The implications of perceptions and cultural knowledge loss for the management of wooded landscapes: A UK case-study

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Abstract

Confirmed by an extensive international literature, forest landscapes reflect and influence community cultural history. As palimpsests of archaeology they provide evidence of former uses. Information about wooded landscapes, on the ground and in archives, relates to woodland and non-woodland activities. Ancient woodland landscapes preserve features relating to environmental factors and people’s activities. Human influences include: (a) those related to woodland and its utilisation and (b) those of non-wooded periods. Present-day woods were formed and influenced by both, not always equally, each site to some extent a unique living catalogue of landscape history. Evidence includes the woodland ecology, for example, botanical ‘indicators’ of antiquity or disturbance, the ‘archaeological features or finds’, and the field evidence of tree-forms (working trees) and earthworks. Intensive UK-based studies show the depth and diversity of people/woodland interactions, and that understanding of these landscapes and their drivers has changed over recent years.

There remain deep-seated problems of limited understanding of the interactions of culture and nature in these landscapes; ecologists and foresters often failing to see this. Archaeologists recognise built structures (‘monuments’) and ‘finds’ but overlook ecology and many earthworks. With Ecclesall Woods (100-ha case-study) the official archaeological information repository (The South Yorkshire Sites and Monuments Record) after visits by senior archaeologists and ecologists had four to five only ‘finds’ or ‘features’, the research described in this paper revised this to over 1000. Ecologists surveying the site considered it ‘typical inherently species-poor Coal Measures Series woodland’. However, this ‘typical’ and ‘natural’ vegetation is to a large degree an artefact of 500+ years of intensive human exploitation. Understanding these landscapes has been made more difficult by the rapid loss of local cultural knowledge about woodland management. These issues are exemplified and their consequences noted for a case-study in Sheffield, England.

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Keywords: Woodland case-studies; Cultural landscapes; Knowledge loss

1. Introduction and the Sheffield case-study

Intensive UK-based studies (e.g. Rotherham and Ardron, 2006; Rotherham and Jones, 2000a) show the depth of evidence and diversity of people/woodland interactions. During the 1980s, interest in British ancient woodlands grew with research and writing by woodland enthusiasts (Rackham, 1980, 1986; Peterken, 1981, 1996; Kirby and Watkins, 1998; Muir, 2005). This re-kindled interest and was paralleled across Europe (e.g. Agnoletti and Anderson, 2000; Agnoletti, 2006). Trans-national research exchanges were exemplified by meetings and publications (e.g. Kirby et al., 1998; Humphrey et al., 1998; Rackham and Moody, 1997; Grove and Rackham, 2003; Laszlovsky and Szabó, 2003). Woodlands are important living catalogues of landscape history (Jones, 1996, 1997, 1998; Jones and Walker, 1997). Despite this interest there remain deep-seated problems in understanding culture and nature in these landscapes (Rotherham and Ardron, 2006; Rotherham and Jones, 2000a). This paper draws on 30 years research into regional woodlands, and considers issues of cultural knowledge loss. It recognises but does not review extensive literature. Understanding complexity is important to appreciate and conserve woodlands. It is suggested that although recognition of these multi-faceted landscapes has generated some educational and recreationally based conservation programmes, there are serious management issues. Twenty-first century wooded landscapes are often severed from both their natural and cultural origins; in the UK their main economic drivers are now tourism and recreation (Graham
Haddock, Forestry Commission, personal communication). There are on-going academic debates on the nature of ‘natural’ woodland in Europe, and this is pertinent to issues in this paper. This paper advocates that these are cultural landscapes or multi-layered palimpsests of human interactions with nature. Regarding them as ‘natural’ or their archaeological interest as restricted to built ‘monuments’ are both misguided and unhelpful.

English wooded landscapes result from millennia of human/environmental interactions. In a European context England is relatively poorly wooded (Rackham, 1986; Rotherham and Jones, 2000a,b); surviving semi-natural woodlands relatively small and vulnerable to clearance and neglect. Woods over 50 ha are uncommon, and over 100 ha rare. South Yorkshire’s 333 ancient woodlands cover 2.8% (4451 ha) of the land surface (Eccles, 1986); only one exceeds 200 ha, four are 100–200 ha, five 50–100 ha and 157 (47%) below 5 ha. South Yorkshire’s woodland ecologies have been affected by active management and periods of abandonment; reflecting changed function, ownership, economics, cultural and social importance, plus urban and industrial impacts. Rotherham and Jones (2000a,b) considered social, political and economic drivers of change in this landscape, and Rotherham and Ardron (2006) discussed knowledge loss. Their ecology has been influenced by successive regimes of wood-pasture, coppice-with-standards and high forest.

Urban influences have been profound with significant disturbance. Sheffield (South Yorkshire, England) makes an informative case-study, with nearly a hundred ancient woodlands sites managed for 7–800 years as traditional coppice-with-standards woods, and well-documented history (e.g. Bownes et al., 1991; Jones, 2003; Rotherham and Jones, 2000b; Anon, 1987). Forest products included constructional timber and underwood for charcoal and whitecoal for metal smelting and working. These woodlands fuelled the region’s industrial revolution, providing energy and materials, uses that declined from 1850 to 1910, with conversion high forest plantations and ultimately local authority-owned, amenity woods, many locked into urban areas. This paper develops the themes and addresses serious impacts of local cultural knowledge-loss.

Traditional coppice woodlands declined rapidly. Map and archive evidence showing piecemeal conversion to plantation high forest from the mid-1800s by owners of large estates, and site loss or abandonment (through urban spread or farming). This continued until the 1930s with woods lost to urban development, abandonment and passed to local authorities for recreation and amenity. From the 1920s to 1980, local authorities purchased many ancient woods for community benefit, managed until the 1990s by a workforce of 20–30 in part commercially. The status and functions varied though the twentieth century, depending on whether they were managed as ‘amenity’ or ‘recreational’ woods (largely abandoned), or as a productive estate. For the latter they were often planted with exotic conifers to replace native broadleaves, or were new plantings of beech, sycamore or conifers. In all cases, the traditional woodland or forest management stopped early in the century or at the latest by the 1950s. These local authority-owned estates were more-or-less intensively drained, the amenity woods having periods of rigorous safety and tidiness management. There were significant examples of replacement by exotic trees and under-planting exotic shrubs. During the same period increasingly towards the late twentieth century woods were actively invaded by alien plants and cultivars from gardens.

