Coppicing and Pollarding in the UK's Natura 2000 sites

Peter Buckley looks at the important role of coppicing in the management of conservation woodlands.

Over the last 100 years coppice and pollard management of woodland in the UK has declined dramatically, with the neglected stands quickly shading out their shrub and herb layers. Species requiring light, warmth and shelter of newly-cut compartments disappear, move to the woodland edge or persist in any remaining glades and rides. Losses of early-successional woodland birds, plants, thermophilic invertebrates, mammals and herpetiles can often be traced to the lack of cutting, and in the dense thickets of later stages, the habitat of dormice (*Muscardinus avellanarius*) and a variety of woodland song birds rapidly deteriorates. A recent study at Morecambe Bay, Lancashire, showed that butterfly richness and abundance was greatly enhanced wherever there was active conservation coppicing or commercial woodland management, compared with neglected sites (Taylor et al., 2013). Similarly, uncut pollards in wood-pasture, with their associated fungal communities, lichens, dead-wood invertebrates, bats and hole-nesting birds, may collapse under their own weight or grow into high forests and lose their species in the same way as neglected coppices. Intuitively one would think that there would be pressing reasons for maintaining a cutting regime in coppices and wood-pastures already protected for conservation, despite the cost and effort involved. This brief study looks at how woodland sites, protected for their European nature conservation importance, are faring in coppices and wood-pastures across the UK.

Ten types of woodland habitat in the UK conform to the Natura 2000 network of protected sites in the European Union, designated in Special Areas of Conservation (SACs). For these purposes *Pinus sylvestris* woodland (91C0 Caledonian forest), a priority habitat within Europe, has been excluded as it is not a coppice species, leaving the nine woodland types listed (Table 1). *Taxus* woods (91J0) were included because they usually contain broadleaved species with the potential for coppice management.

Some forest types are well represented in terms of the numbers of SACs, such as old sessile oak woodlands and *Tilio-Acerion* forests, while others like sub-Atlantic oak/hornbeam and old acidophilous oak woods have relatively few designated sites. This to an extent reflects the frequency of each woodland habitat type in the UK, and the

Table 1. Recognised forest types in Special Areas of Conservation in the UK

Code	Forest type	Number of SACs
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrub layer (*Quercion robori-petraeae* or *Ilici-Fagenion*)	7
9130	*Asperulo-Fagetum* beech forests	11
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*	2
9180	**Tilio-Acerion* forests of slopes, screes and ravines	48
9190	Old acidophilous oak woods with *Quercus robur* on sandy plains	7
91D0	*Bog woodland	17
91E0	*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)	36
91A0	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	71
91J0	**Taxus baccata* woods of the British Isles	13

* indicates a priority feature

way that they are fragmented into different parcels. In area terms, several different woodland types may occur together within the same SAC. Natura 2000 standard data forms show, for instance, that old sessile oak woods make up 57% of all forest types compared with only 1% of sub-Atlantic oak-hornbeam woods (Figure 1).

Information on the state of coppice or pollard management in SACs was difficult to obtain, at least from readily available internet sources. Some overviews are instructive: we know, for example, that in 2013 only 66% of Scottish protected woodland sites were in 'favourable' condition (SNH, 2013), implying some form of ongoing management, even if just fencing to assist tree regeneration. Similarly, the internet citations of SACs, National Nature Reserves and Sites of Special Scientific Interest from English Nature, Natural Resources Wales, Scottish Natural Heritage and the Northern Ireland Environment Agency, give summary descriptions from which management can only be inferred. Where detailed site management plans do exist, such as those from Natural Resources Wales, Site Improvement Plans of English Nature, local authority documents and other accounts, there is better evidence of active management. However, almost invariably no precise information is readily available, so that where a wood was stated to have high forest as well as coppice, for example, the areas devoted to each form of management are usually unstated. In these cases equal areas of each type of management had to be assumed, but such an arbitrary rule probably overestimates areas of active pollarding and coppicing. In practice many sites may have already reverted to high forest, with coppicing and pollarding continued or revived only in very limited patches.

