NETTLEBED & DISTRICT COMMONS CONSERVATORS

Discussion Document for the Draft

KINGWOOD COMMON MANAGEMENT PLAN

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This working document will be used in discussions to reach agreement on the management of Kingwood Common for the next five to ten years. It is in two parts – a rationale to put Kingwood Common into local, national and historical context - and suggested prescriptions to help guide both ourselves and the common's volunteer groups in carrying out future management work on the common.

1.0 RATIONALE

1.1 Natural heritage

This description of Kingwood Common is taken from the Nettlebed and District Commons Management Plan 1995 – 2005[1] section 1.2.2.3, written by Rod d'Ayala and Sally Rankin.

'Kingwood Common is characteristic of a recently neglected heath in that it is dominated by a young birch and oak woodland, with a bracken dominated ground flora. Older residents remember a much more open Common with fewer trees and extensive heathland, up to about 50 years ago. Trees were coppiced on some parts of the Common to provide a supply of wood, but the grazing of animals and controlled burning kept down the growth of tree seedlings over the rest of the area. The regular grazing of the past no longer takes place and this has led to the regrowth of trees and shrubs.

- Woods - the Common today is largely covered by bracken and small trees, mostly silver birch (*Betula pendula*) and oak (*Quercus robur*) with some aspen (*Populus tremula*). The extensive birch woodland is unusual in the Chilterns, and as is often the case in birch woods, large numbers of fungi species are present. None of the Common is 'ancient woodland' but some of the woods on the northern part of the Common contain ancient woodland species and Common Spotted Orchid (*Dactylorhiza fuchsii*).
- Heathland - heather survives in small isolated pockets, some of which are currently open, however, left untended they would soon be shaded out by bracken.
- Bracken stands - much of the southern end of the Common is densely covered with bracken. It is the dominant plant in the ground layer in all except the darkest woodland.'

1.2 Cultural heritage

Kingwood's cultural heritage includes ancient boundary banks that define the common, with at least one notable tree, and the faint remains of associated ditches. Much more prominent are the remains of a troop camp constructed in the northern section of the common during World War 2, used briefly as a hospital and later as a refugee camp. A very useful aerial photo of the camp, taken since the buildings were removed, is used in volunteer work parties to locate the remaining features, now largely overgrown, some of which have become informal pathways. Local archaeologists have been approached re surveying and mapping both Kingwood's ancient and recent cultural heritage. This will also help locate any potholes, wires and other hazards that remain following building removal of the refugee camp, and allow for their containment.

1.3 Vision

Kingwood Common is one of eight commons that we manage as the Nettlebed & District Commons Conservators. The overall vision stated in our Nettlebed Commons Management Plan 2005 is simple and still valid today:

'The Nettlebed Commons offer a remnant of a tranquil, unique, ancient and wild landscape in dramatic contrast to the intensive management of surrounding land and the busy world.

The vision is to restore and maintain the unique landscape and wildlife of the Commons both for the enjoyment of people and conservation of wildlife, providing opportunities for recreation, appreciation and learning whilst sustaining an important link to our cultural and natural heritage.'

1.4 Aims

We aim to conserve the wildlife on Nettlebed and District Commons and to maintain the paths and bridleways for the enjoyment of the local community, as well as preventing encroachment and so keeping the eight commons open for all. With few resources this is not easy and we are grateful for the support of the Sonning Common Green Gym in keeping the glades open and the paths clear. With the inception of the Kingwood and Peppard Commons Volunteers in November 2011, complementing the work of the Green Gym we now have the following aims for Kingwood Common:

A. Protect the common from encroachment and misuse, so to retain the land for all the community

B. Maintain the informal paths and bridleways to provide opportunities for amenity on the common

C. Restore and maintain glades of lowland heath, and manage the surrounding secondary woodland to conserve as varied wildlife on Kingwood Common as possible

D. Map the archaeology and take its conservation into consideration when at work on the common

1.5 Context and Management History

1.5.1 Local context

Kingwood Common is a wonderful natural resource for us all. Its mosaic of open areas and woodland attracts walkers, with and without their dogs as well as horse riders, runners and cyclists, all taking exercise in quiet enjoyment of its peace and tranquillity, its interconnecting paths providing variety and interest. This connection with nature provides both health and amenity benefits on a local scale, and particularly for those who take part in path clearing and maintenance work, who also benefit socially.

Kingwood Common is a local cultural resource in that it is still a resource in common to the local community, ours to walk whenever we wish, with a few properties retaining rights of estover (taking wood) and turbary (taking turf), dating from the 1906 Nettlebed and District Commons (Preservation) Act[2]. During the 2nd World War the common was unwooded and was partly built on to provide for military operations.

1.5.2 National and global context

Kingwood Common also provides both health and amenity benefits on a wider scale to those that visit from near and far. The common has national, even global, significance in terms of the species that it still supports and those it could perhaps again support if brought into better management. Kingwood Common is a designated 'Local Wildlife Site' (LWS) for its area of lowland heath, which is a UK Biodiversity Action Plan Priority Habitat. For this reason it is also included in the Chilterns Dipslope and Plateau Conservation Target Area, one of 36 such areas in the county, and valued as areas of high conservation value by Natural England. Descriptions of these terms are given at http://www.oncf.org.uk/biodiversity/biodiversity.html. LWS designation gives the common extra protection than it already has through the 1906 Act and gives us advice and support from the Local Wildlife Site officer of BBOWT the local Wildlife Trust in terms of its management.

Lowland heath supports a suite of species that are not found in other habitats. It is a nationally rare habitat and a particularly rare resource in Oxfordshire, which gives both a duty to restore it and the problem of managing that duty. For any rare habitat the local loss of its component species is a greater loss than the local loss of species from a common habitat would be. Secondary woodland for instance is very common in the UK and any species lost will replace naturally from other nearby sites. Loss of species from any habitat means that their habitat works less well, potentially leading to further species loss. If our environment is not functioning naturally then neither are we. Biodiversity is a resource in common and a 'common good'. This principle is addressed in the **Natural Environment and Rural Communities Act 2006**, described at the Public Inquiry, Section 40 of which states:

'**Every public authority must**, in exercising its functions, **have regard**, so far as is consistent with the proper exercise of those functions, **to the purpose of conserving biodiversity'.** http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/duty.aspx. Whilst not a public authority ourselves and thus not directly responsible, one of our nine Conservators is a representative of the Rotherfield Peppard Parish Council, while the South and Vale District Council appoint two more of our nine Conservators. As the Inspector remarked in her **Application Decision**[3] (item 44) 'the parish, district and county councils do have a role to play.'

The Lawton Review, (September 2010), entitled '**Making Space for Nature: A review of England's Wildlife Sites and Ecological Network**' http://www.defra.gov.uk/news/2010/09/24/nature-news/) was also described at the Inquiry. In particular it states the importance of maintaining even small stepping stones of natural habitat amongst our growing urban infrastructure and agricultural deserts. We are at the stage when all of our remaining natural habitats are precious, the rare ones in particular.

The Inspector goes on to say, in item 45, that 'I am satisfied that the proposed works are intended to make a positive contribution to nature conservation with respect to the identified habitat and consider that this would probably be the case.'

1.5.3 Recent Management History

Long before the present national concern with habitat loss the resumption of grazing with stock on parts of Kingwood Common was suggested in the Nettlebed and District Commons Management Plan 1995 – 2005[1]. This plan make interesting reading (in particular section 1.2.3.3 on page 11, and on the basis of the plan a ten year Countryside Stewardship Scheme (CSS), ran from 1995 – 2005.

A partnership with supporting agencies was created in 2002 to help us manage the end of the CSS scheme and find funds to continue the work. The main supporting agencies were:

The Chilterns Conservation Board
The Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust
Oxfordshire Nature Conservation Forum
South Oxfordshire District Council

After eight years of discussion and local consultation this partnership led to our application to the Secretary of State to fence and intermittently graze a part of Kingwood Common in order to keep the present glades open. Local opposition led to public inquiry in April 2011 and our application was refused. 76 letters of objection were received by the Inspector, with 41 in support of the application. Most objections centred on residents' concerns for safety whilst stock were on the site, and for loss of freedom to roam at will over the common. Regarding our consultation methods the Inspector commented that 'although…there may have been some matters that could have been dealt with differently, overall that process appears to have been open and transparent to those who might have wished to take an interest at the time.' The full report from the Inspector can be viewed at http://www.nettlebed-commons.org/project.html

1.5.4 Moving on from the public inquiry

With our application refused we will manage Kingwood Common in other ways. Nothing replicates habitat management by stock grazing but with the vital support of the Kingwood and Peppard Commons Volunteers formed as a direct result of the inquiry we can again look to the future. Contact details for Sonning Common Green Gym, Kingwood and Peppard Commons Volunteers, and for the Nettlebed Conservators can be obtained from:

Clerk to the Conservators:
Elizabeth Smeeton
01491 641199. clerk@nettlebed-commons.org

Kingwood & Peppard Commons Volunteers
kpcv@nettlebed-commons.org

http://kpcvol.wordpress.com/about/
We meet on the first Saturday of each month, from 9.30 – 12.30 with a break for refreshments, it's free, and all are welcome. Please bring your own tools.

Sonning Common Green Gym
? contact
?