Fig. 1. Charcoal burner’s hut, Sheffield early 1900s.
centuries of industrial coppice removed these. Since for the public ancient trees are big, and in Sheffield there were very few, it seemed these woods could not be ancient. Some of the oldest trees are actually smaller species such as Holly clones or Rowan coppices; not what people expect. Yet palimpsests of archaeological evidence bear testimony to usage, sometimes sustainable, other times not, over millennia. Relicts of former management, a 'singly' coppice or 'elephant’s foot', are unique archives of woodland and landscape history, easily lost through uninformed management. The impacts of cultural uses are deeply embedded in woodland, with changed ecology, hydrology and pedology; an interesting archaeological resource. From 1960 to 1980, regional woodland management reflected this misunderstanding and recreational park management prevailed.

Research including detailed site-based case-studies changed understanding of these cultural landscapes. Scoping, surveys and information-exchange across the UK, Europe and the USA, confirm close parallels. There is interest in conserving and recreating past uses, at least for demonstration purposes; woods and forests considered of social and economic value. But recognition of their cultural significance is limited, and definitions of what is cultural, archaeological or ecological remain problematic (Rotherham and Ardron, 2006). This results in lack of effective protection for archaeology, and low awareness of changed soils and vegetation from the 'natural' forest. Archaeologists tended to recognise and protect archaeology ‘in’ the woods, focussing on ‘monuments’. They generally overlooked archaeology ‘of’ the woods: ‘working’ and other culturally significant trees, pits, platforms, boundaries and other features. Additionally, because wooded landscapes often avoided intensive and destructive impacts of twentieth century cultivation (in farmed areas) and construction (in built areas), they frequently hold valuable evidence of former human occupation and activities. The Sheffield case-studies have ‘monuments’ and ‘finds’ from the late Neolithic onwards (Rotherham and Ardron, 2001); rich cultural landscapes.

With renewed interest in woodland histories in Britain, there have been moves to re-instate native, broadleaf tree species. There have also been demonstration projects and targeted conservation programmes of ‘traditional’ management. This parallels increased recognition of the benefits of wooded landscapes for public health (Crowe, 2001), ecosystem functions and local economic values (house prices and desirability for residence) (O’Brien and Claridge, 2002). However, despite the increased interest in, and awareness of, wooded landscapes, understanding and knowledge of traditional management and cultural origins have declined. At the same time, there have been attempts to broaden ‘value-bases’ for woodland management (e.g. Helliwell, 1992), and influences of perception in determining management priorities (e.g. Hare, 1988).

To be sustainable future visions of Europe’s forests need to take account of multi-faceted wooded landscapes. For this it is important to recognise, identify and assess typical processes, landscape evidence and regional distinction. Across Europe there is on-going research at many centres and it is important that findings are shared to foster wider appreciation. This aids recognition of the importance of forest archaeology and history to inform visions of future sustainable forest landscapes, a process supported by the European Cultural Forest Network.

2. Objectives and methodology

This paper assesses changed attitudes to woodlands and awareness of them in the case-study region. This is in the context of cultural knowledge loss examined through the Ecclesall Woods case-study. The primary objectives for the research were to develop a more holistic understanding of the drivers of change in wooded landscapes. The studies were to inform future woodland management. An objective was to consider cross-disciplinary language used to document and describe these landscapes. In the UK for field archaeologists this is the contemporary version of MIDAS—A Manual and Data Standard for Monument Inventories (Anon, 1998), the current professional thesaurus. Comments were made on the system (Rotherham and Ardron, 2006). Along with detailed searches of archival materials and published literature (Rotherham and Medforth, 1997) on woodland and forest management, oral histories were gathered from local woodworkers and foresters. Changes in approaches and attitudes were observed and assessed over a period of around 25–30 years using action research and ethnological approaches as described.

This exercise in long-term information acquisition was achieved through mixed methodologies, with the potential to triangulate multi-disciplinary findings and give confidence in the outputs. The studies combined long-term field-studies (detailed ecological and archaeological site surveys with GPS and GIS mapping, and experimental site management and ecological monitoring; Vickers and Rotherham, 2000), social case-studies, archival materials, oral histories and action research. These were placed in a context of social, economic and political changes and drivers over the period considered. Detailed time-lines for wooded landscapes in the study region (Fig. 2) including the main case-study (Ecclesall Woods, 2001); rich cultural landscapes.
Sheffield) have been developed for a period of around 4000 years. However, this paper relates to cultural knowledge loss and its implications, so only summaries of the detailed case-study over the last millennium are presented (Table 1). However, the reader should be aware that surveys confirmed human occupation from Late Neolithic and Bronze Age (major hilltop enclosure, Romano-British field systems, cup-and-ring marked stones, flint finds, lynchets). The core study area is around Sheffield in South Yorkshire, extending into north Derbyshire, north Nottinghamshire and the Peak District. There are four main case-study sites (Fig. 2): Ecclesall Woods, Sheffield (SK 320 825); Gleadless Valley Woodlands, Sheffield (SK 366 835); Grimethorpe Woods, Barnsley (SK 425 085); Upper Moss Valley Woodlands, Derbyshire (SK 375 805).

The main study-site reported here for which detailed surveys were undertaken and computer-generated maps produced is Ecclesall Woods. Each site or site-complex had a scoping evaluation followed by a detailed site survey: landscape archaeology and ecology; geology and soils, and archival research. Work in Ecclesall Woods included GPS location