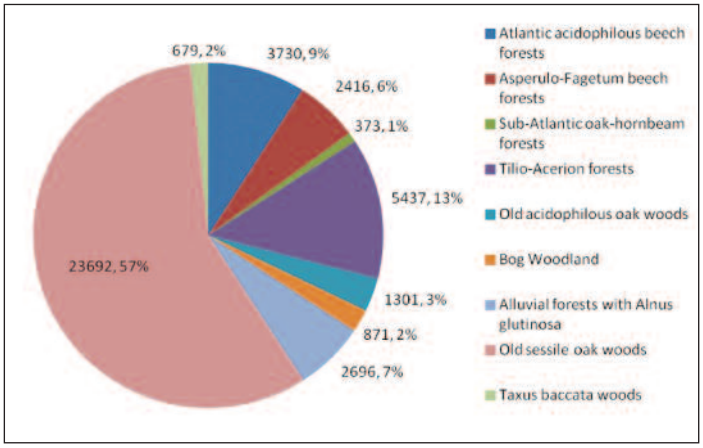

Figure 1. Extent (area in hectares and percentages of each forest type) within selected SACs, from Natura 2000 summary forms.

The history of coppice or pollard management varies markedly according to each forest type. For obvious reasons bog woodland was little coppiced, as were alluvial *Alnus* forests and *Taxus baccata* woods. For *Tilio-Acerion* woods, incidences of management were also low as many grow on steep valley sides and in narrow gorges where forest operations would be constrained. Many old sessile oakwoods in the west of the country were formerly coppiced, but long ago reverted to high forests in a non-intervention state. On the other hand, some Atlantic acidophilous beech, *Asperulo-Fagetum* forests and sub-Atlantic oak-hornbeam are still being actively pollarded or coppiced on at least part of their respective areas. Many of these sites were old wood-pastures or former coppices on sites where public recreation is important; in the old acidophilous oak wood-pastures, over 60% of the area still appears to be actively managed.

The internet search suggests that, at best, only 8% of the total SAC area is still being actively pollarded or coppiced, with over a quarter existing as former wood-pastures and coppices. More than a third appears to be in high forest,

some of which may in turn have originated from old coppices or wood-pastures. A quarter of the sites have no retrievable documented information of any management type, the default position probably being high forest (Figure 2).

This apparent state of SAC management may partly reflect deliberate conservation strategy. As a form of management adopted over only a few millennia, managers may feel that coppicing is not really a 'natural' activity. Hence many SAC reports put an emphasis on high forest conservation values - achieving certain levels of standing and fallen dead wood per hectare, retaining veteran trees where present and ensuring adequate tree recruitment via natural regeneration. As overgrazing by stock and deer was another big issue, particularly in western oak and birch woods, there are continual references to fencing and protecting tree seedlings. The reports also emphasise the development of a good forest structure, with all ages of trees present, although this is unlikely to be achieved without intervention or in the very long term through natural processes. The impression left by some accounts is that reserves should be left in their high forest state, i.e. not coppiced or pollarded, because these activities represent artefacts of human disturbance.

High forests may be desirable for some sites, for example in western oakwoods that were formerly coppiced and retain, despite shading, diverse assemblages of oceanic mosses, liverworts and ferns. This could also be the case for beech woods such as those in the Chilterns, which would probably coppice poorly after long neglect, besides having relatively impoverished herb layers. However, where populations of rare, early-successional species still exist that could not be maintained except by coppicing, the claim for continued management of these SACs might be greater than for high

Neglected hornbeam, birch and aspen coppice in Denne's Wood, an ancient wood in east Kent

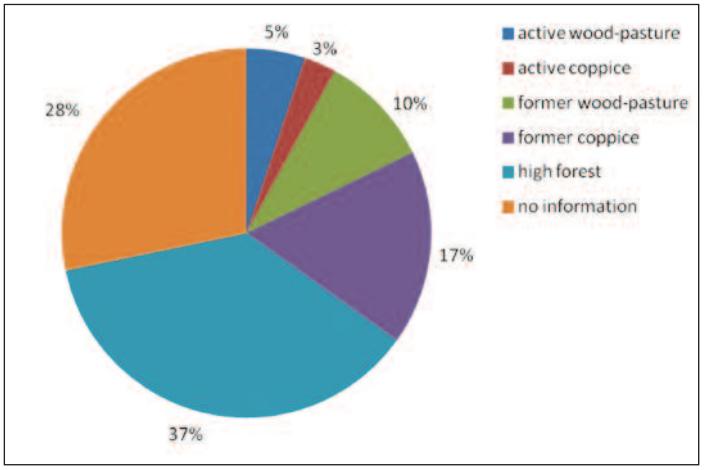

Figure 2. Estimated areas (ha) of SACs under different forms of forest management, based on internet sources.