1.5.5 The next five to ten years

Using funds kindly given through the Chilterns Conservation Board Sustainable Development Fund, topped up from our own account and by Oxfordshire Nature Conservation Forum we have commissioned a set of suggested management prescriptions for Kingwood Common to guide us through the next five to ten years. These prescriptions are written by a local ecologist with many years' experience of nature conservation within public areas and are written for a ten year period to ensure the long term view. They include footpath maintenance, conservation of archaeology, lowland heath management in the glades, and also suggest employing the centuries old practice of coppicing as a means of varying tree height and letting light back into the common. This would have many benefits, including:

- Giving the common more interest and beauty from an amenity point of view
- Providing wood fuel for the use of the local community, as a cheaper alternative to fossil fuels
- Creating more variety of habitat and therefore of species due both to the creation of variety in age of the trees and in the amount of light reaching the ground and so stimulating ground flora
- Increasing the amount of carbon stored in the woodland, and
- The great potential for community involvement, access, educational opportunities, health benefits and social inclusion through managing the resource

The Draft **Management Plan** in Section 2 below gives a comprehensive description of individual site features. The prescriptions given are open to consultation, according to the abilities and commitment of the various groups and individuals involved in managing the common.

References for Section 1

1. Nettlebed and District Commons Management Plan 1995 – 2005. Available at http://www.nettlebed-commons.org/project.html
2. 1906 Nettlebed and District Commons (Preservation) Act. Available at http://www.nettlebed-commons.org/project.html

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2.1 Purpose and Scope of the Management Plan

The eight Nettlebed Commons form a part continuous series of land from Nettlebed Common itself in the north - to Peppard Common in the south. The Commons have a varied landscape with both open and wooded habitats which support a large number of associated species. The commons have long been recognised as important sites for both landscape and nature conservation - and being registered commons are also important public access areas. This plan only covers Kingwood Common and the management plans for the other Commons have yet to be updated.

The purpose of this plan is to guide the management of the main features of interest on Kingwood Common - including its historic landscape, public access and wildlife. The previous site management plan ran from 1995 to 2005. This updated plan is not intended to be as comprehensive a description of the current or historical condition of the site as the previous plan, as this is available elsewhere. It does however include sufficient summary information to inform the process of updating the management plan and provide a rationale behind the management decisions and tasks outlined in the plan.

2.2 Summary Descriptions of Main Site Features

2.2.1 Recording Areas

For the purposes of this plan Kingwood Common is divided into four areas. Kingwood North is the largest area, north of the main central block of houses. Kingwood South is the more or less triangular area south of the main central block of houses. These two areas are linked by a narrow north south section of common, sandwiched between two blocks of houses. Kingwood East is the smaller area of the common east of Colmore Lane and towards the south of the Common. Kingwood West includes the various discontinuous sections of land west of the Peppard / Stoke Row road, the largest mostly wooded part including the route of the power lines to the north, which includes some small areas of remnant heathland habitat. The previous management plan divided the Common into eight smaller units (Compartments K1 to K8, see map 1) - based in large part on site features such as roads, tracks and property boundaries, rather than habitats. These compartments have been the standard way to record species and other data for the Common, and their use has been retained for this plan to maintain a continuity of recording. Kingwood North includes Compartments K2, K5, K6 and K7. Kingwood East includes Compartment K1 only. Kingwood South includes Compartment K4 only. Kingwood West includes Compartments K3 and K8.

For the purposes of the survey for this plan Compartment K2 was divided into smaller units, which are also shown on Map 1.

2.2.2 Historic Features and Archaeology

Boundary Banks
The oldest artificial structures on the common are (where they exist) the banks that define the boundary of the common with the adjacent land holdings. These banks, in part at least with an associated ditch, are not necessarily familiar features as many are at the margins of the common not often visited by people. The banks may support features of interest in their own right such as prominent or notable trees. One such tree is the mature Wild Service Tree (the only one on the common) growing on the boundary bank in the northernmost corner of the Common. Wild Service Tree is an uncommon species with only a handful of known sites and small number of plants in the local area.

Remains of WW2 Camp
Kingwood Common is one of several local sites that were used as troop camps during World War 2. (Part of Nettlebed Common was also used.) The active life of the camp on Kingwood was extended after the war, when it was used by refugees. The past use of the site as a camp and its surviving remains are one of the features of the site and thus something that needs to be considered in this management plan. Surviving elements of the camp include concrete tracks, concrete turning or standing areas, building foundations, drains, conduits etc. The concrete tracks are an important part of the well used network of paths that criss-cross the Common. It is difficult to actively conserve the remains of the former WW2 camp and in the main the most practical approach is probably to manage them by benign neglect, neither formally maintaining, or removing, them but allowing nature to take its course. Features such as open drain holes could potentially be dangerous to site users, especially where located very close to the network of concrete paths. Work will be needed to ensure these are kept safe and checked on a regular basis to make sure they remain safe. As far as it is known the full extent of the remains have yet to be described and mapped, and the compilation of such information would be very valuable for any future detailed management decisions.

Other Archaeology
A survey of any other known archaeological interest is being arranged. Records may be available from the county archive in Oxford, but there could be many other sources as well.

2.2.3 Public Access

Kingwood Common supports a complex network of roads, tracks and paths. Most of the routes are informal paths which have no official designations, but there are some legal rights of way. Some but not all of the paths were mapped as part of the surveys for the writing of this plan. Being a registered Common there is a general right of access to all parts of the site. The public access routes include (list not definitive):

Roads

- Colmore Lane running south to north along the east side of the Common (c. 1600 metres)
- Peppard / Stoke Row road running south to north through the west side of the Common (c. 1000 metres)

Bridleway

- Bridleway running east to west across the north part of the Common (c. 600 metres).

Tracks

- Gipsy Lane, running east /west, defining the north edge of the Kingwood South, defining the southern margin of the main housing block (c. 400 metres)
- East / west track through the south part of Kingwood South (c. 100 metres)
- Other access tracks leading to houses in Kingwood North and East

Public Footpath

- Footpath parallel with and north of Lime Avenue along the western edge of the Common next to Holly Grove (c. 680 metres)

Concrete Tracks

- Concrete tracks in north west part of Kingwood North (c. 1000 metres)

Other Paths

- Several linking informal undesignated paths criss-crossing Kingwood North and Kingwood South (length not estimated, but hundreds of metres)

2.2.4 Existing Wildlife Habitats

Open Habitats – Grass and Heath

Heathland and acid grassland habitats are rare in Oxfordshire for two main reasons. Firstly, the underlying geology of the county is such that most soils are either calcareous or neutral in character and open habitats such as calcareous grasslands are much more common. However, acidic conditions are not uncommon in this part of the South Oxfordshire Chilterns and in the past acid grass and heath must have been much more common. after the cessation of management such as grazing large parts of the once open habitats are now dominated by trees and woodland. The Nettlebed Commons (which include Kingwood Common) support a significant percentage of the current area of open acidic habitats in the county.

On Kingwood Common the current area of open acidic habitats includes both longer standing small remnants of the original open landscape and larger more recent areas of habitat restored in the last 20 years. These open habitats include acid grassland, stands of Heather (mostly Common Ling *Calluna vulgaris*) and other habitats such as Bracken and/or rough herbs. The largest area of open habitats is in the south east part of Kingwood North, the largest of the four parts of the common. Other open areas, including stands of heather, also occur in the southern and western parts of the common. There is also evidence to suggest other areas of previously open habitats in the less recent past e.g. in the now shady wooded area north of Great David's. The nearest site with existing open acid habitats is Burnt Platt, a Forestry Commission plantation directly to the north of Kingwood Common. This site includes an open, wide central ride with abundant Heather and other typical acid loving plants - with smaller areas of heathy habitats off the main ride.

The open areas of Kingwood Common support a typical suite of acidic plants such as Heath Bedstraw, Heath Milkwort, Pill Sedge, Heath Grass, Heather / Ling *Calluna vulgaris* and Bell Heather *Erica cinerea*. Other plants are found in the more transitional habitats including

Elegant St. Johns' Wort *Hypericum pulchrum* and Creeping St. Johns' Wort *Hypericum humifusum* in wood edge habitats and bare areas, respectively. Some of these acid plants are widespread while others are rare on site and potentially very rare in the county. In Oxfordshire, Heath Rush *Juncus squarrossus*, is as far as it is known only found on Kingwood Common and here in only small amounts in recent years.

It should be emphasised that the presence of Heather or Bell Heather as either small or large stands is not the definitive measure of ecological health of these open habitats. These low shrubs are an important constituent and a defining feature of "heathland" habitats in a technical sense – but only part of the desirable mosaic of different vegetation types.

Woodland and Trees

Woodland is currently the dominant habitat on Kingwood Common, however none of the Common is ancient woodland, i.e. habitats that have been continuously wooded (and/or managed as woodland) since 1600. The trees on site are not all of recent (i.e. post WW2) origin only. Some parts, most notably in the north part of the common appear to be significantly older and may have been managed (at least for a short period) by deliberate coppicing. It is possible however that the tree forms are more of a result of one or more clearances rather than a deliberate and active cycle of deliberate coppicing. In places some species of so called ancient woodland indicator ground plants can be found – but the most common and/or widespread species on site are those that are capable of spreading relatively quickly into new woodland – again suggesting the relative young age of the woodland habitats. Species such as Bluebells *Hyacinthoides non-scripta* are also capable of living in more open wood edge habitats and are not dependent on a dense and/or more or less continuous cover of trees. As part of the survey undertaken for the writing of this plan, these "ancient" woodland indicator plants were mapped when encountered. However, a definitive survey of these and other woodland plants was not carried out.

Some areas of woodland have a wider more scattered cover of often larger trees with a minimal or non-existent shrub layer but an extensive and well developed field layer of species such as Bracken and (perhaps more in the past) in one area at least in the central part of the Common, Rosebay Willowherb *Chamnaerion angustifolia*. For the purposes of this plan this type of woodland has been classified as Open Woodland. In some areas, below the field layer is a ground cover of spring plants with Bluebells being the most obvious example, which flower before the field layer closes over later in the year.

