

Priorities for Woodland Biodiversity on the Isle of Wight

Biodiversity is a term that has been used with increasing regularity over the past decade to describe the variety of life on earth.

Not only does it include all species of plants and animals but, of critical importance, it also includes the genetic variation and complex ecosystems of which these plants and animals are part.

It is these aspects of biodiversity that are particularly important for an island such as the Isle of Wight.

by
Jonathan Cox

Priorities for Woodland Biodiversity on the Isle of Wight

Why is biodiversity important?

At a global level, biodiversity is essential for life. Our oxygen, food, water, clothing, health and relaxation are all provided for in large part from biodiversity. Biodiversity extends from the cultural or spiritual benefits to be gained from contact with nature, to the economic potential of wild species for new sources of food or medicine. On the Isle of Wight, the value to tourism of biodiversity must not be forgotten - after all it is the distinctive quality of the Island's landscape that attracts a significant proportion of its visitors.

The Convention on Biological Diversity was signed by the UK government at the Earth Summit held in Rio de Janeiro in 1992. Following this the UK published its Biodiversity Action Plan in 1994. This sets out the broad strategy for biodiversity conservation in the UK.

The strategy was taken forward by the UK Biodiversity Steering Group who were given the task of preparing a detailed programme for implementing the UK Biodiversity Action Plan (UK BAP). The UK Steering Group Report was published in 1995 and endorsed by the government in 1996. It contains two components of key importance to woodland biodiversity on the Isle of Wight:

- 1 It contains costed action plans for the UK's most threatened and declining species and habitats, termed priority species and habitats.
- 2 It identifies the need to promote Local Biodiversity Action Plans as a means of implementing the national plan.

Habitat and Species action plans have been, or are being, produced for some 172 priority species and 40 priority habitat types.

The National perspective

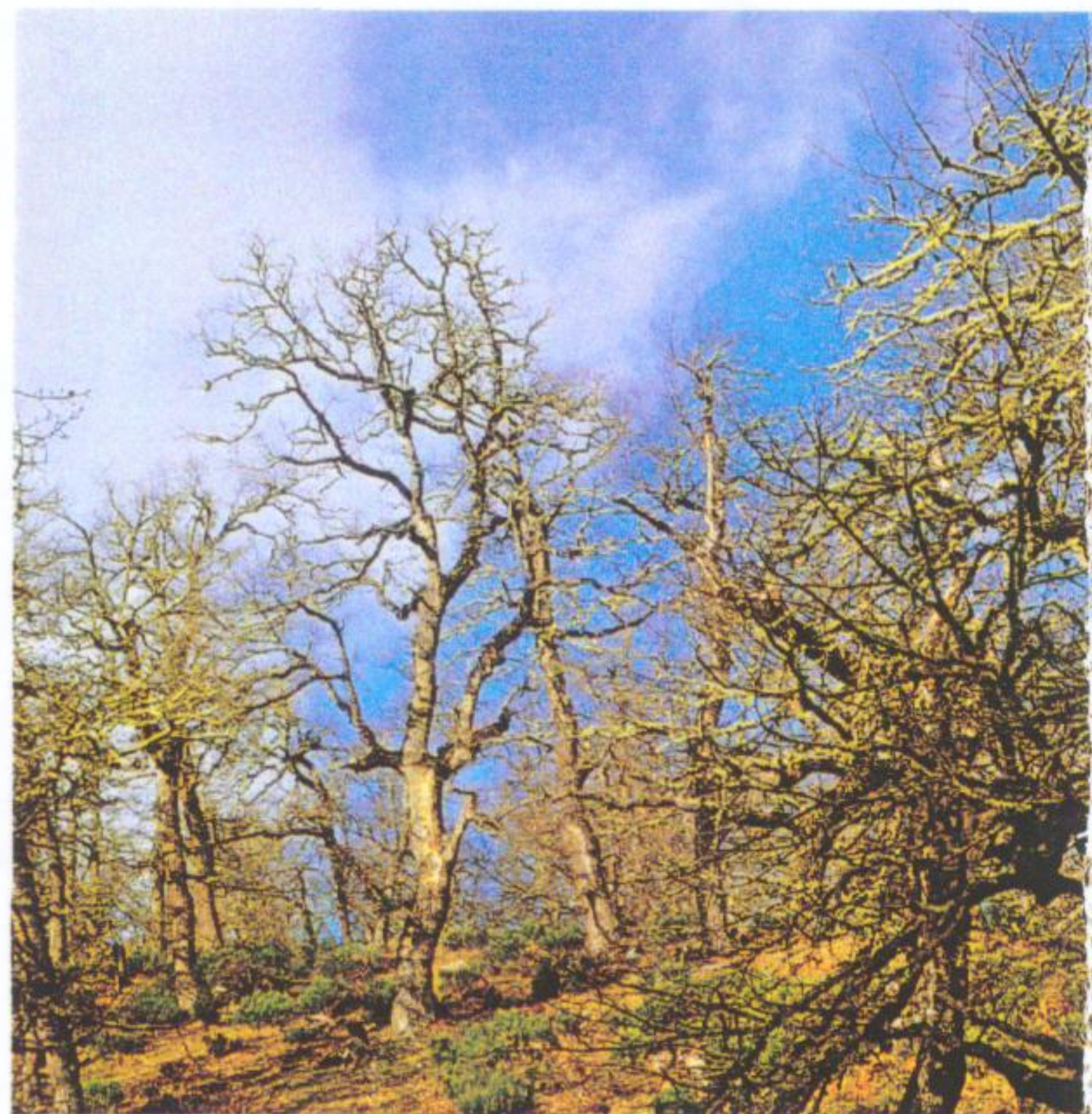
To put the Islands woodland into the national context we need to look at those habitats and species listed as priority habitats and species within the UK BAP to identify which occur in Isle of Wight woodlands. The IW Council is undertaking this Biodiversity Audit.