<table>
<thead>
<tr>
<th>Table 1</th>
<th>An example: post-domesday Ecclesall Woods, Sheffield: a selective time-line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>Landscape condition</td>
</tr>
<tr>
<td>ca. 4000 BP onwards.</td>
<td>Open landscape with farming, grazing, habitation and woodland in wet areas and along streamsides</td>
</tr>
<tr>
<td>The early landscape and its evidence</td>
<td></td>
</tr>
<tr>
<td>Pre-1300 A.D.</td>
<td>Farmed agricultural landscape close to open heathy commons and riverside meadows</td>
</tr>
<tr>
<td></td>
<td>Extensive evidence of settlement and use:</td>
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<tr>
<td></td>
<td>Late Neolithic/Bronze Age Enclosure;</td>
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<tr>
<td></td>
<td>Romano-British Field systems; Double orthostat walls; boundary features;</td>
</tr>
<tr>
<td></td>
<td>cup and ring marked stones; flints; plough-marked stones; settlement sites</td>
</tr>
<tr>
<td>1317 A.D.</td>
<td>Robert de Ecclesall—granted licence to impark the area. Hunting of deer and other game including a rabbit warren</td>
</tr>
<tr>
<td>1500s–1600s</td>
<td>Industrial coppice-with-standards for underwood—whitecoal and charcoal; and for timber. Whitecoal and charcoal needed for lead smelting and other metal-working</td>
</tr>
<tr>
<td>1700s–1800s</td>
<td>Changing technology in lead smelting; loss of need for whitecoal manufacture, continuing industrial charcoal production</td>
</tr>
<tr>
<td></td>
<td>Surface mining of mineral coal</td>
</tr>
<tr>
<td>Mid-1800s–1900s</td>
<td>Extraction of ganister for furnaces and smelting industries</td>
</tr>
<tr>
<td></td>
<td>Creation of wooden-tracked railways</td>
</tr>
<tr>
<td>Early-mid-1900s</td>
<td>Massive air pollution with fallout of around 3.35 t of grit and grime deposited per square mile per week in 1920s</td>
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<tr>
<td></td>
<td>Consequent acidification of remaining soils</td>
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</table>
mapping and data-logging, with GIS mapping of finds, features and vegetation. Subsequent analysis involved interrogation of the GIS maps Fig. 3 presenting a sample of the mapping output showing linear features. Other sites were mapped manually (Rotherham and Nicholls, 2001). Full datasets and interpretation are in the technical report (Rotherham and Ardron, 2001) and lodged with the South Yorkshire Sites and Monuments Record. Core sites had detailed surveys to over-lay and compare woodland ecology, woodland landscape archaeology, soils, hydrology and known management drivers. The site maps were the basis of research dataset interrogation. For Ecclesall Woods distribution maps of botanical indicator species were produced. Manchester University and the Peak National Park Archaeology Service provided specialist archaeological support to validate the Ecclesall Woods ‘finds’ place them in a regional and national framework. This suggested the surveys successfully identified 75–85% of the archaeological resource. The English Heritage regional office commented on the significance of the findings indicating they considered the Woods to be of at least regional and perhaps national significance as a ‘type site’. The lack of base-lines for comparison was noted.

Interviews were held with experienced archaeologists across the region and nationally to establish the background levels of professional archaeological recognition of woodland archaeology. To support this, when the GIS maps were produced for Ecclesall Woods and the work prepared to be passed to the regional archaeological advisors (South Yorkshire Archaeology Service), the standard terminology for feature recognition and recording was investigated by testing the nomenclature in the current MIDAS manual. The findings from the different approaches were triangulated and placed in a context of social, economic and political changes and drivers over the time-period. The summary results of the detailed case-study at Ecclesall Woods (Sheffield) are presented (Table 1). Based on the regional study, the drivers of change and their impacts are presented (Table 2).

The detailed case-study was the subject of a national conference in 1992 (Beswick and Rotherham, 1993), and

Table 1 (Continued)

<table>
<thead>
<tr>
<th>Dates</th>
<th>Landscape condition</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-1900s–late 1990s</td>
<td>Continuing urbanisation and threats of felling and ‘parkification’ (1970s). Proposed felling and re-planting with exotics for ‘amenity’ resulted in massive public outcry and the establishment of an ‘Amenity Woodlands Advisory Group’ by the City Council</td>
<td>Spread of exotics, and recovery of ancient woodland ground flora. Increase in high forest birds and loss of open forest or heath species</td>
</tr>
<tr>
<td></td>
<td>Many more visitors and dog-walking</td>
<td>Assumed increase in nitrogen levels in soils</td>
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<tr>
<td></td>
<td>Increased atmospheric fall-out from road traffic but declining smoke pollution from industry and housing.</td>
<td>Spread of Sycamore and then later of Norway Maple</td>
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<td></td>
<td>Increased in micro-disturbance and fly-tipping of litter, plus encroachments into woods by adjacent domestic gardens</td>
<td>Loss of dead wood as a tidiness measure</td>
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<tr>
<td></td>
<td>Closure of local authority-owned Sawmill</td>
<td></td>
</tr>
<tr>
<td>Late 1900s–early 2000s</td>
<td>Establishment of local community ‘Friends Group’.</td>
<td>Continued spread of exotics, and recovery of ancient woodland ground flora. Loss of Elm (Ulmus sp.) to Dutch Elm Disease</td>
</tr>
<tr>
<td></td>
<td>Experimental conservation management</td>
<td>Further spread of Sycamore, Norway Maple, Sorbus sp. and Highclere Holly (Ilex)</td>
</tr>
<tr>
<td></td>
<td>Glades plus non-intervention areas, and then experimental coppice</td>
<td>Decline of some exotic plants in some areas due to selective controls</td>
</tr>
<tr>
<td></td>
<td>Footpath, access and interpretation work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘Weed’ control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Site still getting drier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recognition of historic landscape and its importance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First funded research programmes and development of management plans. Abandonment of experimental coppice after less than 10 years</td>
<td></td>
</tr>
</tbody>
</table>

Major threat including loss of 90% of site to housing development and roads averted here but not elsewhere.