Glades, areas without trees, of a variety of sizes both small and large - are important features of all woodlands. In woodlands managed by non-intervention such areas may need to be actively managed to maintain both their size and structure. Existing glades within the areas designated as non-intervention or open woodland need to be identified in order that their management be taken into account in a more detailed work plan. Given the closed nature of much of the woodland on the Common, the creation of new glades could be a valuable addition to the ecological management of the site. Glades are also attractive features for people using the common – creating a more varied landscape.

Overall the most common species of tree on the Common are Oak *Quercus robur* and Birch *Betula pendula* – with the Oak being the dominant species in the longer established

woodland and Birch being more abundant in the areas of younger woodland. However there is a good variety of other species (mostly native broad leafed species), with some like Aspen being more common in some parts and locally in places as, if not more, abundant than Oak and Birch. Around the margins of the common, adjacent to neighbouring older woodlands Beech is not uncommon. In parts Holly is a common under storey species.

Scrub habitats, i.e. younger, more recently developed, denser woodland made up of smaller (shorter) trees, with Hawthorn C*rataegus monogyna* often being a common component, is much less common and concentrated in the south part of the common. The presence of scrub habitats on this part of the common probably reflects its more open nature which survived later than many other parts of the Common, perhaps in part due to incidents such as a fire in the early 1970's as well as more recent clearing work (areas not subsequently kept open).

One feature of the Common is the presence of a few non-native trees including garden escapes, for example *Amelanchier*, of which there is perhaps only one known established tree, to be found on the south part of the common. By contrast, Domestic Apples are widespread and not uncommon – perhaps naturally (self) sown but also perhaps deliberately planted in the period when the Common was used as a camp. Overall few if any of these non-native / non-local tree species cause potential or actual problems.

In recent years most of the Common habitats have not been actively managed. The exception to this is areas where open habitats have been the priority and trees felled and the cleared areas subsequently kept open by controlling any new trees and the re-growth from cut stumps. This concentration on re-creating or maintaining open habitats in specific parts of the site means there has been no deliberate management policy for the remaining woodland on site, and by default if not deliberately, it has been managed by non-intervention.

Among all the thousands of trees on site are some individual trees of particular note - including large and/or or prominent landscape trees. Examples of these trees can be seen dotted throughout the open habitats, often at the junctions of two open areas and/or along linking rides and paths. Other important trees may be less obvious, e.g. the one and only Wild Service Tree *Sorbus torminalis* on site, which grows on the boundary bank at the extreme north end of the Common. During the surveys made in preparation for this plan, some of the large and/or otherwise notable trees have been mapped - and it would be useful to continue this survey.

Ponds

There are three existing ponds on Kingwood Common, all in the north part of the site (Compartment K2). The most established of these is located adjacent to Barn Farm- and in this plan is (imaginatively) referred to as Barn Farm Pond. This small pond has in the past suffered from pollution as a result of run-off of brackish water from the nearby salt dump but in a field test done as part of the work for this plan its water is now apparently clean.

The largest pond, known by some as Patricks' Pond (after former local resident and character Patrick Anstee), was in March more or less dry perhaps after its clay base was damaged a few years ago by falling trees – and has developed into a Pendulous Sedge bed. However, it is just as likely that it is dry because in recent years there has been little rain and it relied on and was designed to collect water when the nearby Thames Water reservoir was accidentally or deliberately flushed out, something that no longer happens. The upper level of the pond basin is at the same level as, or above most of its immediate surrounds and thus only has a small catchment over and above its own area – an area not sufficient to keep it full if it leaks and/or at times of drought. Some non-native species of plant were introduced into the pond by person(s) unknown after it was created - and if still present these plants would need to be taken into account in any restoration plan. The Pendulous Sedge, planted around the margin of the pond has proliferated and has started to spread along track edges in the north part of the common that radiate away from the pond. Concern has been expressed by some about the spread of this species and it would be useful to establish its status and rate of spread.

To the east of Patricks' Pond is a smaller, shallower, more or less temporary pond (known as the Temporary or Sump Pond) an older pond which was incorporated into the flood system for the reservoir when it was used as the feeder pond for Patricks' Pond. Even though small and shallow this pond regularly holds water and was wet during the period of the writing of this plan.

There have been no recent detailed surveys for any of these ponds (only brief provisional surveys for this plan) - and before detailed management plans could be devised for them, such surveys will be needed.

South west of Barn Farm Pond are two small wet hollows adjacent to the common boundary, which in early spring 2012 held shallow water. One pool has formed in a natural low lying area, while the other has formed where a tree has fallen over taking its root plate with it (i.e. a tree fall pond). This part of the common is a low lying area which receives drainage from both the common to the south and the neighbouring fields (not common land) to the north. Barn Farm Pond is located at the top of this natural drainage line, and excess water from this pond may feed the small lower hollows. This minor valley may be suitable for creating new ponds, should this be desirable. However, before any such ponds can be created it will be necessary to carry out a more detailed survey looking at the ecology, hydrology and geology of the area and to ensure any legal issues are explored given its status as common land.

Hard Standing and Other Bare Ground Habitats

Very early succession habitats such as bare ground and hard standing areas (the larger concreted areas of the WW2 camp) and where present their surrounding spoil banks provide a very different kind of habitat compared to the preceding habitats. The two main artificial areas of this habitat are Red House Square (on the west side of the Common) and the Salt Dump (at the north end of the common). Smaller areas of concrete, mostly shaded by trees, occur in the area of the former main camp in the central western part of the common. In the grass /heath habitats bare areas of soil provide a similar natural habitat. Annual or short lived plants are typical of such bare areas which also provide warm sunning

places for invertebrates. In time natural succession will lead to vegetation of more permanent habitats colonising, ultimately trees. Thus, without management these bare areas will eventually be lost - though for the concrete areas this could take several decades as plant colonisation is relatively very slow compared with bare soil. The concreted areas also create islands of calcareous substrates – in contrast to the natural acidic substrates elsewhere on site and thus opportunities for different plants to grow that would not normally be found on a typical acid site e.g. Wild Parsnip *Pastinaca sativa* and Travellers' Joy *Clematis vitalba*.

Grassland and Woodland Verges

Alongside larger tracks, roads and residential properties are both grassy and/or woodland verges – with habitats that by dint of their location are not necessarily contiguous with and may be different to and/or managed in a different way to the surrounding wildlife habitats. Their different circumstances means they can support small outlying examples of larger habitats found elsewhere on the common and/or support particular species not necessarily common elsewhere on site.

The treatment of such sites may be slightly problematic. For example, where areas have been kept short by regular mowing alongside properties (management that technically should be undertaken only with specific permission) can be found stands of plants such as Harebells *Campanula rotundifolia*, which until the relatively recent recreation of open grass / heath habitats would have been rare or unsual species on site. Ideally the frequency and extent of management of such sites needs to be clarified and if required formally agreed by all the concerned parties.

Where tracks or verges are bounded by routes used by vehicles there may be issues with erosion especially where vehicles need to pass each other or turn. Measures may be needed to control or reduce damage to the physical structure and/or habitats and species of these verges.

Verges and woodland areas adjacent to properties are also the most likely areas for potentially problematic non-native plant species to become established - see the "Species" section below for more information.

2.2.5 Species

The habitats on Kingwood Common support a large number of species, some of which are listed in the brief habitats summaries above. The species present include some that are typical of acidic habitats and uncommon or rare in Oxfordshire – acidic habitats are unusual in Oxfordshire because the underlying geology of the county is dominated by calcareous or neutral substrates. In the past, surveys have been undertaken of not just the plants but also (though much less often) other groups of species such as invertebrates. Other more casual or *ad hoc* records may also be useful in an attempt to define the importance of the site for nature conservation. It would be useful to review all the existing records and where necessary carry out further survey work to update the records for the site. For instance, a terrestrial invertebrate survey was undertaken prior to the recreation of the current relatively large open grass / heath habitats. It was found that the remnant areas of open habitat supported very few if any typical heathland invertebrates – a situation which may or may not be true today. A range of good woodland species used to and may still be present including particular butterflies (a better known species group) such as Purple Emperor *Apatura iris* and White Admiral *Ladoga 16amilla*. A review of the records for and available information on such species would be useful to attempt to confirm their current status.

It should be emphasised that in this plan, individual "desirable" species that are either good habitat indicators or rare and/or interesting species have not been treated as features in need of management in their own right – and thus will have no specifically targeted management designed to ensure their continued existence and/or improvement in conditions for them. As far as it is known there is no one species that requires special work, over and above that designed to maintain and/or improve the habitats in which they are found and depend on. However, the continued presence of and potentially increases in the abundance or distribution of such species is a good indicator of the ecological health of the site and success of the management – thus such species are potential targets for recording and /or monitoring work.

In sharp contrast, some non-native species, and also perhaps a few native species may require specific management measures – particularly those that are potentially and/or actually invasive or otherwise problematic. The purpose of such measures will be to either reduce or entirely stop their potential impact on the habitats or other species on site. Most of the known species that fall in to this category are non-native garden escape plants – whose distribution is concentrated around the margins of the Common close to residential areas. Probably the two most invasive species of plants are Greater Periwinkle *Vinca major*, and the variegated form of Yellow Archangel *Lamiastrum galeobdolon* var*. argenteum*. These species can both be found as large (and increasing) stands which have in places already entirely out-competed more desirable native ground plants. As part of the survey work undertaken to develop this plan, the locations of all potential and actual problematic plants have been mapped – though it is likely other locations remain to be recorded. A full list of potential problem species is included in the Appendices.

