



The cultural heritage of woodlands in the South East

With reference to the
High Weald • Kent Downs • Surrey Hills
Areas of Outstanding Natural Beauty

Dr Nicola R. Bannister
Edited by Patrick McKernan, Forestry Commission

IN MEMORIUM

*This book is dedicated to the memory of
Geoffrey Roberts
who died in April 2006
A greatly respected Forester and Woodsman*

PERIOD TABLE

Description	Archaeological Period	From	To
Hunting societies	Upper Palaeolithic	30,000	10,000 BC
Hunter-gather societies	Mesolithic	10,000-8,000	4,000-3,500 BC
The first agriculturalists	Neolithic	3,500	2,100 BC
The beginning of metal working in bronze	Bronze Age	2,100	600 BC
The beginning of metal working in iron	Iron Age	600 BC	AD 43
	Romano-British	AD 43	AD 410
	Anglo-Saxons [or Early Medieval]	AD 410	1066
	Medieval	1066	1540
	Post-medieval	1540	Present

*Front cover photograph: View across the Weald from the Iron Age hill fort at Holmbury Hill in the Surrey Hills
Back cover photograph: Remains of the late 17th century pale at Ashdown Forest in the High Weald (photos - PM)*

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Produced for the
South East AONBs Woodlands Programme



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Preface

The South East is a special place for woodlands. It is the most wooded region in the country, with its woodland cover being twice the national average. The region is also nationally important for the amount of ancient woodland it holds, supporting some 40% of the total area in England. Woodlands are also a vital part of the South East's protected landscapes - the Areas of Outstanding Natural Beauty (AONBs) in the region are some of the most heavily wooded in the country, and have an important role to play in promoting the great value of woodlands in our most cherished countryside.

The importance of woodlands in AONBs was underlined in 2001 by a Joint Accord between the National Association for AONBs and the Forestry Commission. The organisations' shared priorities, stated in the Accord, included securing an attractive and sustainable landscape in which woodlands help define their character, the protection of existing woodlands, and promoting the environmental, social, and economic value of forests and woodlands.

The Accord led directly to the setting up of the South East AONBs Woodlands Programme, one of four programmes across the country funded by the Countryside Agency (now part of Natural England) and the Forestry Commission. Running from 2003 to 2006, the South East Programme worked closely with the High Weald, Kent Downs, Surrey Hills, East Hampshire and Sussex Downs AONBs. One of the important aims of the Programme was to build a greater understanding of the way in which woodlands have helped shape these landscapes, and to increase our knowledge of their cultural, archaeological, and historical importance. This book was commissioned by the Programme on behalf of the High Weald, Kent Downs, and Surrey Hills AONBs, three areas where the history of woodlands and woodland use, and the way these have shaped each landscape are to a large extent intertwined. The book, however, places these AONBs in the wider context of the South East, by examining the cultural heritage of woodlands across the region.

From the ancient dene holes of the chalk hills to the hammer ponds of the Weald, from Bronze Age barrows to the deer leaps of designed landscapes, the history of woodlands set out in this book is both fascinating and essential to our understanding of the cultural heritage of our landscapes. It is not unreasonable to say that almost every woodland in these AONBs retains valuable evidence of its historic use. However, although there has been important archaeological work in woodlands in these areas, it is clear that much remains unrecorded, unknown, and often at threat.

Through increasing our understanding of the cultural heritage of woodlands in the South East, and in particular these protected areas, this book provides an important underpinning to the policies of AONBs, the Forestry Commission, Natural England, and other organisations, and will help raise awareness of the great, historic resource that still remains within our wooded landscapes.

Patrick McKernan
South East Native Woodlands Officer
Forestry Commission
October 2007

Introduction

The South East is by far the most wooded part of the country, a consequence of geology, landform, settlement and economic history. A visitor today descending into the Weald from any route over the North Downs and Chart Hills is immediately confronted by a landscape covered in trees, dominated by oak, described by Rudyard Kipling as the “Sussex Weed”¹ but a description which could also apply to Kent and Surrey as well. In Spring and Summer, the Weald is often cloaked in a blue green haze, which turns to golden hues in the autumn, stretching as far as the eye can see.

These trees and woods have played a vital role in shaping the countryside of the South East and they give the rural landscape its unique character. From the large forests and plantations as at Bedgebury or St Leonard’s, to the small shaws and coppices on the North Downs, which in turn contrast with the sinuous ancient gill woodlands in the High Weald. The numerous ponds, quarries and other areas of mineral exploitation, now long abandoned, support mature trees and together with the numerous hedgerow trees contribute to the overall wooded character of the South East.

The aim of this book is to introduce the reader to the subject of woodland archaeology in the South East, how woods reflect the cultural history of the region, what type of archaeology lies preserved in woodlands, and how to recognise and manage this archaeological resource for the future. Whether you own or manage a wood, or are curious about archaeology and/ or the countryside, this book will be of interest and hopefully encourage more people to look at woodlands in a different way.