Of the 40 priority habitats in the UK BAP, 6 are of native woodland types. Three are particularly significant on the Island namely:

- Lowland mixed Broadleaved Woodland
- Lowland wood pasture
- Wet woodland

In addition, although not strictly woodland, Ancient and Species Rich Hedgerows have also been identified as a priority habitat.

Hedges are particularly important for the conservation of woodland biodiversity on the Isle of Wight and their management is also closely related to that of woodland. It is therefore logical to include them in the list of priority woodland and wooded habitats for biodiversity on the Island.



A mixture of grazed woodland and open grassland glades seen in northern Spain.

As a first stage developing a local Biodiversity Action Plan for the Isle of Wight, the Isle of Wight Council have published an audit and assessment of the Island's biodiversity. This identifies key species associated with woodland on the Island. These are a combination of national BAP priority species, species of national conservation concern (also listed in the UK BAP) and locally important species for which the Island holds regionally important populations. These are listed in the table.

In terms of the national perspective, the Island's woodlands are also very important for a number of priority species. We must await the results of the Biodiversity Audit of the Island before we know which of the 170 or more national priority species are associated with the Isle of Wight woodland, but from an initial appraisal of the list it is clear that the Island's woodlands are significant for those species listed in the table.

Key woodland species on the Isle of Wight

Species	Comment on status and distribution
Red squirrel*	Ubiquitous throughout almost all I.W. woodlands.
Dormouse*	Ubiquitous throughout I.W. woodlands and also occurring in scrub habitats often some distance from the nearest woodland.
Bechstein's bat* Noctule bat Barbastelle bat Natterer's bat	These bats are confined to the most heavily wooded parts of the Island with the highest concentrations of semi-natural woodland.
Pearl bordered fritillary*	A butterfly of the late spring, now rare on the Island although previously more common when coppice management was widely practised.
Red-necked footman	A moth associated with lichen covered trees.
Wood cricket	Small, almost black cricket found amongst leaf litter in woodland glades. Probably confined to ancient woodland sites.
Tree ant	An ant found on ancient trees often in parks and wood pastures.
An empid fly	A fly of dead and decaying trees.
Stag beetle* and other beetles associated with dead and decaying trees	Stag beetles and many other rare and uncommon beetles spend much of their life feeding on dead and decaying wood in old trees.
Nightingale	A bird of dense scrub and coppice woodland, declining throughout much of England and now uncommon on the Island.
Barn owl	Barn owls frequently nest in old trees on the Island and hunt along woodland edges and rides.
Nightjar*	A bird of heathland and large woodland clearings which occurs within the Island's woodlands.
Wood calamint	The Island has the only colony of this plant in Britain found within an ancient woodland on chalk downs.
Bluebell	Bluebells are a feature of both the Islands ancient woods and some bracken covered downs and cliffs.
Narrow-leaved lungwort	The Solent and its tributaries support the only colonies of this plant in Britain. It is always associated with ancient woods and is found in many woodlands in the north of the Island.
Ivy broomrape	This parasite of ivy is found in many woods on the south of the Island, but nationally it is very uncommon.
Tree lungwort and other ancient woodland lichens	These lichens depend upon a long continuity of woodland cover and are confined to ancient woods and trees on the Island.

*UK BAP priority species

It is interesting to note that of the national priority species listed in the table the Island's woodland are important for a group of three mammal species, red squirrel, dormouse and Bechstein's bat. Nowhere else in Britain do all three of these species inhabit the same woodland making this a unique assemblage in the UK. It can be argued that this community of woodland mammals is of greater importance than any one of the individual species - the whole is greater than the sum of its parts.

The Isle of Wight Biodiversity Action Plan

The Isle of Wight Council has recently launched its Biodiversity Action Plan, which, like the national plan, identifies the strategy for biodiversity conservation on the Island. The next and most difficult part of this process will be to prepare action plans for those habitats and species that are important in the Isle of Wight context. These will need to have regard to the national perspective, but will also focus on aspects of the Island's biodiversity that are of more local importance.

The Isle of Wight Biodiversity Action Plan will include separate habitat action plans for all woodland on the Island, so this is a crucial time to start thinking of what is important about Isle of Wight woodlands and how they might be conserved and restored in the future.

