 Hythe Quay  
 Colchester  
 Essex  
 CO2 8JF

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. All Rights Reserved. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number 100046223, 2009

# Hatfield Forest SSSI

NVC Map based on 2002 survey



Scale 1:27460 Map 1 of 1  
 0 2500 5000 7500 10000  
 0 1 2 3 km

Drawn by: Michael Parkin  
 Date: 24/3/2009  
 Ref: t153841900  
 © Natural England 2009

↑  
 Grid  
 North

Natural England  
 Essex and Herts Land and Sea Management  
 Harbour House  
 Hythe Quay  
 Colchester  
 Essex  
 CO2 8JF

This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown copyright. All Rights Reserved. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number 100046223, 2009



