

ANGLING SPRING WOOD

RESULTS OF 2004 SURVEY & DRAFT MANAGEMENT PLAN

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Flora survey

The wood was divided into 17 compartments (see map, appendix A), of which the central ride was one (Q), eight were areas clear-felled at different dates from 1984 to 1997 (A-H), and the rest were sections of surviving older trees (I-P). This enabled the flora to be distinguished according to recent management and location in the wood.

The full list of recorded species is at Appendix B. This table distinguishes the more important old woodland indicators (in bold) and the alien or invasive species (in italics). Analysis of species counts by compartment left out those in italics, so that scores would relate to the diversity of native woodland species only. Otherwise, damaged areas from the point of view of conservation would appear to have high biodiversity scores because of all the weeds and garden escapes they encourage.

The table also identifies the species that were found in two earlier, more superficial, surveys. The first of these in 1986 was carried out by the Wildlife Trust (BBOWT), the second in 2003 by the County Wildlife Sites Officer. These earlier surveys did not record location within the wood and, being confined to single visits early in the year and limited in time spent searching, are less complete than our own surveys in 2004, which were carried out over several months (by myself and Val Marshall). For this reason, the rarer and more important species had not been recorded before 2004, most notably **wood small-reed**, **wood barley** and **slender StJohn's-wort** (all ancient woodland indicators). The wood barley had also been recorded during a brief survey I conducted in the wood on 25 July 1987.

At the same time, the 2004 survey did not pick up a few species included in earlier surveys. These were birdsfoot-trefoil (which may have been an error for greater birdsfoot-trefoil, which we did record in 2004), bugle, horse-chestnut (!), pignut, rhododendron (possibly an error for cherry-laurel), downy rose and barren strawberry. Some of these may have been missed in 2004, or they may have disappeared - most probably a mixture of both reasons, as well as misidentifications. The only significant losses among these species (if they are so) are the **pignut**, an indicator of old established woodlands and grasslands, **bugle** and **downy rose** *Rosa tomentosa*, the last two only recorded in my previous survey in 1987. Given that other indicator species like the three in the previous paragraph survive in only very small colonies, the possible loss of these plants should alert us to the danger of losing most of the rarer indicator species in a very short time if conservation-oriented management is not instituted.

On the basis of the 2003 survey the County Council have recommended that the woodland be regarded as a County Wildlife Site on the basis of the number of ancient woodland indicators found. Given that our own survey has found another three even more significant plants, it would provide even stronger support for the woodland receiving such status and the consequent protection.

Altogether 199 plants have been recorded for the wood, of which five were not confirmed in 2004. Of these, 35 are old woodland indicators (one not confirmed), and 54 invasive plants of disturbed ground, or exotics (mostly garden escapes). The first

two of these figures confirm the value of the woodland as a wildlife site, but the number of invasive species is high and needs controlling.

On average, each compartment held 58 different species, of which 47 were non-invasive. This shows that the wood is far from uniform and many species are quite restricted in their distribution. The average number of indicator species was 15. Certain species were, however, found in every compartment: beech, bramble, holly, hornbeam, and wood millet. Two of these (holly and wood millet) are indicator species. Other species occurring in all but one or two compartments are: ash, bluebell, false brome, wild cherry, herb bennet, and stinging nettle. Of these, two are indicator species (bluebell and cherry), but two are invasive (ash, stinging nettle).

In terms of the National Vegetation Classification these dominants would indicate a mixture of W14 (**Beech-bramble woodlands**, in which hornbeam is normally rare) and W12a (**Beech-dog's mercury woodlands**, dog's mercury sub-community). The south-western half of the wood tends towards the former of these. It has fewer ground species and shrubs. The north-eastern half tends towards the second. Dog's mercury occurs mainly in the uncleared sections of the NE half, and this area is also associated with a higher number of ground plants, including the largest patches of bluebell. As the whole wood had been managed as beech woodland in the past, these differences can be expected to relate to the soils and underlying geology. W12a woodlands are usually on drier, more calcareous soils, while W14 woods are more typical of the less well-drained brown earths derived from clay-with-flints overlying the chalk.