The importance of native woodland

To understand the importance to biodiversity of native woodland, as opposed to plantations, particularly of non native species, we must cast our minds back to the end of the last Ice Age some 10 thousand years ago. At that time, Britain was connected to mainland Europe via a land bridge, as was the Isle of Wight to the mainland of Britain. As the climate gradually became warmer and the ice sheets receded a succession of woodland plants and animals colonised Britain and the Isle of Wight via these land bridges.

This succession of woodland colonisation is recorded in peat bogs where pollen from the developing woodland has been conserved over thousands of years as layer upon layer of peat has gradually built up, each layer trapping and preserving a record of the woodland plants present in the form of their pollen.

Analysis of the pollen gives us a picture of the changes in woodland type over time. The peat beds within Gatcombe Withybeds in the Medina Valley have been analysed in this way and provide a remarkable record of the development of woodland on the Isle of Wight over the past 12,000 years (Scaife, 1982).

This type of analysis shows that a woodland cover developed quite rapidly between 9 - 10,000 years ago, as birch and then birch/pine woodland colonised Britain in Boreal type conditions, similar in many ways to those found today in Siberia.

As the climate improved further, oak and hazel and then alder, willow, elm and lime became established. The arrival of the lime marked the start of a long period of relative forest stability from about 7,500 years ago until about 5,000 years ago.

This climax forest has been termed by Oliver Rackham, (Rackham, 1976) as the "wildwood". The forests of lowland England in which Mesolithic people lived are, therefore, thought to have been dominated by small-leaved lime, oak, hazel, alder and, in places, ash. Scots pine may also have remained in a few parts of Britain, like the Brecklands of East Anglia.

Beech was one of the last colonisers to arrive in Britain and complete the formation of our native woodlands. There are records of beech occurring in Dorset at the end of the Atlantic period some 5,000 years ago.

What the wildwood looked like is open to some speculation. Fossil remains and references to the native



Narrow leaved lungwort *Pulmonaria longifolia*. A nationally scarce plant species associated with the Solent and its tributaries. It is a good indicator of the most ancient of ancient woodlands and is found in several woods in the north of the Island.

woodlands discovered by early North America settlers suggest that there would have been many massive trees and much dead and decaying wood. It has been estimated that as much as 50% of all wood in the wildwood was dead and decaying. Beneath the forest canopy there would have been little understorey, but the pollen record suggests that there was abundant hazel flowering somewhere in the wildwood. Rackham suggests that this might have been due to the patchy cover of woodland.

The abundance of hazel pollen at this time might also be a clue to another feature of the wildwood: that it was composed not of a continuous blanket of mature trees but that it had a very varied appearance with glades some grassy, some with heathers, and others infilled with scrub and regenerating woodland.

Evidence for such a woodland structure is reflected in our native flora and much of our fauna. Take, for example, the many butterflies that depend on open, sunny conditions. It is likely that these were present within such glades in the wildwood, for it is unlikely that they could have colonised Britain following the severance of the land bridge with mainland Europe.

The other important aspect of the wildwood was as a home to a significant population of large herbivorous animals, including the wild cattle or aurochs, together with wild horses, pigs and deer. These animals would have maintained the open glades and had a significant effect on the development of the patchy mosaic within the wildwood.

Many ecologists now think that the mix of woodland and open glades found today in some parts of the New Forest is very close in terms of its structure to the original wildwood. A similar pattern of grazed woodland and open grassland can also be seen within the foothills of the Picos de Europa, a mountain range in northern Spain.

This historical perspective provides a basis for assessing what aspects of the Island's woodlands are important to conserve and restore in the future. A number of conclusions can be drawn:

1. Woodland has formed a significant part of the Island's landscape for thousands of years and over nearly all that time has been composed of broadleaved trees and shrubs. These were able to regenerate themselves naturally and over this long period are likely to have developed a genetic make up which is distinctive to the Island.
2. There are a number of woodlands on the Island that appear to have descended directly from the original wildwood and these have probably remained under continuous woodland cover since that time. These are likely to support the richest assemblage of specialist woodland plants and animals. Many of these - due to their poor powers of dispersal - are unlikely to colonise more recent woodlands.

These most ancient of ancient woodlands are often termed primary woods. Good indicators of these primary woodlands are tree species such as the wild service tree *Sorbus torminalis* and wych elm *Ulmus glabra*, or ground flora species such as the nationally scarce narrow-leaved lungwort *Pulmonaria longifolia*. Some of the best examples of these most ancient of woodlands occur around the coast of the Solent. Briddlesford and Firestone Copses are good examples as are Burnt Wood near Thorness and the woods around Kings Quay.



Wild service tree *Sorbus torminalis* in autumn; a strong indicator of ancient woodland on the Isle of Wight.



A similar pattern of grazed woodland and open grassland glades can also be seen within the foothills of the Picos de Europa.