Fig. 3. GIS map of linear features in Ecclesall Woods.
Table 2
Social, economic and political drivers of the wooded landscapes of South Yorkshire, England over around 1000 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Economic driver</th>
<th>Political driver</th>
<th>Social driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>1086 A.D.</td>
<td>According to the Domesday Book around 15% of the area was wooded. Over 95% of the woodland was wood-pasture. Land had been cleared for arable, meadow and grazing</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Woods grazed by deer, cattle, sheep and horses. Many ranging over unenclosed commons, waste, moor and chase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 1250 to 1325 A.D.</td>
<td>there were 44 grants of free warren; and between 1200 and 1441 A.D. there were 70 more</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Woods as canopy high forest and then coppice-with-standards preserved within demesne lands; and old trees such as pollards protected in enclosed deer parks and chase (such as Rivelin Chase and Wharncliffe Chase)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1421 A.D.</td>
<td>First records of coppice-with-standards management</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1550–1800 A.D.</td>
<td>The ‘golden age’ of coppice-with-standards management</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Surviving woods protected by banks and ditches, and walls and hedges or fences. Grazing animals only allowed into woods in middle or later stages of the coppice cycle. Particular tree species favoured by the woodwards, especially oak, hazel, holly and alder</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coprice management results in regular opening of the canopy and light input every 15–20 years depending on the cycle. This along with the micro-scale disturbance of management allows the development of the characteristic ancient woodland ground flora</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Ground flora and soils extensively disturbed as coppice, charcoal and whitecoal industries become increasingly industrial scale, and woodlands are ‘de-turfed’</td>
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</tr>
<tr>
<td></td>
<td>There was widespread and long-lasting lead pollution of soils across the region</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Woodland soils were stripped for covering charcoal burns and typical ancient woodland vegetation much reduced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From around 1600 A.D.</td>
<td>there was rapid disparking of deer parks (with some incorporated into grand landscape parks), and gradual extinction of chases through agricultural intensification (e.g. Rivelin Chase) or drainage and then agriculture (e.g. Hatfield Chase)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Deer probably generally extinct in the wider landscape, and lost from deer parks and chases, and maintained in ornamental deer parks in landscaped areas around country houses. The exception is Wharncliffe where the ancient herd is maintained until the mid-twentieth century and then forms the nucleus of a feral herd of Red Deer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 1775 A.D.</td>
<td>lead was produced in coal-fired cupola furnaces and iron in coke-fired blast furnaces. The markets for whitecoal disappear and for charcoal are much reduced</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>From 1750 to 1830 A.D.</td>
<td>Parliamentary Acts of Enclosure remove almost all wooded common. Tiny fragments remain but today are often unrecognised for what they are</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The last coppice in Ecclesall Woods is around 1850</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By around 1900 A.D. almost all coppicing in the region has ceased.</td>
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<tr>
<td>There are still charcoal burners and gamekeepers at Parkwood Springs in Sheffield, but within the next 10–15 years the woodland and all of its workers has been removed. Two tiny areas of coppice remain today</td>
<td></td>
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<tr>
<td>Some small woods in the Gleadless Valley were still coppiced into the 1950s by the local farmer/landowner, but this ceased when the area was compulsorily purchased for urban expansion of Sheffield, and the farm and hall were demolished</td>
<td>✓</td>
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</tr>
<tr>
<td>Late 1970s–early 1990s saw massive conversion of traditional coppice-with-standards woods to high forest</td>
<td>✓</td>
<td></td>
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<tr>
<td></td>
<td>Coppice declines steadily after 1800, and increasingly after 1825. Gradual conversion to high forest utilising both natural regeneration and selection thinning, and re-planting. Coppice stools neglected, physically removed, or ‘singled’ to form a canopy tree Exotic conifer and broadleaved trees widely planted and many naturalise; in both ancient woodland sites and in new plantations. The first major post-industrial restoration plantations are established on former ironstone workings</td>
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</table>
findings presented on this and other study sites at major meetings in the UK and elsewhere in Europe (Rotherham, 1996; Rotherham and Avison, 1998; Rotherham and Jones, 2000b). Issues were also debated through the UK national network the Landscape Conservation Forum, and following a major European-wide conference held in Sheffield in 2003 (Rotherham and Handley, 2003), tested across the UK by an on-going programme of academic and practitioner workshops; around 30 held so far. The community and volunteer part of this is the Woodland Heritage Champions project, running in conjunction with the Woodland Trust, the Forestry Commission, the Heritage Lottery Fund and the Ancient Tree Forum. Scoping studies and information exchanges have occurred with Poland, Ukraine, Romania, Turkey, Italy, Ireland,
Scotland, Wales, France, Holland, Germany, Sweden and the USA.

There is on-going research to analyse site information and develop a handbook to woodland archaeological features at a UK national level. This is with the Woodland Trust and the Forestry Commission, and observations have been made at a number of sites across Europe. In 2006, the European Cultural Forest Network facilitated by the Biodiversity and Landscape History Research Institute (Sheffield, UK) was established to foster this exchange of information and ideas.

3. Results

3.1. Sheffield area case-study: changes and loss of cultural knowledge

By 1970 all local memory of traditional uses, functions or origins of the region’s woods had gone. With oral traditions lost, some technologies and processes remained undocumented and enigmatic. This trend in the study region mirrors those described earlier, but is perhaps more acute due to intensive industrialisation and urbanisation. Remarkably, Sheffield itself remains one of the most richly wooded industrial cities in north-western Europe (80+ ‘ancient’ woods); largely due to industrialist landowners protecting woods for vital coppice production (Jones, 2003; Perlin, 1989). Yet contemporary managers and conservationists often fail to understand how these woods were changed by management as industrial coppice (Rotherham and Jones, 2000a,b; Rotherham and Ardron, 2006).

3.2. Drivers of change and a shared history

For Britain generally, and the case-study region specifically, a new appreciation of woodlands and especially ancient woodlands emerged in the 1980s. But what does this mean in terms of conservation and continuity of management? Understanding the nature and drivers that shape these landscapes has emerged and changed over the last 20 years. Rotherham and Jones (2000a,b) discussed these for South Yorkshire. Mills (1994) presented an overview of forest landscape history for the nearby West Yorkshire region, and related the trends to utilisation and traditional crafts. It is important that these drivers and their impacts are taken into account if future woodland management is to be sustainable. The process of action research allowed the team to engage directly with woodland management policy. The researchers sat on review panels and assisted policy formulation. Interviews with local authority officers and others, and observation of their changing awareness and perceptions, allowed in-depth appreciation of critical issues. The researchers also helped facilitate public meetings and community engagement over a period from 1980 to 2005. By the 1980s, many woods across a wide area had received almost no active management over the period 1920–1970. Where work had taken place it was ‘care and maintenance’ and amenity/recreation ‘improvements’ such as drainage of wet areas and the introduction of large numbers of exotic tree and shrub species.

Observations confirm the changed understanding of the nature of these landscapes and of drivers that shaped them. Rotherham and Jones (2000a,b) discussed some of these for South Yorkshire, and it is helpful to recognise them and their impacts. As the research widened to include studies across the UK and internationally (described earlier) similar trends and evidence have been identified. There may be differences in detail and in the timing of particular processes or events, but there are common, underlying principles. Yet, as described earlier there are still serious issues of limited recognition of the cultural significance of woodland. This even extends to lack of recognition or scheduling as ‘monuments’ the cultural earthworks and associated ecologies (such as working trees) of woods. We have argued that culturally significant and ancient ‘working trees’ (for example, 3000-year old Limes (Tilia cordata) coppices in the Lake District (Pigott in Beswick and Rotherham, 1993), or veteran Olives (Olea europaea) in the Mediterranean (Rackham and Moody, 1997)), should be considered as ‘monuments’ by archaeologists, and thus afforded appropriate protection. But with ‘working’ and other culturally significant trees frequently overlooked (by ecologists and archaeologists) and consequently mismanaged by foresters, there is a lack of protection for this cultural archaeology. Furthermore, our observations confirm a low awareness of changed soils and vegetation from what might be considered ‘natural’ forest landscapes. Table 1 summarises the detailed case-study.