The British Geological Survey map shows ASW overlying upper chalk, but the precise boundaries of the geological strata are unreliable, being based on interpolation from a relatively small number of boreholes. The presence of sarsen boulders, which can only be derived from the clays, in the northern half of the wood indicate that this side at least overlies clay-with-flints, at least at the top of the slope (west end). The **spring** is a very special feature of the wood (unusual enough for the wood to be named after it) and appears to arise within the chalk, perhaps where the less permeable chalk-rock, that narrowly separates the upper and middle chalk strata, reaches the surface.

Compartments vary greatly in their total numbers of plant species. By far the highest, with 91 non-invasive species, is the **central ride** (Q), which is a very special environment within the wood, with more light, a mixture of habitats from grass, through scrub, to trees and, at its lower end, the spring providing a marshy area. It is also above average in the number of ancient woodland indicators (21), although a few other compartments have an equal or higher score in this respect. It is the site of one of the uncommon species (wood small-reed).

Four other compartments had well above-average totals. Two of these were areas that had not recently been cleared of trees, L(59) and P(61). Both of these also had particularly high scores for invasive species, however. In the case of L this is because of the clearance of some trees in 2004 and introduction of a large patch of hard-standing, which has encouraged "weed" species. In the case of P, the section close to housing has garden escapes interfering with the natural vegetation. Even leaving these aside, these two compartments still have higher biodiversity scores, and it is unfortunate that these in particular have received more damage than other uncleared sections of the wood.

The other two compartments with above average biodiversity scores (and also low scores for invasive species) are F(55) and G(56), two of the more recently cleared ones (1993 and 1995). Here the growth of newly planted trees has not proceeded far enough to shade out too many of the naturally-occurring ground plants, except in that part of F where larch has been planted (G was not planted to larch at all). The opening

up of the wood to light by the clearance has benefited these plants, but this gain will soon be lost if the light levels are not maintained, and if the bramble scrub, equally encouraged by the light, is not reduced.

At the other end of the scale, the lowest number of plant species occurred in compartment B(a woeful 12). This area was cleared in 1986 and planted mostly with larch. Most of the native trees planted among the larch are faring badly in the shade of the quicker-growing conifers and the ground-cover is noticeable by its almost complete absence. The first of the compartments to be cleared (A) also has a rather low score (35), and even that is rather flattering because many of the recorded species exist there only in small quantity. The shade of the larch closely planted throughout this compartment is clearly contributing to the problem.

The three other below-average compartments, however, have not suffered recent clearance. These are I(24), J(39) and M(36). They are all in the SW half of the wood, which seems to be less calcareous. They are all relatively undisturbed and presumably reflect the low natural diversity of the flora under mature beech on clay soils.

In terms of **ancient woodland indicators**, however, the figures tell a slightly different story. Apart from the ride, there are three above-average compartments. None of these have suffered recent clearance. They include L and P (both 20), described above as having above average biodiversity generally. The other compartment is K(22), which scores even higher than the central ride. Together they comprise that part of the NE quadrant that has not been cleared.

The lowest compartments in terms of indicator species include four that had been clear-felled: B(5), F(11), G(11), and H(12); and two of the compartments that still had old trees but have already been described as having low biodiversity: I(8) and M(8).

These figures do not show a simple picture. It is clarified to some extent if one returns to the two types of woodland (W14 and W12a) referred to earlier. The chief difference between the two is in the presence or absence of dog's mercury (indicative of W12a). Nine compartments had dog's mercury(W12a), and eight did not(W14). The four compartments that scored better in relation to both overall biodiversity and indicator species all contained dog's mercury (even though this plant was not treated as an indicator). The following tables show how the occurrence of dog's mercury is associated with biodiversity and indicator species.