3. Many of the woodlands on the Isle of Wight might have gone through a phase of clearance at sometime in the past but have remained wooded for centuries and over time have been colonised with many of the more exacting woodland plants and animals associated with the primary woodlands. These are still termed ancient woodlands, but they are secondary in origin and hence are known as secondary ancient woodlands.

There is evidence that many of the ancient woodlands on the Island's chalk downs were once cleared and are secondary in nature, for instance Eaglehead and Bloodstone Copses and the woods in the Rowbridge Valley.

4. There are more recent woodlands that have developed in the last few hundred years that are composed predominantly of self sown trees and shrubs, often spreading from adjacent hedges of much greater antiquity. These more recent secondary woodlands are also of considerable ecological interest as they are developing a rich flora and woodland fauna and often contain mixtures of woodland and grassland species. This can be seen in the National Trust's Walters Copse at Newtown. These are often termed recent secondary woodlands.
5. There are woodlands on the Island that were managed as wood pastures up until the last century. This rather unlikely combination of management objectives (grazing, which in the extreme can prevent tree growth, and growing trees which retards the growth of forage for livestock) creates a woodland that is perhaps the closest we can get to the former wildwood that once covered much of lowland Britain. The best preserved example of former wood pasture on the Island is undoubtedly Parkhurst Forest. Indeed, having grown up exploring Parkhurst Forest, it was a revelation to me to see how similar it is to parts of the New Forest. Parkhurst is in many ways simply a fragment of the New Forest detached from it by the Solent.
6. The important mammal fauna of the Island would have survived for several thousand years in native broadleaved woodland. For most of post glacial history, the Isle of Wight red squirrels, dormice and Bechstein's bats did not have access to plantations of non indigenous conifer species.

From this overview, it is possible to identify some priorities for the conservation of woodland biodiversity on the Isle of Wight. Clearly, the richest woods for biodiversity are those which have been established the longest. The ancient semi-natural woodlands on the Island, therefore, represent the most important reservoir of woodland biodiversity and the conservation and restoration of these must be our first priority. This will involve the adoption of a variety of management techniques and methods.

Coppice management

The vast majority of the Island's ancient woods have traditionally been managed as coppice to provide a continuous supply of wood, the pre-industrialised world's answer to oil, in that it provided not only a source of fuel, but also the raw material to manufacture a wide range of consumer products. The copses were intensively managed and created a habitat that was in many ways quite un-natural, but replicated certain of the natural micro-habitats found in the patchy mosaic of habitats within the wildwood. The copses were, therefore, rich in both woodland glade and thicket stage associated plants and animals: the red squirrel, dormouse, several of our woodland butterflies, such as the pearl bordered fritillary, and a number of woodland birds, such as the nightingale, were all to be found in these copses.

Coppicing seems to have more or less died out on the Island in the middle of the 20th century as the demand for its products declined. With this decline there has been a loss of the specialist woodland flora and fauna associated with coppice; pearl bordered fritillaries, for instance, are now very rare on the Island whereas early indications from research at Briddlesford Copses suggest that dormouse populations are about twice as good in active coppice as they are in derelict un-cut coppice (pers comm Paul Bright).

There is, therefore, a very strong biodiversity incentive for restoring coppice management on the Island. It appears that there may now be a new market for coppice products. However, there remains a significant financial burden in restoring coppice to a productive state and this represents a significant obstacle to re-establishing coppice management. There is clearly a requirement for continued assistance in terms of marketing, advice and training and in the cost of coppice restoration if this element of the Island's woodland biodiversity is to be conserved in the future.

High Forest

Even with a high level of support, it is my view that we are unlikely to get more than about 50% of our ancient former coppice woodlands back into active coppice management. There are also good arguments to suggest that it might not even be desirable to restore more than this amount. Many of these former copses have now developed into high forest woodland



since they were last cut. Their coppice stool density has become too thin whilst their canopy has coalesced to become almost complete. To restore such woodlands would involve the felling of many mature trees and regenerating a new coppice layer. Such an operation would be financially costly and ecologically quite disruptive, and is probably not a desirable course of action. Managing these new high forest woodlands to maintain and enhance their biodiversity presents a number of new problems.

Firstly, what sort of woodland structure would be preferable? My feeling is that large trees are likely to be of greatest biological value and hence we should be looking to encourage long rotation management of up to 200 years and the retention of a proportion of trees to a much greater age of 400 years plus. Trees of 200 years will need to be of good timber quality if they are to be commercially viable and this leads to the second problem of regeneration system.

It is now becoming much more widely accepted that plantation forestry methods of clear fell and replant are not the way forward and we must be developing better methods of continuous cover management. We are blessed on the Island with a good climate and absence of deer which makes natural regeneration a potentially viable form of woodland regeneration. Much can be learnt in this respect from woodland management systems on the Continent. As with coppice restoration, conversion of former coppice with standards woodland to high forest will require the input of considerable amounts of support both in terms of advice and finance.