2.3 Summary List of Main Site Features

The main features of interest on Kingwood Common are as follows:

Historic Features and Archaeology

- Boundary Banks
- Remains of World War 2 Camp
- Other Archaeology

Public Access

- Vehicular Routes - Roads and Access Tracks
- Public Rights of Way
- Other Paths or Tracks
- Open Access (Registered Common Land)

Wildlife Habitats

- Woodland and Trees
- Open Habitats – Grass and Heath
- Ponds
- Hard Standing and Other Bare Ground Habitats

Species

Various species typical of the following habitats:

- Acid Grassland / Heath Species
- Woodland Species
- Other (Desirable) Species
- Non-native / Invasive Problem Species

2.4 Overall Management Objective

To maintain and wherever possible improve the features of interest on Kingwood Common including its archaeological heritage, public access, wildlife and landscape.

No specific habitat or area objectives have been made. The objective to be achieved by implementing a series of management tasks, these tasks described in the text below and listed in a work plan (Table 2).

Table 1, below, lists the distribution of features including habitats, public access and archaeological heritage.

Table 1 - **Designated Habitats, Listed by Compartment**

Habitat	K1	K2	K3	K4	K5	K6	K7	K8
Non-Intervention Woodland	+	+	+	+	+	+	+	+
Open Woodland			+	+	+			+
Long Rotation Coppice		+	+		+	+	+	
Short Rotation Coppice		+			+	+		
Woodland Glades		+	+	+			+	
Notable Trees	+	+	+	+	+	+	+	
Grass / Heath	+		+	+	+	+		+
Ponds		+						
Hard Standing		+					+	
Grassy Verges	+		+	+			+	+
Woodland Verges	+	+	+	+	+	+	+	
Vehicle Access – Roads and Tracks	+	+	+	+	+	+	+	+
Public Access – Bridleway		+			+	+	+	
Public Access – Public Footpath			+					
Public Access – Tracks	+	+		+			+	
Public Access – Other Paths	+	+	+	+	+	+	+	+
Open Access Common Land	+	+	+	+	+	+	+	+
Archaeological Heritage	Manage as appropriate all features.							

2.5 Habitat Management Descriptions and Specifications

2.5.1 Non-Intervention Woodland

Non-intervention woodland is by definition woodland that is not actively managed but allowed to naturally develop a structure and species community of its own – i.e. it is not deliberately managed to create a particular habitat type, species mix or provide a particular product. Most woodland management, including traditional woodland management practices such as coppicing, is carried out with the purpose of creating a product – and not (primarily) for the benefit of wildlife. Some wildlife can directly benefit from this management – but some species with different requirements may not. Decisions about managing habitats for wildlife should be based on the needs of the species concerned rather than the simple and automatic adoption of one or more recognised management practices.

Woodland may be managed by non-intervention for many reasons. These may be a "positive" decision i.e. it is already a good habitat that needs no intervention The decision may also be "neutral" or "negative", for example a lack of financial or other resources or difficulties of access. Kingwood Common is of such a size that the management resources required to manage the existing varied habitat structure is already significant, and a programme to actively manage significant parts of the extensive areas of currently untouched woodland would be impossibly large, even if this was desirable. At present it would also be very difficult, if not impossible, to justify such management both for ecological and other reasons. The area of currently (not historically) undisturbed more or less "natural" woodland habitat provides an interesting and contrasting habitat to the existing and proposed more open managed habitats – and is good for both people and wildlife.

2.5.2 Open Woodland

This type of woodland is characterised by a more distant scattering of often larger trees with a minimal or non-existent shrub layer and an extensive and well developed field layer of species such as Bracken. Woodland structure often changes very slowly even where no active management is undertaken and even these open woodland habitats may require no management at all. However, for the purposes of this plan they have been designated as Limited Intervention i.e. not subject to proscribed or regular management but an area where management is carried out but if and only when it is required. The suggested management limit is for up to 20% of the area of habitat to have a well developed understorey, i.e. 80% or more of the habitat to have only higher canopy trees. There is insufficient information to define management limits for the field layer or ground layer species, though they are important components of the habitat.

The distribution and percentage cover of shrub layer needs to be reviewed on an annual basis and if exceeding the defined limit some trees removed. Trees cut down could either be coppiced and allowed to regenerate or felled and killed (stump treated, re-growth cut or weed wiped.)

A regular supply of new generation standard trees will be required to maintain the structure in the long term, and some smaller trees will need to be left to mature. Some trees could be managed by pollarding to create a greater diversity of woodland structure.

The main location of this habitat on site is the south central part of Kingwood North and the central area of Kingwood South.

2.5.3 Long Rotation Coppice

Regularly coppiced long rotation woodland has been included in this plan to provide a different woodland type with its complimentary benefits for wildlife and a source of fuel wood or other products for use by local people.

New coppice stools are created by cutting standard trees down at or close to ground level. With higher levels of grazing / browsing by deer and other animals it may be better to cut the trees a bit higher, leaving a larger surface area of stump to sprout and offer a greater chance for each tree to regenerate. If browsing is a significant problem then additional temporary protection from, or reduction in the intensity of browsing in the early stages of re-growth may be achieved by leaving all or large parts of the cut material on site, thrown over or felled directly onto the previously cut stumps. A similar effect can be achieved by building one or more dead hedges around all or part of each managed block or around individual stools. The latter options are more time consuming and not necessarily more effective, as once the hedge is breached by browsing deer all the stumps within the hedged area are vulnerable.

The timing of the first re-cut will depend on the species of tree, the rate of re-growth and possibly the type of product needed from the management work– assuming work is carried out not only for habitat management reasons but also to create a useful product. It is suggested the coppice cycle used on Kingwood is between 10 and 20 years. Re-growth that is left for longer than ten years will be larger and more suitable for larger stakes (Oak especially) or firewood (most but not all tree species). Earlier cutting may provide bean poles, thinner stakes (e.g. for hedging) or smaller firewood.

For individual stools, second or later cycle cutting of stems should ideally not go into the older wood, but the later cuts made above the previous cut level. The older wood in a coppice stool provides valuable wildlife habitat. Thus, over a number of cycles coppice stools tend to get taller and larger – and old stools can be very large providing a long lived and stable habitat for many organisms similar to old pollards.

Not all tree species coppice well. Of the main species present on Kingwood Oak and Birch will coppice without problem, but others such as Aspen or Rowan will not and are thus best not managed by this method. See the table in Appendix 1 for suggested suitable management techniques for the various species of tree on site.

Coppicing work should be undertaken in the autumn / winter (when tree sap is down). Suggested block sizes are from approximately 900 square metres (equivalent to 30 by 30 metre square) to 2500 square metres (50 by 50 square metres) – depending on the available resources and location on site. Alongside well used paths or tracks, blocks could be longer and narrower. Even during later repeat cycles of coppicing when large percentage of material may be removed for use, the temptation should be resisted to create a tidy site. All unwanted material can be left lying where cut and/or piled up as habitat piles if leaving them literally *in situ* impedes the actual work.

Coppice blocks can include a number of standards and/or pollards (see below) – but not so many as to over shade the re-growing stools. The suggested working limits are up to 10% by canopy area for standards and at least 90% of the area as coppice stools. In the designated block at the north end of the Common (Compartment K2 and K6), spurs of trees have been retained between some of the blocks creating good canopy links. In this area it may be necessary to compensate for the shade from these spurs by reducing the actual number of standards within the coppice blocks. Trees to leave as standards could include existing large landscape standards, small trees (potential future landscape or timber standards) and/or trees of ecological value (e.g. Honeysuckle covered trees or uncommon species such as Willows for their spring flowers). Dead or dying trees should whenever possible be left as standing timber.

Overall approximately 30 blocks of woodland have been indicated (see Map 2) – i.e. for a 20 year cycle to be achieved it will be necessary to cut either 1 or 2 blocks a year. Apart from this main area of coppice designated for Kingwood North, smaller areas have also been designated for around Red House Square (K7) and adjacent to the power lines in Kingwood West.

2.5.4 Short Rotation Coppice

Short rotation coppice is a way of maintaining a transitional, short open woodland habitat between true open habitats such as heath and grassland – and more closed longer rotation coppice and mature woodland habitats. By creating and maintaining areas of dense low part open and part woodland cover adjacent to open habitats – the open habitats themselves do not need to include significant areas (in terms of percentage cover)of scrub or bushes making the management of the open habitats more straightforward.

The suggested management method for short rotation coppice is as follows, individual trees and/or blocks of trees that have grown too tall and/or too large (in terms of the area they cover) are cut down to ground level (using manual and/or power tools). Whenever possible the cut material should be stacked on ongoing habitat piles located at regular intervals across the site, to minimise the distance material needs to be transported. Ideally the entire area designated as short rotation coppice would be managed every year by thinning – with any individual tree or small block of trees that have grown too large being cut down or topped out. If this is not possible then all areas of habitat should be thinned over a two or three year rotation. Most if not all work should be undertaken in the autumn / winter. Thinning provides an overall mixed structure, better than simply dividing the area into larger blocks and entirely clearing a number of these blocks per year such that over a short rotation (perhaps five years) all areas are cut. There are practical advantages to thinning as well. Because it only removes a small percentage of growth per unit area the work is much quicker to carry out and produces less cut material making it easy to accommodate all cut material by stacking. Much of the time in more traditional block cutting rotations is taken up with multiple handling of cut material including (by necessity) the disposal (often by burning) of significant amounts of brash.

Short rotation coppice areas are located in the north and central parts of Kingwood North and are transitional habitats between paths, open heathland / grassland habitats and more mature woodland habitats.

The condition of the habitat should be assessed in late summer, with any required management work being undertaken in the following autumn / winter.

2.5.5 Woodland Glades

Woodland glades are an important component of all woodland habitats, managed or otherwise. In this plan the woodland type where the number and location of existing and potential glades needs to be decided – and the subsequent programme of maintenance and/or creation is for the large area of non-intervention woodland.