Presence of Dog's mercury and Number of Plant Species

No. of plants:	Above average	Average	Below average
Dog's mercury	4*	3*	2*
No dog's mercury	1*	4***	3*

Presence of Dog's mercury and Indicator Species

Indicators:	Above average	Average	Below average
Dog's mercury	4	4**	1*
No dog's mercury	0	3**	5***

Presence of Dog's Mercury and Combined Score

Biodiversity+Indicators:	Above average	Average	Below average
Dog's mercury	4	3**	2*
No dog's mercury	0	4***	4**

Asterisks in the above tables mark the number of clear-felled areas in each category. If one omits these (ie only takes the "semi-natural" areas) the relationship between the presence of dog's mercury and both biodiversity and indicator species becomes even more marked. In other words, recent past management (1984-97) has obscured the difference between the two natural vegetation types, one of which (associated with dog's mercury) is much more diverse floristically and has more ancient woodland indicators. Recent clear-felling has tended to have a deleterious effect on the dog's mercury woodland, while having little effect on the W14 type (sometimes even increasing biodiversity, although only because of the planting of native trees not naturally common in this woodland type).

Species other than plants

It is not possible to survey woodland fauna as systematically as the flora. Because insects, birds, etc are mobile, they cannot be mapped in terms of small compartments very successfully. Moreover, in a limited number of visits one only comes across a very small proportion of the creatures inhabiting the wood or any part of it, especially as some only appear during in a small part of the year. Fungi are very unpredictable in their appearance from one year to the next and within any one year. Without intensive studies over many years, one can therefore only use observations of fauna and fungi to get a general picture of the value and character of the wood.

The following analysis is very provisional, being based on only a minority of the species encountered, of which many of the insects still await time for identification. Mosses and lichens have not as yet been studied. The full list of species recorded and identified so far is at Appendix C. The less common or more significant species are highlighted in bold.

Nationally rare species

The most important find to date is that of the small bright yellow **Slender Slug**, with its blue-grey head and tentacles, a nationally designated "Species of Conservation Concern". While it was recorded from this region some 40 years ago, it has not been seen for 20 years and is thought to have suffered a significant decline. It is dependent on undisturbed ancient woodland, where it feeds on toadstools, especially *Russula* species (it was in fact found on *R. nigricans*). The main threat to its survival is said to be the clearance of ancient woodland (Kerney 1999). Because of the lack of recent records it is the subject of a special project by the Conchological Society (which has been informed of this record). It should be noted that it was found in Compartment K, the one with the highest score on ancient woodland indicator plant species, where lack of clearance has allowed a good range of fungi to survive.

Two beetles of similar national status were also observed, both "Notable B". The Black-headed Cardinal Beetle, like the Slender Slug, depends on the survival of intact ancient woodland. Its larvae live in the dead wood of standing mature trees. The main threat to its survival is said to be clear-felling and the growing of conifers (Hyman & Parsons 1992). The same authors' recommendations for its conservation are:

"Ancient trees and both fallen and standing dead timber, especially with the bark attached, should be retained. The removal of dead timber from ancient trees should be avoided. Gaps in the age structure of the tree population should be identified and the continuity of the appropriate dead wood habitat ensured by suitable planting and possibly with pollarding."

The other rare beetle discovered, also Notable B, was more surprising, as the Adonis Ladybird is generally a coastal species rather than an inland one, and associated with open dry areas. It feeds on a wide variety of plants. It was found in the ride area (Compartment Q), which is more open than the majority of the woodland. The preservation of herb-rich grassy areas within the shelter of the wood is probably crucial to its survival.

Four particularly rare fungi were discovered on a single foray in September, and must be just the tip of the iceberg. Three of these are boletes (toadstools with pores under the cap rather than gills like the mushroom): inkstain bolete (whose flesh stains a lurid blue when cut), sepia bolete, and the striking "Old Man of the Woods", which has black shaggy scales. All of these were found in uncleared areas of natural woodland (as were virtually all the fungi observed on this foray), where they survive because the soil is undisturbed and the trees with which they are interdependent remain standing. The first two are associated mainly with oak trees, which are not numerous in the wood, although scattered almost throughout (14 out of 17 compartments). The third bolete, and the other rare species, *Lyophyllum loricatum*, are associated with ancient woodland generally, rather than particular trees.

Other selected uncommon species

The more notable observations have been highlighted in bold in Appendix C. I only discuss here a few of special significance.