forest specialists. Some of the site reports specifically mention rare or restricted UK Biodiversity Action Plan priority species, European Protection Species or Red Data species and these may have been a reason for designating sites in the first place. A strong case for continued conservation coppicing might be the presence of populations of the chequered skipper (*Carterocephalus palaemon*), pearl-bordered fritillary (*Boloria euphrosyne*), nightingale (*Luscinia megarhynchos*) or dormouse.

There remains the practical feasibility and cost of resuming coppicing work. Forestry Commission practice guides for the management of semi-natural woodlands advise against re-coppicing stands after 50 years (Forestry Commission, 1994). Because most neglected stands are now much older than this, it is certainly questionable how well they would respond – old coppice stools and pollards may not survive cutting back, and as time goes on the likelihood of success decreases. A default to high forest may also have developed where coppices are no longer economic, rather than through any deliberate desire on the part of conservationists to emphasise a more 'natural' ecosystem in SACs. Having said this, there are some outstanding examples of coppice and pollard restoration in the UK, for example in the Wye Valley and Burnham Beeches, respectively.

This exercise was only carried out on sites protected for conservation, not in undesignated or commercial woods. The last National Inventory of Woodlands and Trees in the UK found about 28,000ha of coppice (Forestry Commission, 2003), a figure that may include just over 10% of the area in protected SACs still under active management. The latest National Forest Inventory, to be published in 2015, will no

doubt show a further diminishing of the UK coppice area.

Natura 2000 aims to maintain and restore, in favourable conservation status, natural habitats and species of wild fauna and flora of community interest. As a general rule it also assumes the continuation of traditional management practices, which have often been critical in creating and maintaining the habitats (and species) that are valued today. Article 6 of the Habitats Directive states that: "Member States shall take appropriate steps to avoid, in the special areas of conservation (SACs), the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive."

Verkerk et al. (2008) argued that protecting forest for biological and landscape diversity had a clear negative effect on the potential supply of wood in Europe. Nevertheless, the incidence of coppicing in UK SACs may be no worse than in non-SAC woodlands, and it is much easier in Sites of Special Scientific Interest (which underpin the SACs) to prevent damaging management than to encourage positive management. Unfortunately, for various reasons (economics, markets, labour, alternative products) coppicing has stopped on many sites. Re-instating it cannot be achieved by SSSI/SAC legislation alone – it requires funding or markets, and labour and skills – to provide the incentive to manage sites in this way. An increasing demand for fuelwood in the future could make all the difference.

Woodland SACs are just one illustration of the dilemma in coppice/pollard management – whether to adopt passive protection, leading to high forests, or continue active management for some early-successional species.

Acknowledgements

I am grateful to Keith Kirby and Christine Reid for commenting on earlier drafts.

References

Forestry Commission (1994; reissued 2003) The management of semi-natural woodlands. Forestry Practice Guides 1-8. The Forest Authority, Edinburgh.

Forestry Commission (2003) National inventory of woodland and trees. Forestry Commission, Edinburgh.

SNH, (2013) The proportion of Scotland's sites in favourable status. Scottish National Heritage, Inverness.

Taylor, D.L, Ramsey, A., Convery, I., Lawrence, A. and Weatherall, A. (2013) The impacts of commercial woodland management on woodland butterfly biodiversity in Morecambe Bay, UK. Conservation Evidence, 10: 10-15.

Verkerk P.J., Zanchi, G. and Lindner, M (2008) Impacts of biological and landscape diversity protection on the wood supply in Europe. EFI Technical Report 27, European Forest Institute, Joensuu, Finland.

Peter Buckley is a semi-retired university lecturer who manages his own small coppice wood in Kent. In 2007 he set up his own consultancy, specialising in forestry and ecology issues