3.3. Ecological trends

The case-study demonstrates major shifts in site ecological character; changes occurring over several millennia associated with different phenomena. This paper focuses on the last 1000 years during which time there are key changes:

- Eutrophication from atmospheric nutrient fallout and decreased limited removal of biomass compared with a coppice wood.
- Successional change following canopy closure, competitive effects, lack of micro-disturbance from woodland workers and their animals and macro-disruption including recreational impacts.
- Removal of topsoil and vegetation for charcoal manufacture.
- Decline in dead wood and associated species.
- Response to long-term trends of environmental change.
- Destructive but localised winter grazing of farm livestock.
- Urbanisation impacts.
- Socio-ecological impacts with planted trees, theft of attractive herbs, and introduction of garden throw-outs, plus nutrient inputs.
- Boundary incursions into woods from adjacent houses.
- Disposal of ‘green waste’ from adjacent houses, including propagules of exotic species.
- Housing close to woods leading to demands for removal of trees.
These are discussed in more detail elsewhere with work ongoing key trends are noted to establish impact range and magnitude.

3.4. Hydrological trends

Major studies of the impacts of urbanisation on woodland hydrology were undertaken in the study region (Griffiths et al., 1995, 1996; Griffiths and Rotherham, 1996a,b). All these woods suffer desiccation and drought, detailed case-studies confirming the main agents of de-watering:

- Woodland internal drains still active and desiccating; many actively maintained and even enhanced during the twentieth century amenity woodlands phase.
- Continuing drainage maintenance associated with recreational and amenity uses and perceptions of an urbanised population.
- Urbanisation and ‘water theft’ have left woods as isolated islands of habitat; now more or less surrounded by development and roads, services and drains sunk into trenches and beds of aggregate. Soft surfaces extensively replaced by tarmac and concrete.
- New urban developments impacting on surface drainage.

Despite policies on hydrological sustainability in both urban and rural areas, there is little positive action and desiccation continues. In the regional study wooded landscapes, urban and rural, all suffer water-loss. The sites often severed from cultural and environmental origins, survive as isolated habitat-islands in often inhospitable landscapes. Long-term drought is responsible for significant ecological trends away from their ancient woodland origins with many woodland indicator species now isolated and vulnerable (Bownes et al., 1991).

3.5. Cultural landscapes: perceptions and approaches

An important issue to emerge is landscape perception. There are major problems of misconception and key issues of the degree to which woods are ‘natural’. It is increasingly obvious that they are not but many people, both amongst the public and still some professionals, think they are. We have moved locally from a point where nobody believed that the woods were ‘ancient’ (existing as woodland prior to 1600 A.D.), to a belief now that ancient woods link to ‘primeval woods were ‘ancient’ (existing as woodland prior to moved locally from a point where nobody believed that the obvious that they are not but many people, both amongst the degree to which woods are ‘natural’. It is increasingly

There are major problems of misconception and key issues of urbanisation with many woodland indicator species now possible for significant ecological trends away from their ancient woodland origins with many woodland indicator species now isolated and vulnerable (Bownes et al., 1991).

3.6. Cultural impacts

A major consequence of utilisation is dead wood loss, both standing and fallen, on living and dead trees (Kirby and Woodell, 1998; Read, 2000; Speight, 1989). This has major implications for many taxa considered important in ancient woods, and is recognised at a Europe-wide level. The EEC Committee of Ministers Recommendation Number R (88)10 ‘On the Protection of Saproxylic Organisms and their Biotopes’, set a policy standard across the Community. It is worth comparing modern woodlands and those in medieval times or unmanaged forest. Following decades as tidy woodlands sites are depleted compared with more ‘natural’ forests; a consequence of Victorian foresters and twentieth century amenity woodland managers liking clean, tidy woods. Observations also suggest the public favour clean, tidy woods; bad news for dead wood, wildlife and history. The intensive, economically driven management of many contemporary woods in the regional study occurred over periods of between 150 and 350 years, supplying emerging mining and metal-based industries. This was often followed by 100–150 years of abandonment or amenity recreation management. However, whilst the woods were not ‘managed’ as such for woodland products, the philosophy was still of clean, tidy woods with clean, tidy trees. The mentality of the park-keeper dominated; implemented by teams of urban tree officers. This history over 250–500 years is now well-established and left woods impoverished in dead and decaying wood.

According to published figures (Kirby and Drake, 1993; Kirby et al., 1998) levels are probably reduced to less than 5% of that in ‘natural woodland’ and less than 15% of that in traditionally managed woods. More recent concepts of the nature of traditional forests (e.g. Peterken, 1996; Vera, 2000) may lower these figures. In the regional study and case-study sites, Sheffield City Council took a positive stance on this with ideas of non-intervention woodlands and enhancing the ‘naturalness’ of woods in the 1980s leading to the Sheffield Woodlands Policy (1987). This changed protocols in managing the portfolio of urban ancient woodlands, stating the Authority would implement policies and proposals to address these issues. The Sheffield Nature Conservation Strategy (Bownes et al., 1991) noted the importance of ancient woodlands and the regional scarcity of trees over 200 years, and the Local Authority confirmed active support for European guidance on saproxylic insects as a European conservation priority. This was laudable but there has been only limited action. Some local authorities maintain dead wood with fallen and standing trees, and brash piles left after forestry works, but there is limited wider application of these approaches. On-going action research indicates very limited positive non-intervention and sporadic retention of dead wood to increase ‘naturalness’. There has undoubtedly been some increase in dead wood, but without effective monitoring by the agencies, impacts are unclear. Worryingly, local community surveys suggest limited understanding of the benefits of dead wood retention or of measures such as brash piles, etc. Often these are seen by the public as cost-cutting by woodland managers and local authorities. Promoted by local entomologists and
ornithologists, non-intervention zones were identified and agreed in the Sheffield Woodlands Policy (1987) but seem to have fallen from favour.