Many of these species are associated with ancient woodland and depend on the survival of mature trees, particularly those with dead wood and rot-holes. In this category come several birds that are not uncommon in the area, but do require mature woodland - Tree-creeper, Greater Spotted Woodpecker and Green Woodpecker - and also the Badger, of which two setts have been noticed in the wood. In this category also falls the Red-headed Cardinal Beetle (with similar requirements to its Black-headed relative) and a number of hoverflies: *Brachypalpoidea lentus*, *Myathropa florea*, *Sphagina clunipes*, and *Xylota segnis*. The black-and-yellow *Myathropa* and the black-and-tan *Xylota* are not infrequent in woods in this area. The larvae of the first live in rot-holes in mature trees. The other two are only rarely seen. *Brachypalpoidea* (a striking bright red fly) lays its eggs in the hollows at the base of old beech trees, its larvae living in the decaying heartwood. *Sphagina* inhabits the more marshy areas of ancient woodland.

The group most generally dependent on the survival of natural woodland is the fungi. Apart from the two mentioned above, three more uncommon species are associated with old oaks - Sepia Brittle-gill, the sulphur yellow Chicken of the Woods (also on wild cherry), and Deathcap (one of our most poisonous species). Frosty Fibrecap, *Hypoxylon nummularium*, and Pale Milkcap are all associated with old beech trees. The Snakeskin Grisette particularly favours hornbeam. Other uncommon species grow on dead wood of various species - Upright Coral and Blackfoot Polypore, for example.

The marshy area associated with the spring provides a distinct micro-habitat important for a special group of insects, many of which have not yet been identified. They do, however, include the *Sphagina* hoverfly above, and three beetles, the Green Tortoise-beetle, a leaf-beetle *Altica palustris*, and the Figwort Weevil *Cionus tuberculosus*. Other *Cionus* beetles are usually found on figworts in this area, but the spring area of Angling Spring Wood is the only place where this particular species has been found.

Finally, there are species that need the shelter of woodland but also plenty of light - ie rides and glades. These include two similar yellow-and-black hoverflies *Chrysotoxum bicinctum* and *C. cautum*, and the three most uncommon plants, Wood Small-reed, Wood Barley and Slender StJohn's-wort (two of which have been found by or near the central ride, and the third in glades on the northern side of the wood).

Archaeological features

During the summer of 2004 we have begun mapping historical features in the wood. More work needs to be done on this over the winter (when many features are clearer), but the map at Appendix A shows the current state of knowledge.

These features include boundary indicators (ditches, banks, laid hedges), excavations (quarries), lynchets, and old trees formerly pollarded or coppiced. No surviving saw-pits or charcoal-burning circles have yet been discovered. Such features can reveal past management and usage of the wood that are important to preserve as historical evidence, just as one might preserve an old building. Interpretation and dating of many of these features can be difficult without other supporting historical evidence, whether documentary or the testimony of older residents. It would therefore be valuable if someone could be found willing to undertake such historical research.

Many features have been destroyed already, firstly in the early 20thC, when house- and garden-construction on the north side of the wood eradicated most of the boundary features on that side, and secondly, in the last 20 years, when large-scale clearance and re-planting occurred. There were no doubt earlier phases of clearance and re-planting in the 19thC that eliminated other features, so that those that have survived will be relatively modern on the whole. Boundary features, mostly along the current wood-edge, but in a few cases internal to the wood, were the most likely to have survived from earlier centuries, and some may even be medieval in origin. Future operations in the wood need to take the surviving features into account and avoid obliterating them.

The 19thC plantings, from current evidence of surviving trees and their ages, were mainly of beech (for the furniture industry) and hornbeam (grown for firewood and charcoal-making). The survival of a few coppiced and pollarded hornbeams are evidence of the use of this tree for charcoal-making, small easily-harvested boughs being used rather than large timber. Disuse of these trees for such traditional purposes over the last 50 years has led to the tall timber trees that now dominate the older sections of the wood.