Glades should complement the woodland and as such any work undertaken to maintain or create them should not damage any features of existing value e.g. large landscape trees, areas of good ground flora etc. The location of new glades could be at junctions of paths, along long sections of path through otherwise uniform habitats (where glade creation would add to the value of the habitat). Glade creation could be achieved by the removal of actual or potentially problematic non-native species e.g. Horsechesnut *Aesculus hippocastanum*. Where large trees need to be removed, consideration should be given to retaining some or all of the tree as standing deadwood (topping out and/or ring barking) where this would pose no risk to site users.

In woodland areas there is no need to remove or otherwise dispose of cut material. In most cases all cut material can be left on site as habitat piles and/or perhaps even better more or less as it falls, in the adjacent woodland habitat. Reference to the table in Appendix 1 would be useful, to check the suggested management is appropriate for the species of tree present.

No limits have been defined for the number, size or location of glades. The main factor as to how many can be created will probably be labour resources.

2.5.6 Trees

Scattered across the Common are a number of fine specimen / standard trees, which are both important landscape and/or ecological features of the site. One example being the only known specimen of Wild Service Tree on the Common, which grows in the north east corner of the site on the boundary bank between the Common and Burnt Platt (Plantation). As far as possible, some of the most notable trees have already been identified so they can be looked after and protected from damage during future management work. A provisional list of trees (compiled during the production of this plan) is included as Appendix 5 (Excel spreadsheet) – with the list known to be far from complete.

Further work to add to or complete this list of notable trees on site is needed, the minimum information required being its species, its location on site (including ideally a ten figure grid reference) and any other relevant information (e.g. notes on its structure, girth etc). This survey can be undertaken as a defined event or events – or by accumulating records over time as such trees are identified (perhaps during management work).

2.5.7 Pollards

New pollards can be started off by topping out small standard trees at a comfortable height at or just above head level. Larger trees where retained are in practical management terms more easily designated as standards but could be subject to canopy thinning in two or more phases of cutting to create pollards. After the initial pollarding, the timing of the first re-cut will depend on the species of tree and its location on site. Existing pollards created during previous management on site may benefit from management. If such work is undertaken it is recommended that not all branches are removed at one time but some retained. If needs be, those that are left can be cut back later when other buds have burst and produced new branches. Pollarding work involves cutting at higher levels and should only be undertaken when it is safe to do so. Of the two main tree species on Kingwood Common, Oak will pollard well but Birch less well and thus it is recommended that the latter is managed as either coppice or standards only.

Though pollards could be viewed by some as unnecessary artificial features – and also can be difficult to manage (safety reasons) they do provide a different structure and potentially will create much larger and longer lived trees than those left as standards – providing long term ecological continuity of habitats important for some associated species. Pollarding is a feature of habitats managed by grazing (New Forest, Burnham Beeches, wood pasture including other commons in the Chilterns) and should it be possible to graze Kingwood in the future they would particularly add to the landscape value of the common.

2.5.8 Heath and Acid Grassland

Open habitats such as heath or grassland by definition have only small amounts of trees and/or scrub – in this plan a suggested maximum 10% by area. The control of woody species is an integral part of the required management work. Without active management the open (acidic) habitats would in time through natural succession change to other habitats, in most areas ultimately becoming dominated by trees and woodland. In the absence of stock grazing the encroachment by trees into open areas requires the use of either mechanical and/or chemical methods.

Heather has probably always been relatively uncommon on Kingwood and acid grassland / grassy heath probably always a major component of its open acidic habitats. Thus it is not necessary to have heathers as the dominant species. There are two extant species on Kingwood, with Ling (Common Heather) being by far more common than Bell Heather. The current distribution and relative abundance of both species on Kingwood is in large part the direct result of active management policy to promote them over and above acid grassland.

The area of open habitats has increased dramatically from the period when conservation work first started in the 1980's and in recent years the areas have matured from rough grass to shorter better quality acid grassland with stands of heathers. As part of the writing of this plan the size of the open habitats has been reviewed and one of the management proposals is to further extend the open habitats in the central part of the common approximately by a further 60%. Part of the designated new central Common grass / heath habitat is an area previously cleared of larger trees in recent years (but subsequently not kept open) – with other designated areas still being covered by more mature secondary woodland.

Expansion of open grass / heath habitats is proposed for Kingwood South – into areas that in the recent were cleared but have not been managed and more recently have reverted to very young secondary woodland. The area of best open grass / heath habitat would be approximately doubled if all the clearing work was undertaken. However, the area of designated habitat on Kingwood South is smaller and overall it is a more intimate mosaic of habitats including areas of grass / heath set among a central area of open woodland (to be managed by limited intervention) and around this stands of mature woodland or scrub closer to the road to be managed by non-intervention. This complements the overall structure of Kingwood North which is a series of larger distinct open or mature woodland habitat blocks with defined belts of transitional habitats.

Improvements to, and an increase in the total area of, the existing small areas of overgrown / rough acid habitats in Kingwood West, located in part under the route of the power lines are also proposed. This project will require a lot of tree felling and needs to be undertaken in consultation, especially Southern Electric. All the new open habitats can be created over the ten year period of this plan, or beyond if needs be. The main priority for the first five years of the plan should be the central part of the Common, with during this period maintenance work being revived in Kingwood West and continued at the present level on Kingwood South.

The open habitats have been designated as areas where woody species, apart from a few large standard / landscape trees are sparse (10% or less by area) with individual woody plants being small – individual or stands being at most 2 metres high and no more than four square metres (the equivalent of two by two metres). Woody species are defined as trees of all species, bramble and Common Gorse.

Woody species need to be controlled by cutting and possibly treating cut stumps with herbicide to prevent their regrowth. Smaller trees including regrowth could be managed by pulling or chemically by wiping foliage with herbicide. If herbicides are not used then it will be more effective to cut in spring / summer (during the growing season) but only if ecological factors such as disturbance of nesting birds are not an issue.

Grassy areas will need to be cut, with this cutting primarily taking place in autumn or winter. However, over-wintering tussocky grass is an important habitat for invertebrates and other animals – so not all such habitat should be cut at any one time or in any particular area. If the grassland habitat is too course then spring / summer cutting would reduce its vigour but should only be carried out if there will be no or minimal impact on other species.

Traditionally heathers are also managed on a rotational basis (cutting or burning) – to ensure young stages of growth. The primary reason for this management, in upland habitats at least is to provide abundant food for game birds. There is no obvious need to follow such a strict regime on Kingwood Common and some of the heather plants at least should be allowed to grow to old age and become senescent and die.

In the open acid habitats Gorse should be treated as a woody species and in the main controlled in terms of its height and the area it covers. However, a few standard bushes could be allowed to grow, and managed by rotational cutting. The main area for Gorse to grow will be the wood edge habitats (described above).

Bare ground is an important component of open acidic habitats, which during further habitat restoration work will be created in abundance. As these habitats mature the amount of bare ground will reduce – and a programme of regular ground baring including both very small areas (single turfs) and larger areas (several square metres) would be ecologically worthwhile.

2.5.9 North – South Link Ride

The existing and proposed grassland and heath habitats are concentrated in three areas of Kingwood Common. The two largest areas are on Kingwood North and South – but isolated from each other at present by blocks of woodland. The small remaining (and proposed larger) area on Kingwood West is even more isolated from similar habitats.

One way to improve these areas without significantly increasing their actual size is to create open linking habitats such as rides, such that at least the more mobile species can move between blocks and/or colonise new areas. The narrow section of common land west of the property Cherry Croft provides a potential future open terrestrial link between the open habitats on Kingwood North and Kingwood South. Creating direct linking open habitats between the proposed grass and heath habitats of Kingwood West – and those of Kingwood North is also possible – but would entail a significant amount of work and change of emphasis from the management proposed in this plan. (One possible route could include Red House Square.) The Stoke Row road would provide a potential barrier for dispersal for some species. However there is no way to create a direct link between Kingwood South and Kingwood West as they are not adjacent to each other either side of the Stoke Row road.

In future universal internal linkage of these county scarce open acidic habitats on Kingwood will potentially be an important aim. However, for this plan a different and less ambitious approach is suggested, i.e. the creation of a ride in the north part of the Common which extends the largest area of open habitats on the Common towards the similar but more extensive off site heath habitats along the forestry rides on Burnt Platt Plantation. This Forestry Commission managed land has some of the most extensive and best (in terms of vegetation structure) extant heath habitat in the county. Linking the two largest areas of acid open habitats in the local area is in the short to medium term the best way to extend the range of some heath species without undertaking large scale tree felling. The other benefit of this ride will be the creation of an easy and attractive route for people. A strip of woodland will be retained to screen this ride (and *vice versa*) from the property of Great David's. To establish the best link possible with Burnt Platt the existing east-west path / bridleway through Compartment K2 will need to be widened (scalloped edges) and the existing glade expanded back to and perhaps beyond its historical size (which is currently much reduced).

The suggested total width of the ride is up to 30 metres, with its central (open habitat) section being 10 to 15 metres wide with the east and west margins(to be managed as short rotation coppice or longer rotation coppice) between 5 and 10 metres wide. To the west of the ride is a proposed series of woodland blocks managed by long rotation coppice. The w width of short rotation coppice coulkd be reduced to a minimum and width of open habitat maximised. To the east of the ride, closest to Great David's it is suggested that more standards are retained (if required) than in most coppice areas to create a screening shelter belt that is as tall and dense as possible.

Consultation will be required with the Forestry Commission to maximise the linkage of the open habitats on Kingwood with those on Burnt Platt, as currently the strip of land between the plantation and the common is heavily treed. Either the existing paths through this

wooded strip need to be widened, or new rides created to create the best terrestrial link with the broad open heathland ride further into the plantation. The current policy of the Forestry Commission with respect to the extent and location of the heathland habitats is not known, but they have a commitment not just to timber production and thus may be willing to develop a joint project to create an open link.