As noted, water in the woods has been severely affected by human activity. One aspect not developed here, is the almost total loss of formerly extensive valley-bottom wet woodlands; a widely recognised phenomenon across the UK. Accounts from remaining woods suggest former wetness; woodland owners and managers in the 1700s and 1800s obsessed with drainage. Owler Car Wood (Moss Valley) and Ecclesall Woods have extensive drainage networks and are now desiccated. De-watering continued through the 1900s and the amenity woodland period with added and catastrophic effects of urban development and intensive arable farming. As yet there are no attempts to remediate these impacts.

3.7. A summary of the evidence of human activity in ecclesall woods

3.7.1. The impacts of charcoal and whitecoal production in woodlands

Intensive site surveys and mapping revealed major loss of vegetation cover and of topsoil. This impact of woodland topsoil- and turf-stripping for charcoal production (Figs. 4 and 5) was first described by Rotherham and Doram (1990) and Hart (1993). Impoverished woodland ground flora suggested links between charcoal and whitecoal production, and both topsoil and species loss. The scale of this impact along with the implications for woodland vegetation was previously overlooked. Since the original observations the extent of charcoal and whitecoal production in local woodlands, and their associated impacts have been further described (Ardron and Rotherham, 1996). Combined impacts of whitecoal (kiln-dried wood used in post-medieval lead smelting) and charcoal production on woodland soils and vegetation are potentially very significant. Areas unaffected had well-developed soil ‘A’ horizons, neutral or slightly acid, characterised by typical ancient woodland indicators: *Mercurialis perennis* (dog’s mercury), *Lamium galeobdolon* (yellow archangel), *Anemone nemorosa* (wood anemone), *Allium ursinum* (ramsons), *Galiun odoratum* (woodruff), *Sanicula europea* (sanicle), *Stellaria holostea* (greater stitchwort), *Veronica montana* (wood speedwell), *Circaea lutetiana* (enchanters nightshade), *Melica uniflora* (wood melick) and *Milium effusum* (wood millet). Woodland areas affected by intensive ‘coaling’ had thin ‘A’ horizons and pH 3.5–4.5, typical plants included: *Holcus mollis* (creeping soft-grass), *Rubus fruticosus* agg. (bramble), *Lonicera periclymenum* (honeysuckle), *Deschampsia flexuosa* (wavy hair-grass), *Pteridium aquilinum* (bracken), *Dryopteris dilatata* (broad buckler fern), *Hyacinthoides non-scripta* (bluebell) and *Luzula pilosa* (hairy woodrush).

It was recognised that ‘kilns’ were constructed on heath surfaces (sometimes called pitsteads) but descriptions were limited. Hart (1993) noted faint bowl-type earthworks and others (e.g. Crossley, 1993) the occurrence of platforms; descriptions were limited. Hart (1993). Impoverished woodland ground flora suggested formerly extensive valley-bottom wet woodlands; a widely recognised phenomenon across the UK. Accounts from remaining woods suggest former wetness; woodland owners and managers in the 1700s and 1800s obsessed with drainage. Owler Car Wood (Moss Valley) and Ecclesall Woods have extensive drainage networks and are now desiccated. De-watering continued through the 1900s and the amenity woodland period with added and catastrophic effects of urban development and intensive arable farming. As yet there are no attempts to remediate these impacts.

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is well-known from post-medieval documents (Jones, 2003). Since many ancient woodland ‘indicator’ plants and animals require both continuity of woodland cover and lack of major disturbance they have suffered through these long-term activities. Some plants like such as hairy woodrush (Lizula pilosa) are associated with small-scale, localised disturbance around Q-pits.

3.7.2. Drains and ditches and banks

Ditches, drains and banks are widespread in the case-study sites; woods often permeated by drainage networks, both artificial cuts and modified streams. These may originate in medieval coppice phases and enhanced in later industrial times, and the Victorian high forest period. Dating these is not easy as they vary from minor alterations of natural streams, to significant, constructed, stone-lined structures. Some were previously assigned as coppice or other management compartment boundaries, but detailed mapping does not support this. They probably originated over long periods as land improvement for woodland production; the earliest in the case-study woods probably from the fifteenth and sixteenth centuries, imposed in the developing coppice system. Some may be much earlier perhaps Romano-British and associated with now recognised settlements and field systems. The most intensive imposition of drains was during the late eighteenth and nineteenth centuries for land improvement that occurred widely in wooded landscapes.

When Ecclesall Woods was taken into local authority ownership in the early twentieth century, the drainage network was vigorously maintained; today most of the site is dry and free-draining. Small areas of species-rich vegetation such as ‘Mirey Wood’ remain reasonably intact, but affected by drains; and earlier wetness is indicated by relict Sphagnum floras (Ardron, 1997). Similarly, Owler Car Wood (meaning a ‘wet alder wood’) is now dry and has lost topsoil and organic deposits due to combined downwash and sediment degradation associated with drainage on conversion to coppice in the 1700s and 1800s. Impacts on these woods have been considerable with only small areas remaining wet. Effects on woodland ecology are significant; with many plants needing wet, humid conditions they have suffered. Understanding drainage impacts is vital to effective landscape evaluation. For both nature and archaeological conservation, restoring wetness may be very desirable.

3.7.3. Boundaries, track-ways and other features

The case-study sites are extensively dissected by linear features. Along with ditches and drains these include a mixture of sunken tracks including packhorse routes and drovers’ ways, industrial tramways from nineteenth century ganister quarries, numerous minor paths and tracks related to woodland management and contemporary recreational route-ways. They have medieval wood-banks, early medieval deer park pales, possibly earlier administrative boundaries of regional significance, the site being located on the Kingdom boundary of Anglo-Saxon Mercia and Northumbria. One such feature perhaps originated as a marker of this significant political station, later incorporated into the medieval deer park. There are extensive lynchets, hedges and walls of varying forms, sizes and origins, with earth-fast boundary stones and double-orthostat walls. Within the woods are early settlement sites (Romano-British settlements and field systems, possible Anglo-Saxon farmsteads, Bronze Age and possible Neolithic sites), the latter including a topographically imposing hilltop enclosure. Adjacent to the latter is an intact Romano-British field system. Further research is needed to give more exact chronology.