What value these high forest woodlands will have for biodiversity also needs to be considered. Certainly in the mature stages of growth they are likely to develop a rich lichen flora, invertebrate fauna and hole and crevice nesting bird fauna. The dense understorey and diversity of species present in some high forest woodland will also be of significant value for red squirrels. Dormice are also likely to remain, but at lower densities than in coppice woodland.

Wood pasture

Grazed woodland, or wood pasture, has a long history on the Island and there is a very strong case for attempting to restore this form of woodland management system. The clear favourite for such a management policy must be Parkhurst Forest. Parkhurst still retains strong ecological links with its former wood pasture management system and the benefits to woodland biodiversity would be greatest.

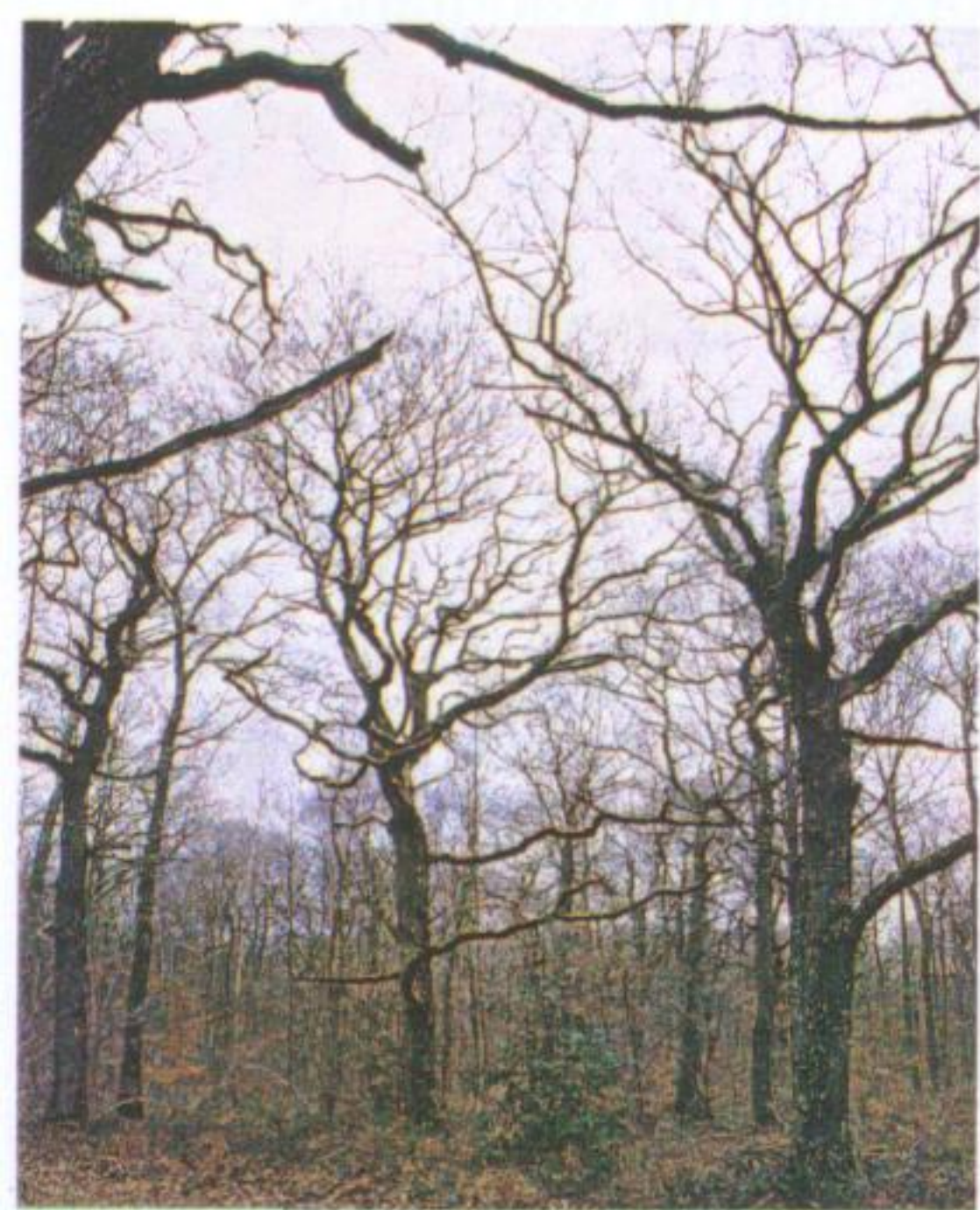
Such a move might be considered controversial, but there is now ample evidence that grazed woodlands, or wood pastures, represent an internationally rare woodland type that is of great value to biodiversity.

The restoration of Parkhurst Forest as a wood pasture would aim to restore a near natural forest structure similar to that found in the Ancient and Ornamental woodlands of the New Forest. Much of the characteristic fauna and flora of wood pasture still survives in Parkhurst, this includes:

- A rich lichen flora (Parkhurst Forest is the richest woodland for lichens on the Island).
- A rich dead wood associated invertebrate fauna.
- A diversity of hole and crevice nesting bird species.
- A woodland and associated heathland and grassland flora which is clearly derived from a history of grazing.