2.5.10 Ponds

As of March 20012, of the three existing ponds on site one is dry and two hold water. Later in the year after heavy rain Patricks Pond also part filled. As the ponds have not been looked at properly for sometime it is recommended that they are all subject of a thorough survey before any final management plans are drawn up. They were looked at briefly as part of the survey for this plan, and the following ideas are suggested as potential management options, pending the results of more detailed surveys.

The most easterly of the ponds the Temporary or Sump Pond is a small shallow pond that naturally dries out most years. It offers a contrasting habitat to the other ponds on site and there are no apparent ecological problems with it at present. If any work is identified as being needed, it is thought that it will not be major.

Barn Farm Pond, the most westerly of the three ponds was also found to have no major problems in the brief survey undertaken in early spring 2012. Any water quality problems that existed in the past (due to salt run off from the adjacent Salt Dump) appear to have gone and the water was clean. Issues that may need to be resolved are the frequency and nature of the management of its immediate surrounds (undertaken by the neighbouring property) and perhaps shade levels from surrounding trees.

The central of the three ponds, called by some Patricks Pond, is at the time of finalising this plan no longer dry. The preliminary survey in March 2012 suggests it may have been dry because it was built more or less proud of or at the same level of most of its surrounds in order to trap as much water as possible when the adjacent capped reservoir over flowed / was pumped out. It is thus set as such a level that it is unable to receive most of the (rain)water that falls onto the surrounding woodland. The rain is either intercepted by trees and if it does reach the ground it drains away. It may well be this lack of natural catchment that is the cause for it being dry rather than a hole in its clay lining as suggested previously. More investigation is required before any definitive plans can be made. Possible options include leaving it as is (Sedge swamp) or re-creating a more typical pond, by enhancing its catchment (by selectively lowering the height of its upper banks).

Also identified in March was the possibility of creating new ponds on a site in a wetter low lying area to the south west of Barn Farm pond close to the boundary of the common. The Common here takes the form a small scale low lying south west / north east valley between the higher ground on the common to the south east and non-common land to the north-west. Site surveys are required to establish the actual potential for pond creation before any decisions can be made. The legal status of the site as common land may also mean it is not possible to create new ponds.

2.5.11 Hard Standing

Even though it may take a very long time compared with natural bare ground habitats, eventually even concreted hard standing areas will colonise with plants. The two main areas on site are the open hard standing areas at the Salt Dump and the enclosed area at Red House Square (the part excluded from and not used for parking).

The management of the Salt Dump is potentially complicated as it includes the main open area still used for road salt and other material storage – the management of which is primarily orientated around (for the present at least) maintaining its use for such storage. It is the bunds / banks of surrounding spoil and the disused dumped part of the area which can be managed for the prime benefit of nature conservation. No management limits have been set as there is insufficient information to do so, but the following points can be made. The most interesting aspect of the spoil heaps and bunds is their bare disturbed nature and thus they should be maintained such that large parts have no woody cover such as bramble or shrubs or small trees. (These habitats are in abundance in the surrounding area.) The other feature of this area (covered in more detail under the Species Management section below) is the non-native invasive shrub Snowberry which dominates the disused part of the hard standing. Once this has been removed / is under control then this part of the Salt Dump can be re-assessed and, potentially, management limits set.

Red House Square however is simpler as it is a well defined area with no over-arching use. The following management and management limits are suggested for the hard standing area and its immediate surrounds. The surrounding trees to the north and east side of the square should be coppiced up to 10 metres form the edge of the concrete, to reduce the levels of direct and side shade over the square. The suggested management cycle for this coppice is 10 years, with one fifth of the margin being cut every second year. The trees spreading out from the spoil bank to the south into the concrete should be part cleared (by c. 50%) and subsequently managed by cutting on a short rotation of five years or less – by thinning the taller stems on an annual basis. The suggested height limit for the trees in this stand is 2 metres – anything at this height or taller should be thinned during the autumn / winter. The small number of trees on the southern bank are in need of immediate management, but their condition should be reviewed and if required an occasional rotational cutting regime devised. There is one non-native on this bank, an upright standard *Cotoneaster* which is not causing a problem and can be retained. The stand of invasive non-native Variegated Yellow Archangel in the north east corner of the area needs to be controlled and eradicated (see Species Management section below). The target habitat for the main part of the habitat, the open bare concrete is an area with few or no trees and a mix of low ground cover plants (including mosses) and bare areas. To restore it to this condition, for the first five years of the plan or until all the small trees have gone, clear five one square metre areas each year targeting areas where small trees or taller ground plants have become established. After the five years or sooner, review the regime and devise an appropriate ongoing management regime designed to keep the area open and encourage the growth of small annual plants and other early colonising organisms.

2.5.12 Grass and Woodland Verges

It is difficult if not impossible to define a simple uniform management policy for these mostly small and/or localised areas of outlying and/or species rich areas of habitat – which are often different from their surrounds. In many cases they are currently, or ideally should be managed in a different way to the surrounding area if their nature conservation interest is to be retained. Each area should be dealt with on an individual basis. Some areas have been identified during the surveys undertaken for the writing of this plan, but it would be useful to undertake further survey work to inform final and more detailed plans for all such sites – identified in this plan or not. Some sites are listed below (in no particular order) with comments on their current and potential management, where this is known or can be reasonably assumed. The management of all these verges needs to be reviewed, if only because in many cases it is done on an informal and unofficial basis and whether good management or not – the management of such areas should ideally be formalised.

Grass Verges with Scrub "Hedge" outside Jersey Farmhouse (Compartment K1)

- This fairly extensive verge is maintained as short grass by local resident(s) and includes a line of scrub managed like a hedge south of the house drive. The grassland areas do not appear to be particularly species rich but provide an alternative habitat to the surrounding woodland and rougher grass / heath habitats.

Grass Verges Houses South of Red House Square (Compartment K7)

- These verges are also maintained by local residents by mowing and in part at least have some botanical interest because of this management. The extent and regularity of cutting is one of the factors that needs to be agreed.

Woodland Banks, Colmore Lane, Around Junction of Bridleway (Compartments K5 and K6)

- The management of the section of bank next to the Lane is in part the responsibility of the Highway Authority and as such subject to outside control. However, there are a number of uncommon species that grow on these banks and/or in the nearby woodland strips e.g. Broad leaved and Violet Helleborines. Site management needs to take these into account and a policy of minimal management is ideal. This section of the Lane is overhung and shaded by trees and thus needs little or no cutting anyway.

Western Grassland Bank, Colmore Lane, North of Bridleway Junction (Compartment K6)

- There used to be a relatively species rich grassy bank just north of the bridleway on Colmore Lane. It was not looked at during the surveys for this plan but should be re-surveyed to assess its current value and any management requirements to maintain or improve its value. Shade from trees will always be a problem for the grassland species, but the cutting / removal of large numbers of trees may also not be desirable and the small area of grassland flora be of secondary priority.

Mown Verge, Corner of Stoke Row Road and Lime Avenue (Compartment K3)

- The primary reason for the regular cutting of this corner is to maintain good visibility for cars leaving Lime Avenue where it joins the Stoke Row Road. Regular mowing has produced a different grassland habitat. The Highways Authority will presumably

continue to mow the verge, and it may be worthwhile to see if their regime can be fine tuned to maximise the ecological value of the grassland.

Grass Triangles at Junction of Gypsy Lane and Stoke Row Road (Compartment K4) and Adjacent to Former Tally Ho Public House (Compartment K7)

- Both these areas of rough grassland are cut on a regular basis to maintain good visibility for cars joining the Stoke Row Road. There is no obvious overriding nature conservation reason to change this regime

Grass Areas West Margin of Kingwood South Including Bus Stop Area (Compartment K4)

- These access areas are kept short in part by mowing (Parish Council?) and part regular use. There is no need to change the current management regime.

"Firebreaks" Around Larger Properties Great David's and Woodlands (Compartment K6 and K5 Respectively)

- These wide open paths have been in existence for many years and are well used by local people for access. In the past when the common was an open site vulnerable to fires they may well have served a function as firebreaks, but they no longer do so. However, there is no reason to alter their management or use. In reality very little if any regular management is required as they are heavily trampled and shaded and overhung by overhanging trees and there is little in the way of plant growth on the tracks.

Other (Non Specified) Banks / Verges

- There are other banks or verges alongside road, track or property boundaries which are not listed above, some of which may benefit from their own individual assessment and a subsequent statement of the reason for their management and what management is required.

2.6 Species Management

2.6.1 Overall Summary

As part of the survey work to inform the writing of this plan several species were identified that may need their own targeted management. These species (only plants to date) include local native species, some like Bracken having been the target for past and/or ongoing management. Others however have not previously been identified as in need of management, and among these are several non-native species including successful and potentially rampant garden escapes. For some species a true problem has yet to be proved and these need survey / monitoring work to assess their status and issues with them.

The locations of non-native and other potentially problematic plants are shown on Map 3, with information about their status in Appendices 2, 3 and 6. The table in Appendix 2 summarises the status of and suggested management approaches for the main species of potential or actual concern.

2.6.2 Bracken *Pteridium aquilinum*

Bracken is a natural component of the flora and habitats on Kingwood Common and as such it does need to be eradicated but may need to be controlled in particular areas. In the past as part of the restoration of the open grass and heath habitats it has all but been eradicated from some areas, and when required it is still controlled.

The suggested management limits for Bracken in open acid habitats is a total percentage cover of 5% or less**,** generally distributed in small amounts and/or as low plants throughout the open habitats – but in places allowed to be locally common, even dominant over a small scale. The overall distribution and density of cover of Bracken in these areas needs to be monitored on an annual basis to ensure that any potential problems with it re-invading cleared areas are avoided. This assessment is probably best undertaken in late summer when it is in full growth – in time to undertake any controlling management in the following spring.