There is a wide range of features related to early and later industrial use, including charcoal and Q-pits, saw-pits, bell-pits for coal and ironstone, mills and smelting sites for lead and iron manufacture. The woods were also important sources of stone from small-scale building-stone quarries to medium-scale ganister extraction for refractory materials. Ecclesall Woods contains numerous minor stone-getting holes, Romano-British quern-stone manufacture, and several large quarry workings. Each activity left often distinctive marks on the woods. Many point-features and locations are linked through networks of tracks, roads and boundaries. Some activities we know happened but are difficult to determine. Woodland craftsmen and their families must have spent much of their lives in the woods. They, probably with families and livestock were there for much of the year. However, apart from old photographs of charcoal burners’ settlements in the early 1900s, little evidence of their encampments remains; perhaps just the ghosts.

In the course of extensive research, numerous interviews were held with experienced local authority archaeologists. From this, and an examination of literature and handbooks for monument description, it is clear that this is a very under-appreciated subject. There is a lack of effective typology and of comparative site assessments necessary for conservation evaluation. There are almost no published diagrams, measured drawings, or excavation descriptions to help evaluate site finds, or to guide field workers. There are exceptions with descriptions of excavated Q-pits, and some plans of woodland boundaries; these apart, there is little available academic or professional literature. Features remain overlooked or misunderstood (Ardron and Rotherham, 1999).

Preliminary observations elsewhere in Europe suggest woods with similar heritage of landscape archaeological features relating to former management. Furthermore, discussions with researchers indicate lack of effective recognition is a serious problem. So far we have considered sites and exchanged information with senior researchers in Northern Italy, Turkey, Sweden, Ireland, Holland, Hungary, Rumania, Portugal, Spain and southern France. In all these there is similarity with the UK woodlands. Recent observations in Poland and Ukraine confirm that their extensive forests have rich but unrecognised woodland archaeology, with boundaries, bitches and banks, pits and platforms, and working trees. Much is partially masked by recent forestry activity.

3.8. The impacts of traditional and industrial uses for charcoal and whitecoal

One of the main impacts of industrial coppicing of these woodlands was extensive removal of vegetation and topsoil,
taken to cover charcoal clamp kilns (mostly for iron and lead smelting). In the cultural forest, we see the woodman through the trees; in relict coppices, in soil, vegetation and lack of water. This was first described for the case-studies in the early 1990s following collaborative ecological and archaeological studies. Until then it was widely assumed that the woodlands of the extensive Coal Measures Series geological region (Fig. 6) were inherently species-poor. This research demonstrated that absence of ancient woodland flora from much of the ground area of these sites was an artefact of around 500 years of intensive, industrial use. These impacts are compounded by, and themselves exacerbate, the hydrological impacts described earlier. The core woodland areas have extensive removal of topsoil, subsoil and vegetation; the latter now restricted to wet areas, stream-sides and ‘halo’ zones of deeper, un-stripped, brown-earth soil around the outer perimeter of the woods. These effects remained unrecognised until the research of the 1980s; surprising with the intensive, regional, botanical surveys of Sheffield University’s Unit of Comparative Plant Ecology from 1960 to 2000. However, the regional and site-based case-studies suggest the woodman has left an indelible imprint on the woods, along with loss of soil and loss of water.

The impacts may be surprising, such as the effect on the Grass Snake (*Natrix natrix*); local and uncommon in Sheffield, a Local Red Data Book Species. At Ecclesall Woods, it is at its western stronghold in the region probably because of the open, sunny nature of the former coppice woods, and associated warm piles of bark and woodchip. In this case, it is an ‘indicator’ of the medieval, working coppice wood. This parallels the occurrence of open-woodland bird species during the coppice phase and their displacement by high forest birds during the twentieth century (Rotherham and Medforth, 1997).

4. Discussion

4.1. What type of woodland?

Woodland management across Europe has changed over time; with varying balance between wood-pasture grazing and coppice or other uses. The spatial extent, the balances, interactions and drivers of change are still debated. However, over millennia a primeval landscape changed through human-driven utilisation with compartments, large and small, and long-term, often tradition management. Sometimes rights and ownership were vested in an individual or an estate (large or small), and sometimes held in common (De Moor et al., 2002). The exact mechanisms were complex, varying over time and from place to place. By the medieval period, wooded landscapes occurred in recognisable forms, broadly divided into wood-pastures, and woods or coppice; with perhaps limited or at least localised areas of natural, closed-canopy woodland.

Since Rackham (1980, 1986), it has been clear that wood-pasture was once widespread and common in north-western Europe. Essentially a landscape or system of land management where trees are grown, but with grazing by large herbivores (domesticated, semi-domesticated, wild or a combination). Wood-pasture in England is well-documented for over a thousand years; the Domesday Book (1086) recording a landscape in which this dominated. It has been suggested that managed wood-pasture evolved from grazed forest/savannah (Vera, 2000); an ancient system of management in multi-functional landscapes with plentiful woodland, and little need for formal coppice. Woodland coppice management is a more intensive and rigorous system ensuring vital supplies of wood and timber in a resource-limited landscape (Fowler, 2002; Hayman, 2003; Perlin, 1989). Analysis suggests pasture-woodland is the older, more ‘natural’ system. Significantly, most livestock, wild or domesticated, prefer leaf-fodder to grazing (Vera, 2000).

Today’s landscapes of woods, parks and forests (as found across the case-study region) grew from medieval landscapes mixing trees and grazing or browsing mammals; including wood-pasture and wooded commons. These were relics of prehistoric wooded savannah by medieval times having coppice woods, holts, hags and hollins embedded within them, managed to produce particular woodland materials (Jones, 2003). Both types of wooded landscape were characterised by ‘working trees’ including pollards, stubs and coppice stools in protected ‘woods’. By the 1700s and 1800s many were affected by two major drivers. First was the imposition of formal estates and...
grand landscape parks for the aristocracy; reflecting status and offering recreation. Second was industrialised, plantation forestry. In regions like South Yorkshire (England), these fuelled emerging industries, producing wood charcoal for smelting and later pit-props for coal-mines (Rotherham and Egan, 2005). An important issue from our research and debates around Vera’s thesis (Vera, 2000) is the balance of ‘culture’ and ‘nature’ in these landscapes. This was discussed at key meetings (e.g. Working and Walking in the Footsteps of Ghosts 2003 (Rotherham and Handley, 2003); Crisis and Continuum in the Shaping of Landscapes 2005 (Rotherham, 2005a)), and in related publications (Rotherham, 2003; Rotherham, 2005a; Hodder et al., 2005). Rackham (2003b) examined Vera’s work noting the need to consider context and diversity in forested landscapes and human impacts across Europe. He highlighted savannah in Europe suggesting it to be a Mediterranean feature, adding the need to consider eastern European landscapes too. It seems reasonable that ancient deer parks, medieval forests and other grazed, wooded landscapes are the most ‘natural’ forested areas in Western Europe, with valley-bottom wet woodlands where they survive. However, it also seems fair to suggest the typical ‘ancient’ woodlands found throughout lowland England and our case-study region, are strongly ‘cultural’ landscapes. In the case-studies, it is this cultural landscape of medieval and then industrial coppice woodland that is most significant, though not exclusively so. The described cultural knowledge loss and the archaeological surveys relate mostly to this type of wood; the region having extensive heaths, moors, relict deer parks and medieval chases described elsewhere (Jones, 1996; Rotherham, 1999).