Not only would the restoration of grazing ensure the long term maintenance of this relic wood pasture ecosystem; there is tremendous potential for increasing the biodiversity of Parkhurst Forest. For example wood pasture restoration would:

- Be likely to attract a characteristic breeding bird fauna of grazed woodland such as the wood warbler (occasionally heard singing at Parkhurst during spring, but no confirmed breeding).
- Support a rich bat fauna as the combination of veteran trees and grazing animals creates ideal habitat for a number of woodland bats.
- Provide ideal habitat for nesting nightjar and a range of other woodland edge species such as spotted flycatcher. (The complex mosaic of open grassland and heathland glades with intervening blocks of ancient woodland).



High forest sessile oak woodland. The genetic diversity of ancient oak woodland is evident with no two trees being alike.



Former pasture woodland in Parkhurst Forest with ancient open grown beech and holly understorey.

The restoration of wood pasture to the Island would also restore a woodland management system and landscape type that was present here for centuries, if not thousands of years, prior to the 20th century. Such a restoration scheme would not only have biodiversity but also very significant landscape, cultural and recreational values.

There is a growing support for the adoption of such a policy. This is reflected in the identification of wood pasture and parkland as a priority habitat in the UK Biodiversity Action Plan, the published action plan for which envisages the restoration of significant areas of wood pasture nationally. In addition, the Forestry Commission's own advice on management of semi-natural woodland (Standard Note 5) states:-

"Where current use (or where there is a realistic chance of restoring the grazing regime) traditional wood pasture systems should be continued and adapted to maintain their conservation and cultural values."

It would seem eminently realistic to restore grazing to Parkhurst Forest. Unlike other schemes it would not be beset with problems of erecting fences on common land, or incorporating roads within the grazing area. It would simply require a ring fence to be placed around the perimeter of the Forest, the reintroduction of a herd of cattle of appropriate breed, some New Forest ponies and, over time, the clearance of a proportion of conifer plantations to restore heathland and grassland. This would be necessary to develop the patchwork of wooded and open habitats that many now believe would have been characteristic of the prehistoric wildwood. Although this is straying into issues of heathland biodiversity conservation and restoration, it should be appreciated that restoration of grazing to Parkhurst could have much wider benefits to biodiversity beyond that for woodlands.

Restoration of plantations

In addition to those ancient woodlands that retain a semi-natural woodland cover (that is a woodland composed of native trees and shrubs) there are also a number that have been badly damaged as a result of conversion to conifer, and, in a few places, inappropriate broadleaved plantations. An important priority for woodland biodiversity will be to restore a significant proportion of these to native broadleaved woodland.

Again, the process of restoring semi-natural woodland from conifer woodland has been demonstrated to work well. The People's Trust for Endangered Species has achieved significant success on a small scale at Briddlesford Copse where it has been surprising to see the rate at which hazel and other broadleaved species will recolonise following the removal of mature Scots or Corsican pine plantations. In many instances these native broadleaves are already present in the understorey, waiting for the blanketing effect of the conifers to be removed. In other woods, there is already a significant component of native broadleaves in the canopy which have survived within the conifer crop, despite the foresters' best endeavours.

If we are to restore the Island's ancient woodland to native broadleaves, where should our priorities be targeted? Most is to be gained from establishing larger blocks of native broadleaved woodland as many woodland animals require large areas to survive.

The ancient woodlands in the north east of the Island would fit best into this category. In addition these woods are some of the botanically richest on the Island, including for example, the woodlands around Havenstreet and along the Palmers Brook.

Again there is developing policy support for such an initiative. The UK Woodland Assurance Scheme, for example, talks of the restoration of some 10% of plantations on ancient woodland sites to native broadleaves.

Bearing in mind the relatively small proportion of ancient woodland as a total of all woodland on the Isle of Wight (something like 43% of all woodland), the significant proportion of native broadleaves still present within plantations on ancient woodland sites and the value to biodiversity of semi-natural ancient woodland on the Island, this is probably too limited a target and I would suggest that we should be looking to the restoration of at



A number of woodlands on the Island appear to have descended directly from the original wildwood and have probably remained wooded since that time. These most ancient of ancient woods are often termed primary woodlands. Some of the best examples occur around the coast of the Solent where they are fringed with saltmarshes and mudflats, such as those at Briddlesford and Firestone Copses near Wootton.

least 75% of plantations in ancient woodland. To achieve this sort of target there would need to be significant policy and financial support from the Forestry Commission, as well as further development of markets for broadleaved woodland products.

Expanding woodland area

Although ancient woodland conservation and restoration must be the priority for woodland biodiversity on the Island, woodlands do not exist in isolation and their landscape context must be taken into careful consideration.

Given the value of the Island's woodlands for mammal conservation, particularly for red squirrels and dormice and also for many other woodland edge species (barn owls, bats for instance), there is a need to expand the area of woodland cover on the Island and link existing and sometimes isolated woodlands with improved corridors.