If control is required either physical or chemical methods can be used. Physical methods include pulling (in spring), rolling or cutting prior to plants producing spores. Chemical control may need to be undertaken by specialist contractor using approved chemical if local expertise is not available.

In other parts of the Common, for example in the Open Woodland habitats, there is no need to control Bracken as it is an accepted part of the habitat.

2.6.3 Greater Periwinkle *Vinca major* and Variegated Yellow Archangel *Lamiastrum galebdolon* var *argentaeum*

These two species of plant are the most prominent and successful of the garden escape ground plants that have become established on Kingwood Common. They occur both close to properties (direct garden escape) and away from properties at or close to parking places (where garden rubbish has been dumped on the common). Both are highly invasive and stands of several tens of square metres exist, where the species are out competing the native ground plants including in native plants typical of older woodlands e.g. Sanicle *Sanicula europaea* and native Bluebells *Hyacinthoides non-scripta*. Unless some control at least is undertaken, this spread and the associated loss of other species will continue. Eradication is required to ensure that the current situation does not arise again.

It may be possible, with persistence to remove the plants simply by hand pulling them on a regular basis. The advantage of this method, over cutting for example, is that it will be much easier (with care) to avoid damaging other plants in the process. Shading out may work, but will also affect other species and therefore is probably unacceptable if done on a large scale (it will also be unsightly and vulnerable to vandalism). Experimentation may be needed to work out the best method of control - or combination of methods.

2.6.4 Japanese Knotweed *Reynoutria japponica*

Japanese Knotweed is a highly invasive non-native species of plant which prefers damp places. On Kingwood it is found in one location at the north end of the power lines in Kingwood West (Compartment 8), where it has long been established. Its spread has in part been slowed / stopped by being hemmed in by woodland, but it is not wise to assume that this will stop it forever. Some control has been attempted in the past but it is not known how much recent work has been done (if any) and what methods have been used.

Control is required with the aim of eradication by use of chemicals (weed wiping or spot spraying) and cutting. Chemical control will be an important component of work – it is suggested this work is carried out by a specialist contractor. Aim to kill all plants within the first three to five years of the plan in the one and only known colony – with no further colonies to be allowed to establish.

2.6.5 Snowberry *Symphoriocarpus rivularis*

Snowberry is another frequently encountered garden escape that on Kingwood Common is well established in one known location, the disused eastern end of the hard standing at the Salt Dump. Here it forms a continuous stand of suckering plants covering several tens of square metres. Although it may provide good dense cover for animals such as nesting birds overall it is recommended that it is controlled and ideally eradicated. The bare habitats here are useful and interesting and are being lost – so some control is a minimum requirement.

Control methods may include cutting and/or digging out. The controlled use of chemicals may also be required, but this needs to be investigated. Major work should be limited to work outside the bird nesting season. The arisings may need to be disposed of by burning as there will be a lot of material generated if large scale work is undertaken.

2.6.6 Russian Vine

This climbing close relative of Japanese Knotweed is found in one location, where it covers a significant area including climbing the boundary hedge between the common and neighbouring property. It is probably an escapee (past or present) from one of the adjacent residential properties. Though it seems to be contained in one area, like the preceding species it would be best to control it with the aim of eradicating it altogether. Chemical control may be the best method, but further advice is required before any final plans can be made. Aim to eradicate the species within the first five years of the plan.

2.6.7 Buddleia *Buddleia* sp.

Buddleia is a non-native plant which because of its abundant nectar is attractive to insects including butterflies and moths, hence its alternative name Butterfly Bush. On Kingwood Common it is established in at least one location, the same location as Russian Vine above – and though apparently not spreading it is capable of doing so and becoming a problem weed species. As Buddleias are a common feature of many gardens, including those around the periphery of Kingwood Common it is suggested that on the Common itself is controlled and ideally eradicated.

Control / eradication methods will include cutting (repeated as often as necessary), digging up and perhaps the treatment of cut stumps with chemicals to prevent their regeneration.

2.6.8 Wilsons Honeysuckle *Lonicera nitida*

This evergreen hedging species is another garden escape that is present in at least two compartments on or near the boundaries of residential properties. It spreads vegetatively and currently is probably limited by the high levels of shade where it is found. As with Snowberry it is more than capable of forming dense impenetrable stands and before it has a chance to do it is recommended it is controlled and ideally eradicated.

Repeated cutting and/or uprooting will be required to eradicate it so a combination of these physical methods and perhaps chemical control as well if appropriate or required.

2.6.9 Spiraea

This shrub grows in one location on the east side of Kingwood South, and is believed originally to have been deliberately planted to create a screen between the open common

and one of the neighbouring properties. In the past it was removed (by digging out) and all but eradicated but appears to have become re-established. Although it is not likely to spread quickly and become a dominant species it is recommended it is controlled and ideally eradicated.

2.7 Public Access

Site management for public access is mainly concentrated on keeping open the main highways, tracks and paths. Public roads will be the responsibility of local authorities and beyond the scope of this plan.

The internal paths and tracks however are an important component of the management of the Common. There is a legal duty to maintain the public rights of way (bridleway and/or public footpaths) to an agreed condition (height / width of paths). For other paths however, of which there are many on Kingwood, there is no legal requirement to keep them open but for the main paths at least this work should still be a priority. For very minor paths it could be argued that a formal maintenance regime is not required as they are to some extent kept open by the users themselves and are often temporary in nature with regular changes of route and some sections at least wandering or becoming disused on a regular basis.

However, a formal policy in the plan of which paths are to be formally maintained (main paths) and which if they are maintained are only done so on a less regular basis or as resources allows would be very useful. For such a target list to be defined,paths would need to be mapped. This process being begun for the production of this plan (see Map 5). However, no attempt has been made as yet to apply the categories of “main” or “secondary” to individual routes as yet – and there are significant gaps in the network yet to be mapped.

Being registered open common land there is a right to roam on Kingwood Common at will. Though there could be some site safety implications for the management of the site because of this, any possible risks should not be exaggerated or over emphasised and unduly affect the overall management ethos for the Common.

2.8 Species and Habitat - Surveying and Monitoring

2.8.1 Overview

The success or otherwise of any site management can be measured by informally observing, or where required formally recording changes in the area, structure and species composition of the habitats being managed. (A similar process can be followed for other site features such as the archaeological heritage, the measure being its continuing presence and assessment of its condition.)

Appendix 4 includes a (provisional) list of plant species that are useful as positive indicators of the health of the open habitats (acid grassland, heath and bare ground) and woodland habitats. The more widespread and abundant these species are the better the habitats are. Increases in the abundance and distribution of the species over time provide a measure of the improvement of the habitats.

It should be noted that one of these species, Common Gorse, though it is a good indicator of acid habitats because it is a larger woody species it can become dominant at the expense of other species and in abundance reduce the quality of the more open shorter habitats. Its presence is thus a good indicator in such habitats as long as it does not exceed any defined limits (see above). Common Gorse is a good indicator would however be a good indicator of the proposed short rotation coppice (wood edge) habitats and other more open habitats such as woodland glades or open woodland habitats in general.

The open habitat plants if conditions are right could colonise, establish and spread relatively quickly as existing habitats improve and new habitats created. The woodland plants however are generally slower to spread into new habitats.

For these and any other surveys the timing and methodology of the surveys is important. A lot of information already exists (TVERC, BBOWT etc) but much of it is potentially out of date and is in need of updating.

2.8.2 Baseline Plant Surveys and Subsequent Monitoring

Before it is possible to gauge any changes in the distribution and/or abundance of one or more of the plants it is necessary to have sufficient information on their current status. There is some existing information but a more comprehensive survey is required to establish more accurate distributions of each of the species. Changes in these distributions as compared to these baseline surveys can then be used to gauge the effectiveness of the site management.

2.8.3 Baseline Habitat Surveys and Subsequent Monitoring

Habitats are in large part defined by the type of plants / species that grow. The baseline plant survey will thus largely inform this habitat survey which could be extended to include the whole of the common to create a definitive habitat map. This survey could include a classification of the types of woodland present (e.g. Beech, Aspen, Birch / Oak) including those designated as non-intervention management which otherwise will receive little or no attention as they are not actively managed. Subsequent re-surveys will identify any changes in these habitats, for example natural changes in the woodlands as the trees mature and relative abundance of particular species may change. Such work will identify any issues or problems, to inform a review of and changes to the defined management if required.

2.8.4 Other Surveys

The work plan includes four additional specific surveys for three better known species groups namely reptiles and amphibians, birds, Lepidoptera (butterflies and moths) and in addition to these a (repeat) survey of invertebrates associated with the open acidic habitats. The first three surveys may be possible to do without the need to employ specialist surveyors – whereas the latter will require specialist help. This grassland / heathland invertebrate survey is included to gauge any changes in the value of the open habitats for species other than plants – to see if with the extension of the areas and maturation of the habitat specialist open acid habitat species have colonised Kingwood Common.

The completion of a survey of the large and/or notable trees on the common is also included – both to aid future management decisions and because they are valuable in their own right.

2.9 APPENDICES

The following appendices are included in this plan, in the form of tables with supporting notes as required or detailed Excel Spreadsheets:

Appendix 1 – Suggested Tree Management Methods
(Word Table)

Appendix 2 - Potentially Problematic Non-Native or Non-Local Native Species
(Word Table)

Appendix 3 - Potentially Problematic Local Native Species
(Word Table)

Appendix 4 – Potential Indicators of Good Ecological Condition
(Word Table)

Appendix 5 – Location of Notable and Important Landscape Trees, March 2012
(Excel Spreadsheet)

Appendix 6 – Detailed Locations of Potentially Problematic Species, March 2012
(Excel Spreadsheet)

Appendix 7 – All Species Records, March 2012
(Excel Spreadsheet)

Appendix 1 – Suggested Tree Management Methods

This table is intended to act as a guide for the appropriate management of the various tree species that grow on Kingwood Common.