4.2. Landscape change and knowledge loss

The changes as described fragmented earlier landscapes, weakened, changed or removed social systems and common rights tied to environmental resources; generating today’s woodlands. As industrial demands were replaced by other technologies, and rural traditions lapsed, woods were abandoned, or management intensified through twentieth century agro-forestry (Fowler, 2002; Hayman, 2003). By the late twentieth century in countries like England, the economic driver for woods and forests was not primary production of timber and wood, but tourism and recreation. However, economic benefits from such landscapes often don’t relate to forest management. The wooded landscape is considered a ‘natural’ backcloth taken for granted that will care for itself. This is clearly not so and historic perspectives most-effectively demonstrate long-term social and economic drivers in wooded landscapes.

Where traditional management ceased between 100 and 150 years ago (as in South Yorkshire) almost all local knowledge of forest-use from earlier times has gone. Recent observations in Roztoczański Park near Zamość in Poland support this. The forest has archaeological evidence of former woodland crafts and management: charcoal hearths, potash pits, boundary features, relict coppice and other working trees. Interviews with local forest rangers revealed little knowledge of archaeology or traditional management; but confirmed charcoal last manufactured around 100 years ago. Issues and consequences of the lack of awareness of woodland archaeology and implications for contemporary management were addressed by Rotherham and Ardron (2006).

5. Conclusions

Where does this leave these cultural, semi-natural landscapes? It is suggested that it is important to recognise, identify and assess typical processes and evidence in woods and forest, and factors of regional distinction are of particular interest. Research is carried out and information exchanged across Europe fostering wider appreciation of woodlands. Modified for economic use, woods have been managed often continuously for many years. As a consequence of the research over the last 30 years, Sheffield is now noted in England for its old woodlands; Rackham (2003a) writing of the ‘Sheffield school of woodland history’. Yet the region has few obviously veteran trees, causing confusion, in old woods, people expecting old trees. Mostly managed as industrial or rural coppice-with-standards, the woods were worked, used and extracted; veteran trees surviving on boundaries, track-ways, and in parks and commons. Remaining woods were affected by Victorian high forest conversion, exotic species and then neglect or conifer-plantings. Old trees were lost through management, Dutch Elm Disease and in urban areas vandalism. What remains reflects these influences.

Long-term impacts on hydrology, dead wood and soils present problems for future conservation. Non-natives such as Highclare Holly, Portuguese Laurel, Sweet Chestnut, Swedish Whitebeam and Variegated Yellow Archangel raise issues and prove controversial (Rotherham, 2005b) with questions of what to do, why, when and who decides? Science and history inform, but decisions are subjective; perhaps valid but choices to be made. How can ecology and the imprints of past human activity be conserved with dynamic stability in these cultural landscapes? This is a serious challenge with uncertain trends in perception and fashion, and in research and conservation funding.

5.1. Recognition, contemporary management and future visions

For the case-studies, archaeological and ecological surveys begun in the 1980s changed perceptions; confirmed by action research. Initial findings were dismissed by local archaeologists since the local sites and monuments record had few records Ecclesall Woods and surveys indicated many more, and some very old (Ardron and Rotherham, 1999). Similarly assessments of Owler Car Wood changed management by the Woodland Trust (Rotherham and Avison, 1997). However, for wooded landscapes to be effectively conserved then recognition of their nature is important, becoming more urgent with time as memories are lost, and site management tends to abandonment or intensification (revealed by regional monitoring). Ability to evaluate woodland archaeology and history to inform visions of
future more sustainable forest landscapes seems important. This process of recognition, evaluation and assessment drives the European Cultural Forest Network, launched at the Florence 2006 meeting.

In-depth regional studies and scoping assessments indicate serious problems for contemporary management. Sites abandoned for decades when management is reintroduced react in undesirable or unpredictable ways. Management history and deep-seated ecological trends are often ignored, with woodland context changed, many urbanised and fragmented, or isolated in intensive farmland. Soils, archaeology, working trees and vegetation are precious resources, an ‘eco-archaeological archive’; pits, platforms, soil profiles, sediments, plant indicators, banks, ditches, track-ways and roads, tell of land-use and human activity. These long-term, in-depth, multi-disciplinary studies suggest the archaeology of the woods should be considered as much a monument as that in the woods.

5.2. Local cultural knowledge loss

The changes have altered or removed fundamental drivers in the wooded landscape; many woods now valued for recreation and tourism, not subsistence and survival. Rackham (1986) noted woods threatened when economic importance waned. Today’s wooded landscapes risk severance from their direct, local economic functions. In place of this they are backdrops to tourism and leisure, the visitor’s gaze and the community’s local economic functions. In-depth, multi-disciplinary studies suggest the archaeology of the woods should be considered as much a monument as that in the woods.

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References


Agnoletti, M., 2003, 2005a; Hodder et al., 2005; Rackham, 2003b. For sustainability wooded landscapes need to be dynamic and fluid, and local cultural attachments are important. ‘Cultural severance’ in the landscape presents serious challenges, and laudable though many woodland conservation projects are, most relate to small areas in educational/conservation management, larger ones driven by recreation and tourism. Landscape-scale conservation reflecting natural and cultural origins is still someway off. As cultural landscapes, forests and woods reflect complex interactions between environment and history; the regional surveys and case-studies demonstrating depth in these relationships. The findings indicate that Europe’s forests can be managed more sustainably if this is recognised.