In some places this might involve planting entire new woodlands, but in many cases significant increases in woodland area can be achieved through expansion of existing hedgerows. In many parts of the Island there are hedgerows with rich woodland flora that could be encouraged to increase their size if allowed to spread sideways and upwards.

Given the current poor state of the agricultural economy, there would seem to be ample scope for allowing field sizes to be reduced by encouraging hedges to expand into woodland strips and, where appropriate, to replant new hedges to replace those that have been lost.

This mechanism for woodland expansion has the advantage of retaining much of the landscape pattern of the Island. The hedgerow trees that developed could also be working trees, much as they are in the hedges of northern France and used to be in this country up until the early 20th century. This would mean that through coppicing or pollarding significant quantities of wood and timber can be produced from hedges. Such a policy would also conform with the national priority for the conservation of these species rich hedges identified in the UK Biodiversity Action Plan.

The Forestry Commission have recently launched the JIGSAW Challenge Fund for the Island which provides significant financial incentives to achieve these objectives.

Genetic integrity

The ancient woodlands on the Isle of Wight have links that extend back through history to the prehistoric "wildwood". This long period of ecological continuity has permitted the development of a distinctive genetic diversity within the Island's ancient woodlands. The conservation of this genetic diversity is integral to the objectives of biodiversity.

This is illustrated by the diversity of oak tree forms within an ancient semi-natural woodland such as Briddlesford Copse. In such woodlands no two trees are the same, with many hybrids being present as illustrated by their leaf and growth form. It seems logical to expect that in these woodlands we will find trees developing characteristics that are adapted to their local environmental conditions, assisted, of course, by the selective axe of the woodman.

Wherever possible natural regeneration should therefore be practised in woodland management to maintain this genetic diversity. However, it is appreciated that this might not always be possible (especially where woodland restoration is an objective) both when restoring coppice and high forest woodland and in the conversion of conifer plantations.

For this reason it is my contention that we should consider developing an Island tree nursery, run on profit making lines. This could provide a service to woodland owners and managers which involved the collection of seed or cuttings from a woodland, propagation of that material to a suitable size and then offering it for sale to the woodland owner at nursery prices.

Such a service is already being provided by a company in Wiltshire and a similar approach should be encouraged on the Island. Using this approach an owner might also have the option to select trees of better form in terms of timber production from his stock of trees knowing that these trees have evolved to cope with the environmental conditions they are found in.



This sort of initiative would really be putting biodiversity into action. If sufficient "Island" trees were propagated, the excess could be used for the creation of new and enlarged woodlands of far greater meaning than those planted with trees from Holland or eastern Europe, for instance.

Management of other semi-natural woodlands

Although ancient woodlands are clearly the priority, the management of more recent semi-natural woods on the Island, such as Walters Copse at Newtown or Atkies Copse near Ningwood, must not be overlooked.

In these woodlands, management options are perhaps more relaxed - providing that their semi-natural state is conserved. The methods employed may involve natural regeneration or propagation from seed, or indeed, cuttings collected from the woodland.

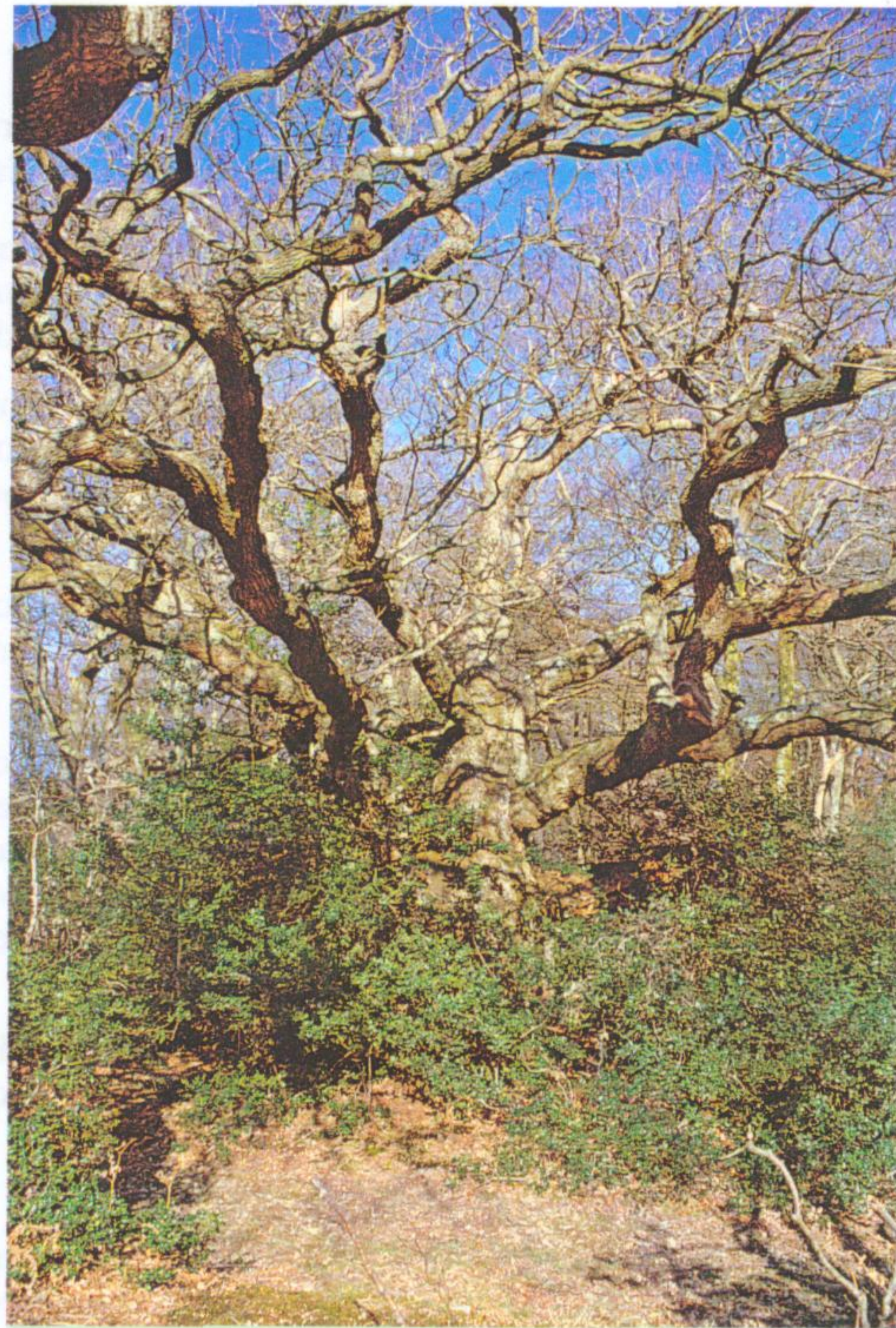
Increasing the biodiversity value of plantations