Pre-19thC use of the wood is almost wholly obscured today, but a few internal boundary features may provide some clues to differences in the past. The east-west bank some 50m north of the main ride at its eastern end (bordering Compartment O) appears to be a typical lynchet formed at the edge of a wood when the lower side was farmed for some time before being abandoned to return to the woodland it again is today. This may indicate a very old incursion into the wood, possibly medieval, later abandoned when population plummeted and agriculture declined after the Black Death. The existence of the spring at the lower end would have provided a convenient stock-watering facility.

The number of oak-dependent fungi, compared to the sparsity of oak trees, indicates that oak was once a much commoner component of the wood, probably before the 18th-19thC clearances for beech-planting.

The woodland is certainly ancient (it occurs on all maps going back to the earliest known, always with more or less the same shape) and may have been continually wooded

since it formed naturally after the last Ice Age, although it will have been felled and re-planted in whole or part many times. Certainly no trees have survived from even the 18thC, even though both oak and beech are capable of lasting many centuries to become veterans, with much enhanced significance for wildlife and conservation compared to the relatively young mature trees there today.

Future management of the wood

Angling Spring Wood is no longer of any significance as a commercial enterprise. It does, however, still have several major benefits for us today: as an area for wildlife, as a recreational area, and as a sheltered scenic route for journeys on foot between Prestwood and Great Missenden.

Future management of the wood therefore has to be orientated towards two main aims:

- (a) maintaining the wildlife (and historical) interest and enhancing biodiversity (conservation), and
- (b) facilitating public access and enjoyment.

These two broad aims can be in conflict – overuse (or misuse) of certain parts of the wood could damage rare plants and wildlife; “natural” areas providing important habitats for different species are not necessarily the most scenic, or accessible, from the public point of view, particularly for those who like to have a tidy garden-like vista rather than a wild one. Moreover, while commercial exploitation of the wood is not an aim, positive management will still be needed to pursue both aims and this will have financial implications.

Conservation

While there has been a tendency towards a simplistic assumption that conservation is about maximising biodiversity (ie the more species the better), this is inadequate as an aim, because it would actually lead to the destruction of ecological communities that naturally have a low diversity. An obvious example of such a community would be moorland, dominated by heather and a small number of other plant species, and inhabited by a relatively small number of wildlife species and fungi, which are particularly adapted to this community and cannot survive elsewhere. A similar community is the W14 woodland occupying part of the Angling Spring site. With the deep shade of mature beech and a dominance of bramble in the ground cover, the diversity of plant species is low, although there is a good variety of fungi and plenty of wildlife using this habitat. The aim in cases like these should be to preserve the ecological community rather than create uniformly mixed woodland by deliberately planting lots of different species. (For more on biodiversity and habitat conservation, see the introduction to Prestwood Nature’s Action Plan.)

With respect to the remaining uncleared compartments of the W14 woodland (I, J and M) the best policy would be almost total avoidance of interference to allow a fully natural community to develop. Mature trees need to be left standing through their lifetimes, including their ultimate period of decay, and dead fallen wood left on the ground. This will provide the micro-habitats needed by a large number of the fungus and insect species already occurring in the wood, and allow other species adapted to this kind of habitat gradually to invade over time. Younger trees, particularly of beech, hornbeam, oak and perhaps wild cherry, should be allowed to grow into the next generation of mature trees. This may require a little thinning of over-abundant saplings and invasive shrubs like holly to provide room and light for growth, but such intervention

should be kept to a minimum. A few plants of invading Spanish bluebell also need to be removed. While the community should become enriched over time, it will never have a high diversity of plant species. Nevertheless, the displays of bluebell, interestingly-shaped old trees, and particularly the ancient boundary-features in I and M will still provide a satisfying environment for the leisure walker.

More or less the same approach can be recommended for most of the remaining uncleared compartments of the W12a woodland (K, L, N and P). These already contain some of the rarest species in the wood and should have as little interference as possible. Special management in favour of some of the species may also be needed (see below, species action plans). Again mature trees should be allowed to stand into senescence, and fallen dead wood retained, as far as possible *in situ*. Some thinning of holly, exotic trees like cherry-laurel, and over-close saplings will also be needed to maintain the existing ground community of dog's mercury, bluebell etc. The higher fertility of this habitat type, compared to W14, will require more regular maintenance.