Key: **Stnd = Standard Poll = Pollard LRC = Long Rotation Coppice SRC = Short Rotation Coppice ++ = Good method + = Less good methodx = Possible but avoid xx = Do not use**

Common Name	*Scientific Name*	Stnd	Poll	LRC	SRC	Notes
Oak	*Quercus robur*	++	++	++	+	
Birch	*Betula pendula*	++	xx	+	++	
Hazel	*Corylus avellana*	++	+	++	+	
Rowan	*Sorbus aucuparia*	++	xx	x	xx	
Aspen	*Populus tremula*	++	xx	xx	xx	Also grows by suckering
Apple	*Malus domestica*	++	+	xx	xx	
Goat Willow	*Salix caprea*	++	++	++	+	
Gorse	*Ulex europaeus*	++	+	++	+	
Dwarf Gorse	*Ulex minor*	++		++		Low growing shrub
Hawthorn	*Crataegus monogyna*	++	+	++	++	
Blackthorn	*Prunus spinosa*	++	x	++	++	Also grows by suckering
Beech	*Fagus sylvatica*	++	++	++	+	
Sycamore	*Acer pseudoplatanus*	++	+	++	++	
Field Maple	*Acer campestre*	++	+	++	+	
Holly	*Ilex aquifolium*	++	+	+	x	
Ash	*Fraxinus excelsior*	++	++	++	+	
Whitebeam	*Sorbus aria*	++	+	++	+	
Broom	*Cystisus scoparius*	++	+	++	+	
Cherry Laurel	*Prunus laurocerasus*					Non-native, remove if found
Amelanchier	*Amelanchier*	++	x	xx	xx	Uncommon, naturalised shrub.
Garden Shrub	*Spiraea sp.*					Dig up if found

Appendix 2 – Potentially Problematic Non-Native or Non-Local Native Species

There are a number of non-native plant species that are present on or have been recorded on Kingwood Common. Some of these appear not to be problematic, while others can or could cause problems, e.g. out competing or hybridising with native species. The table below lists some but not necessarily all such species with a suggested management approach for each species. Detailed information on the locations of non-native plants can be found in Appendix 6.

Common Name	***Scientific Name***	**Suggested Management**
Amelanchier	*Amelanchier*	Apparently does not spread - no management required at present but monitor.
Garden Shrub	*Spiraea sp.*	Formerly present on eastern edge of southern area. Dig up if found.
Cherry Laurel	*Prunus laurocerasus*	Seedlings where spread by birds or animals. All plants to be removed (pulled or dug up).
Greater Periwinkle	*Vinca major*	Do not allow to spread beyond current area. Aim to remove altogether from all existing sites.
Variegated Yellow Archangel	*Lamiastrum galeobdolon var argenteum*	No new colonies. Aim to remove altogether from all locations.
Cyclamen	*Cyclamen hederifolia*	No management required if still present, but monitor.
Slender Rush	*Juncus tenuis*	Small plant growing in bare places. Apparently not causing a problem but monitor and implement appropriate management if required.
Japanese Knotweed	*Reynoutria japonica*	Very invasive plant. Control and eradicate in first few years of plan by cutting and spraying.
Leopardsbane	*Doronicum sp.*	Apparently not causing a problem. No management required at present, but monitor.
Alexanders	*Smyrmium olusatrum*	No apparent spread. Monitor but no management required at present.
Cultivated Daffodill	*Narcissus sp.*	Common and widespread. No more planting to be undertaken and spread of existing plants to be discouraged.
Spanish Bluebell	*Hyacinthoides hispanica*	Not known to be present on site, but if found remove to avoid hybridisation with native Bluebells.
Wilson's Honeysuckle	*Lonicera nitida*	Potentially very invasive, control and ideally eradicate.
Russian Vine	*Fallopia baldschuanica*	Potentially invasive, control and ideally eradicate.

Snowberry	*Symphoriocarpos rivularis*	Very invasive, control and ideally eradicate.
Himalayan Balsam	*Impatiens glandulifera*	Potentially very invasive, widespread plant in its one location.
Buddleia	*Buddleia davidii*	Apparently rare, though good for nectaring invertebrates ideally eradicate from site.
Horsechestnut	*Aesculus hippocastanum*	Apparently rare and seedlings not common. Monitor.
Non-native Pond Plants, Patricks Pond		No current information. If one or more species still present management strategy to eliminate species to be devised as part of overall plans to restore this pond.

NOTE: Other non-natives known to be present, but location and/or identification of species and status yet to be confirmed – for example Stinking Iris *Iris foetidissima*, Garlic *Allium* sp.

Appendix 3 – Potentially Problematic Local Native Species

A small number of potentially invasive native species occur on site, the extent of which should be monitored to ensure they do not become a problem - i.e. the existing colonies expand and/or new colonies become established and pose a significant risk to other designated species or habitats. These species may (e.g. Bracken) or may not (e.g. Pendulous Sedge) be indigenous to Kingwood Common.

Common Name	***Scientific Name***	**Suggested Management**
Bracken	*Pteridium aquilinum*	Subject of major control measures in the past - currently subject to regular ongoing control in open habitats.
Pendulous Sedge	*Carex pendula*	Introduced into Patricks Pond and spreading into the surrounding area. Its spread to be monitored and control undertaken if required.

Appendix 4 – Potential Indicators of Good Ecological Condition

Common Name	Scientific Name	Location on Site	Notes
Open Habitat Plants			
Common Gorse	*Ulex europaeus*	Widespread	Common
Dwarf Gorse	*Ulex minor*	Road verge K3 only?	Rare
Heather or Ling	*Calluna vulgaris*	Widespread but localised	Mostly open areas but some elsewhere
Bell Heather	*Erica cinerea*	Open areas	Less common of two "heathers"
Pill Sedge	*Carex pilulifera*	Widespread	Probably not uncommon
Heath Woodrush	*Luzula sylvatica*	Open areas	Probably not uncommon
Heath Rush	*Juncus squarossus*	K5 only	Rare, still present?
Elegant St Johns Wort	*Hypericum pulchrum*	Widespread	Not uncommon
Creeping St Johns Wort	*Hypericum humifusum*	Distribution to be confirmed	Bare and disturbed ground
Heath Milkwort	*Polygala serpyllifolia*	Best area K5 etc?	Confined to open habitats
Heath Grass	*Sieglina decumbens*	Distribution to be confirmed	Confined to open habitats?
Heath Bedstraw	*Galium saxatile*	Distribution to be confirmed – K2, K4, K5 etc	Mostly open areas but some elsewhere
Sheep Sorrel	*Rumex acetosella*	Distribution to be confirmed	Mostly open areas but some elsewhere
Tormentil	*Potentilla erecta*	Distribution to be confirmed	Mostly open areas but some elsewhere
Harebell	*Campanula rotundifolia*	Distribution to be confirmed	Confined to open habitats
Lousewort	*Pedicularis sylvatica*	Formerly K7	EXTINCT (1970's)
Autumn Ladies Tresses	*Spiranthes spiralis*	Present nearby site - also local area in past.	Doing well on local site.
Cross Leaved Heath	*Erica tetralix*	Probably K5	EXTINCT
Common Spotted Orchid	*Dactlyorhiza fuchsii*	Formerly K2	Current status needs to be confirmed

Common Name	Scientific Name	Location on Site	Notes
Woodland Plants			
Solomon Seal	*Polygonatum multiflorum*	K5 / K6	Rare. Origin of plants to be confirmed
Violet Helleborine	*Epipactis purpurata*	K5 and K6	Banks of Colmore Lane
Broad Leaved Helleborine	*Epipactis helleborine*	K2 and K5	Wood edges / banks
Sweet Woodruff	*Galium odoratum*	K2	Rare
Wood Speedwell	*Veronica montana*	K5, K6	Scattered, but widespread
Wild Service Tree	*Sorbus torminalis*	K2 – One tree only	Rare plant
Pignut	*Conopodium majus*	K2	Boundary bank
Primrose	*Primula vulgaris*	K2	Probably other areas
Sanicle	*Sanicula europaea*	K5	Rare
Wood Sorrel	*Oxalis acetosella*	K2	Rare
Spurge Laurel	*Daphne laureola*	K2	Rare
Early Dog Violet	*Viola reichenbechiana*	K2	Rare
Other "Ancient Woodland" Indicators		Information to be compiled	
Other Plants			
Dwarf Spurge	*Euphorbia exigua*	Salt Dump	
Common Storksbill	*Erodium cicutarum*	Red House Square	

All the species in the table above, whether common, uncommon, rare or currently absent on Kingwood Common, are individually potentially useful indicators of the good ecological condition of the habitats on site - and collectively as a group of species the overall ecological condition of the site as a whole. The list of plants above should not be taken as definitive and other species should be added as historic records are found or new records made.

It would be best not to rely only on plants for an assessment of the ecological condition of the Common, but also include other species groups. The South Oxfordshire Chilterns are a very rich and important area for many species groups in Oxfordshire. For example, the Chilterns still support populations of all nine species of native local reptiles and amphibians. One of these, the Adder *Vipera berus* is now close to extinction in the county and the

Chilterns may hold the last few animals. This species was present both on and very close to Kingwood Common in the late 1980's though there have been no recent records. The habitats on site are now much more suitable for it again. A list of this and similar species that could act as good indicator species and have been recorded on Kingwood Common in the past should be compiled, using records held by TVERC, BBOWT and/or from other sources.