There is also much scope for increasing the biodiversity value of plantations, both conifer plantations and even aged plantations of broadleaves such as beech or sycamore.

In plantations, the woodland structure has a vital role to play in conserving biodiversity. The development of an uneven age distribution and patchy structure will be most important in achieving this.

Again, the use of natural regeneration will assist in creating this sort of structural diversity. In addition, plantations need to be regularly thinned, not only for silvicultural reasons but also to increase biodiversity.

Where possible, an element of native broadleaves should be encouraged in the plantation crop, either as



Ancient open grown oak with holly understorey in the New Forest. Ecologically, Parkhurst Forest is simply a fragment of the New Forest detached from it by the Solent.

an understorey to the less shade bearing trees, or as scattered trees within the canopy.

Given that many of these plantations were created on heathland, or semi-natural grasslands, the management of open areas in plantations is also vital to biodiversity. These open areas and permanent clearings need to be as large and frequent as is tolerable.

Wide rides and ride intersections, and even grass or heathland glades scattered through the plantations, will therefore, do much for biodiversity. If these can also be grazed by stock then so much the better; otherwise mowing and cutting regimes need to be developed which reproduce some of effects of grazing animals on the vegetation.



The mix of grazed woodland and open forest glades in the New Forest.

Summary conclusions

The Isle of Wight woodlands are ecologically distinct and support populations of plants and animals that make them of national importance to biodiversity. Conserving and restoring this resource will require concerted action from all those concerned with woodland management on the Island. The priorities for such action should be as follows:-

1. Restoration of coppice management, particularly in ancient semi-natural woodlands.
2. Development of appropriate high forest management methods where it is impractical or undesirable to restore coppice.
3. The restoration of wood pasture, with Parkhurst Forest being clearly the most suitable contender.
4. The restoration of at least 75% of non-native plantations in ancient woodland to native and indigenous species.
5. Expansion of woodland cover, particularly through the enlargement of hedges and in places the restoration of lost hedges.
6. The development of an Island tree nursery to propagate locally derived tree and shrub species for woodland restoration and creation of new woodland.
7. Maintaining biodiversity of more recent semi-natural woodlands through the use of natural regeneration and allowing these to develop a more diverse woodland flora and fauna through natural colonisation.
8. Increasing the biodiversity within plantations through development of a diverse age structure, undertaking regular thinning programmes, accepting broadleaves into the crop and increasing the area of open glades and rides within these woods. Where these can be maintained by stock grazing then so much the better.
9. Conserve the special woodland mammal fauna of the Island, not just as individual species but more importantly as a nationally unique assemblage of endangered species.

Jonathan Cox April 2001

Jonathan Cox was born and grew up on the Isle of Wight where his explorations of the countryside and coast around his home at Gurnard stimulated a life long interest in the ecology and conservation of the Island. After graduating, Jonathan joined the Nature Conservancy Council in 1983 as a botanical survey out-posted on the Island.

Since 1992 he has worked as a freelance ecologist and nature conservation advisor, and has written widely on woodland management and ecology. He is conservation manager of the Briddlesford Woods near Wootton for the People's Trust for Endangered Species.





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