Compartment P has a footpath only along two edges and is relatively safe from trampling, although the dumping of garden rubbish from the gardens along its northern edge will need to be stopped, as it is allowing the invasion of non-natural species and over-enriching the soils to the eventual destruction of the habitat. Existing exotic species should be removed, including some Spanish bluebell, which can hybridise with native bluebell and lead to its extinction. By encouraging nettles, such enrichment also spoils the enjoyment of walkers.

Compartment K, on the other hand, is crossed by a number of well-used paths and it may be that action may be needed to protect certain particularly sensitive areas. There is also some problem of dumping of garden-rubbish along the northern edge at the east end, and along the footpath past compartment F.

Compartment L is not crossed by paths, but has been substantially destroyed by the placement of hard-standing there and the deposit of large amounts of garden rubbish encouraged by the hard-standing. The whole area is now being invaded by weeds out of character with the woodland. The stones used to create the hard-standing are of limestone, introduced from some region far-distant, and will totally change the character of the soil here, preventing the re-establishment of the W12a community. Ideally this hard-standing and the piles of introduced soil should be removed entirely, although it will now be difficult to control the weeds that have become established. Ruling out the use of chemical weed-killers that would have undesirable side-effects, the only resort would be hand-clearance and, against the principles that would generally be applied to the management of this wood, well-spaced planting of compatible native tree species and re-planting of the removed bluebells, the sight of which from the road was once a much appreciated public facility. Hand weeding by volunteers and prevention of bramble invasion would need to be done for some considerable time thereafter.

Other options in place of the removal of the hard-standing, like making it a picnic-site, have drawbacks such as being too close to the road, encouraging too much public pressure in a sensitive area of the wood, allowing access to vehicles (some of which would be bound to be used irresponsibly) and the continuing problem of weed-control. The necessity of the hard-standing for lorries to remove large timber will no longer apply if all felling of mature trees is now to be stopped in accordance with this plan. Removal of the hard-standing, despite the cost of this, appears to be the only option in line with the conservation needs of the wood.

The central ride of the wood needs special consideration, as the most bio-diverse and distinct habitat. To enhance this area as much light as possible needs to be encouraged by removing saplings and some of the bramble and scrub too close to the

path, although special consideration has to be paid to the needs of the wood small-reed here, and some stands of raspberry, rightly appreciated by passers-by, should certainly be maintained. Such opening up will encourage further flowering plant species occupying grassy areas of woods. The aim of management should be to create a habitat gradient from short grass in the central part of the ride, bordered by a tall-grass and herb community, itself merging gradually into scrub and woodland. In some places this might involve slightly widening the ride.

The spring area at the east end of the ride also needs special consideration. This already has a natural community of marsh plants and there appears little need for any sort of intervention. Indeed, any management here would probably be to its detriment. The spring causes the path at this point to be very wet. For the convenience of walkers, and to further distant human passage from the immediate vicinity of this very sensitive micro-habitat, thought might be given to moving the path slightly further north at this point, although walkers will still need to return to the stile once the path between compartments O and P is reached. Whether it would be possible to move the entrance to the wood at this point slightly uphill would have to be examined in detail. There is a danger that this would spoil an interesting area of old boundary and a unique assemblage of puffballs at the southern tip of compartment P.

Of the uncleared compartments this leaves just O for consideration. Although it might be treated as the other compartments of W12a vegetation, to which category it belongs, the character of this area (which was probably managed differently in the far distant past - see remarks above in relation to archaeological features) is slightly different, with good communities of wood-sorrel and primrose that might be encouraged by more light. This would need a more aggressive policy towards the removal of scrub and saplings, although it may be possible still to avoid the removal of any mature trees. The results of such an experiment in making a lighter stretch of woodland could be used to determine future management of other compartments. Rising up a bank immediately from the ride, if this area was able to develop a grassier and more flowery ground-cover it would make an excellent site for picnic lunches or just resting. Human use of the area, far from being a problem, would help keep it open (at least within reason).

The compartments that have been clear-felled present a much greater challenge for management. The damage having been done to the natural communities, one can only accept what has happened and start from there. None of these areas will return to anything like the W14 or W12a communities for many centuries, so that one's aims must be rather different.

Many of these compartments are dominated by larch plantations. These not only support very little wildlife of any importance but the shade inhibits the growth of native species and the needle-fall acidifies the soil. At the same time, wholesale removal could be a problem if it allowed a major invasion of bramble by creating too much light. The best approach in these compartments (A-F) would be selective removal of larch around existing native tree saplings, allowing these to grow, while not opening the whole area to excessive light. (This is the policy adopted by the Woodland Trust in these circumstances.) Over several decades this could lead to the gradual elimination of most of the larch, although there is no harm in allowing a few specimen trees to survive to add to the variety and interest of these spaces, which will already be of a more mixed woodland type than the uncleared areas. Saplings of beech, oak, hornbeam and wild cherry might be selectively encouraged, as in the more "natural" areas, although it appears that some "cherries" planted in compartments E and F are in fact garden varieties of cherry-plum and these exotics should not be encouraged because of the possibility of hybridisation and corruption of the native community. Most of these

compartments contain a good number of young native tree species that should make this policy practicable. The exception is compartment B, where the larch is totally dominant. It may be possible to remove this plantation only very gradually, starting with the few native saplings that are available. Clear-felling of the larch here would be disastrous, by encouraging the invasion of a wide variety of plant species in a part of the wood which naturally has low diversity (it is contained wholly within Compartment M). Some of the upper slope in Compartments C and E contains small surviving communities of old woodland indicator species and these would benefit from priority treatment in removal of larch in a controlled way.

Compartments G and H have been re-planted entirely with native tree species. These require only scrub removal (a large amount in H) and possibly a little thinning. Here it may be possible to consider an experiment, in limited plots, of coppicing or pollarding. This allows the wood to be periodically re-opened to light in sequential plots, allowing expansion in populations of plants like primrose. This may actually be more like early management of the wood (pre 18thC) than the semi-natural areas of mature beech that have grown up since. This would provide an interesting project for volunteers, as long as its effects were regularly monitored. Such management, if successful, could be later transferred to some of the other compartments where larch is being removed. There is a small but re-emergent market for coppice products in the Chilterns, encouraged by the Small Woodlands Project. Some exotic species in Compartment G (eg cotoneaster) might be removed, although, as long as they are non-invasive species, the odd specimen could be regarded as adding interest to an area that in any case has already been destroyed as a semi-natural community.

These general management principles (which would have to be worked out in even further detail on the ground before application) might need to be supplemented by action specifically aimed at the preservation of selected rare species. Species action plans should be developed for wood small-reed, wood barley, slender StJohn's-wort, slender slug, wood-boring beetles, Adonis ladybird, the rarer fungi, and woodland hoverflies. (Other species might have to be added to the list in the light of further discoveries.) These would involve assessment of their current condition, prevalence, threats to their survival, and design of measures to aid their survival and, if necessary, increase their populations to sustainable levels.

Managing access and amenity

Current usage of the wood is doing little damage to the natural communities. In fact, frequent human use of the wood ensures that improper activities are more likely to be observed, so that intervention can be effected. Possible general threats are horse- and cycle-riding off bridleways, rubbish thrown down particularly at the side of the main ride by passing walkers, dog faeces, depositing of garden rubbish, removal of fallen timber, and illegal removal of standing timber at the eastern edge.

The passage of horses and cycles through the wood inevitably impacts on the ground-cover, especially in wet conditions. This should therefore be confined to set routes, which is in any case necessary to avoid danger to walkers. The only official bridleway is currently along part of the southern boundary, but some riders also cross the wood, and there is uncertainty about the existence of a (presumably) permissive bridleway, and what route this might take - different riders are currently using different routes, each claiming theirs is the correct one. There are council bridleway signs lying in the wood that have presumably been taken down (officially or unofficially) at some time. The District Council needs to sort out whether such a route exists and clearly sign the route. There seems to be no reason to deny such a route to riders, as

long as the main ride is kept free from horses and bicycles, as this is a more sensitive habitat.

Most of the rubbish in the wood appears to be drink-bottles and cans, crisp packets etc, thrown away by schoolchildren using the main ride as a route between school and home. The dangers and unsightliness of such behaviour should be brought to their attention by their schools and parents. Even so, a certain amount of litter can still be expected and those using the wood who are of a more public-spirited nature might, as some already do, regularly collect such rubbish (taking care to pick it up using plastic gloves or bags) and remove it to a dustbin or recycling bin. Leaving conspicuous litter only encourages further irresponsibility.

Some dog-walkers regularly take away their dogs' droppings. The provision of dog litter bins at each major entrance to the wood might encourage even more to do so. Some dog-walkers consider that such litter is not a problem. With only infrequent use, this might be so. But there are many dogs taken through the wood on a daily basis and the accumulation of litter at certain periods is unpleasant to other users, dangerous to children because of the danger of the spread of disease, and, concentrated particularly in the ride area, nutrifies the soil to the detriment of certain plant species. It would be helpful if dog-walkers would keep to a minimum the amount of dog mess left in the wood.

The problem of dumping garden rubbish "over the fence" has been mentioned above. Householders surrounding the wood might be leafleted by the District Council to explain the bad effects of this habit. Where such dumping continues, the householder concerned should be approached directly.

It is important to maintain plenty of fallen dead wood for fungi and wood-boring insects. The odd log taken away will make little impact, but people should be discouraged from doing so. A code for the use of the wood might be exhibited along with an information board at a major entrance to the wood (see below).

Lorries have occasionally been seen in the field at the east edge of the wood. These seem to be associated with illicit timber removal and depositing of rubbish. Such events should be reported to the District Council.

Enjoyment of the wood by all users would be enhanced by the provision of information boards in accessible places, explaining a little about the wood and its natural history and the policy behind its management, along with a code for using the wood without causing damage. The current board is unhelpfully placed at a location where there is no public access! This display should be updated and boards placed at one or both ends of the main ride, possibly also at other major entry-points.

The safety and convenience of the many users of the wood has, of course, to be a continual concern. As occurs at the moment the District Council needs to ensure that paths are kept reasonably open and that trees in danger of falling on paths are removed. It is, however, difficult to forecast which trees are likely to be a danger - even though regular assessments are made at present, some trees are removed that would seem to have no decay at all, while others that have been left have nevertheless come down across a path during a storm. It has to be accepted that the enjoyment of walking through a wood is dependent on there being trees, and that any tree might have an unexpected weakness that cannot be forecast. It is largely up to the general public not to enter a wood during a violent storm, which is the only time there is likely to be any danger. It is unlikely in any case that anyone would consider using the wood on such an occasion. Although the District Council errs on the side of caution in these matters, there are many woodlands (indeed the vast majority) where the owners make no assessments of trees beside paths and none are removed for that reason. While one may have to accept that certain mature trees must occasionally be felled because they

are seen as presenting a danger, the numbers should be kept to an absolute minimum, as the more trees that are removed the greater the danger that others nearby will fall in a storm, their protection from winds having been removed. This is, indeed, a general argument against selective felling of mature trees, as has recently been proposed by the Council's forestry consultants.

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References

Hyman, PS & Parsons, MS (1992) *A Review of the Scarce and Threatened Coleoptera of Great Britain*. Joint Nature Conservation Committee.

Kerney, M (1999) *Atlas of the Land and Freshwater Molluscs of Britain & Ireland*. Harley Books.

APPENDIX - UPDATE November 2005

A visit by the author with fellow members of the Conchological Society of Great Britain on 22 October 2005 confirmed the presence of the **slender slug**, and found it in widely dispersed parts of the wood. The same visit also revealed the presence of another slug that is an ancient woodland indicator species, the **ash-black slug** *Limax cinereoniger*.

UPDATE December 2008

Significant new species added for the wood in 2008 included **lady fern** and the **landhopper** *Arcitalitrus dorrieni* (first Bucks record).