View of the Weald from Leith Hill in the Surrey Hills (photo - PM)



The Areas of Outstanding Natural Beauty

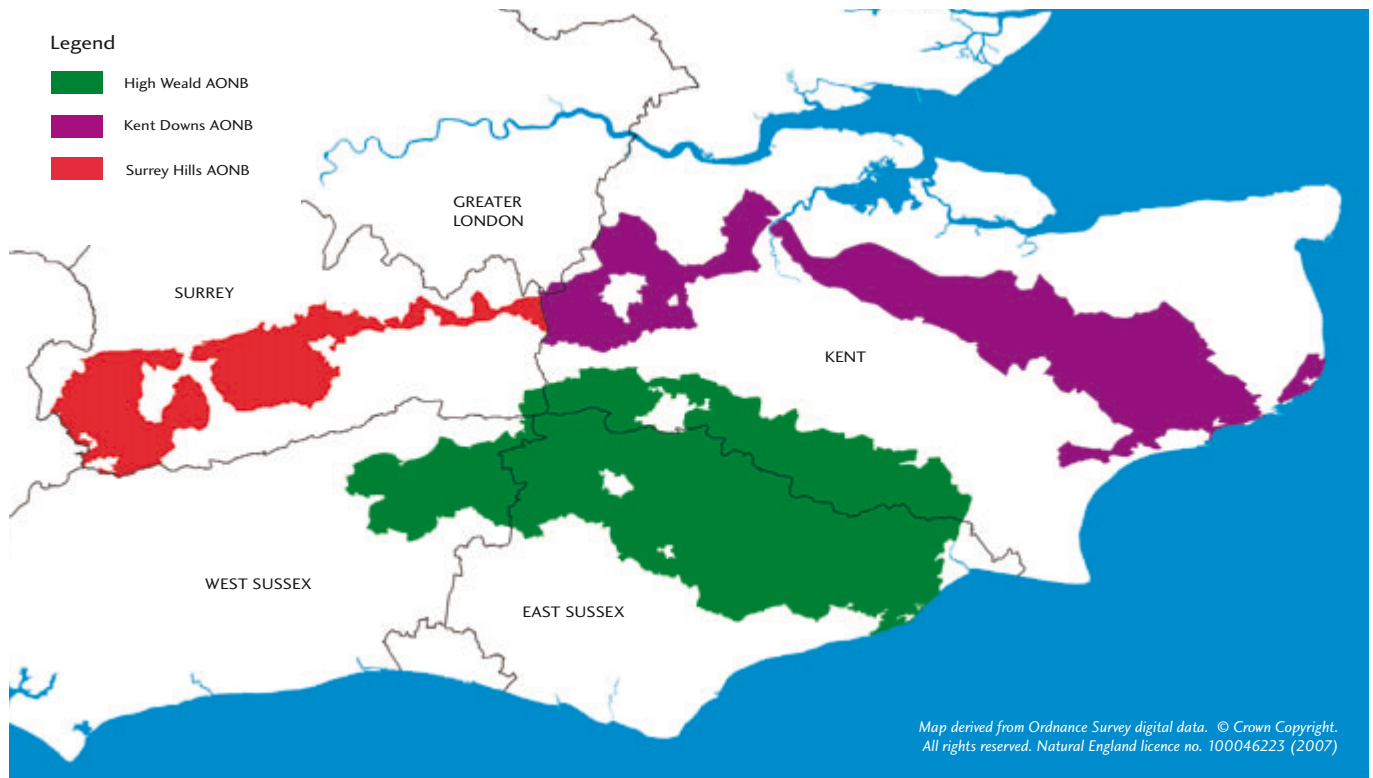
This report describes the cultural history of woodland in the South East and in particular the use and role of woods in three of the most heavily wooded Areas of Outstanding Natural Beauty (AONBs) in the country.

- The High Weald AONB covers the central part of the Wealden landscape stretching from Romney Marsh and Hastings in the east, to Tonbridge in the north and west as far as Horsham.
- The Kent Downs AONB covers the area of the chalk hills in an arc from Folkestone and Hythe to Wrotham and then embraces part of the Greensand Chart Hills at Ightham and Sevenoaks, ending at the county boundary with Surrey.
- The Surrey Hills AONB picks up the arc of Chalk Hills from Limpsfield Chart and follows the North Downs to the Mole Gap. Beyond Dorking, the Surrey Hills includes not only the North Downs but also the high Greensand Hills including Hascombe, Hambledon, and the dramatic Hindhead and Devil’s Punchbowl by the Hampshire border. A large section of the Low Weald centred on Chiddingfold and extending to the county boundary with West Sussex is also included.

The Cultural Heritage of AONBs

The term ‘natural beauty’ is the main purpose for the designation of AONBs under the 1949 National Parks and Access to the Countryside Act². However, over the past 50 years this definition has been updated to recognise the essential fact that the AONB landscapes have been and continue to be modified by human interaction with the environment.

The present landscape character in most instances is the result of settlement, farming and resource exploitation, which took place hundreds of years ago.



Map 1. Location of the High Weald, Kent Downs, and Surrey Hills AONBs

In 2001, the Countryside Agency (now part of Natural England) published the following description for the term ‘natural beauty’:

“ ‘Natural beauty’ is not just the look of the landscape, but includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries” .

Part of the ‘rich history of settlement’ is the economic and social exploitation of woodlands, wood products and associated land use activities. Woodlands became an integral part of local communities. Not only were they a source of timber and underwood for building and fuel but they were also a valuable resource for other needs such as food, minerals, grazing, employment, leading to the development of specialist craft skills as well as contributing to both a rich folklore and traditions.

Historically, the three AONBs were once intimately linked, and activities originating in one have contributed to the landscape character in another. The main flow of influence and interchange has been from territories on the outside ring of hills, south and west, towards the centre of the Weald, a process with origins in the early medieval period and possibly even into the prehistoric period. Settlements in the Kent Downs and the Surrey Hills historically had connections and links with settlements, once former swine pastures, in the areas known as the Low and High Weald. Iron Age settlements on the Greensand Hills once had connections with iron producing areas in the High Weald.

These social and economic links are still visible in the network of radiating green lanes, roads, sunken hollow ways and paths.

It is well known that woodlands are important habitats for wildlife, and in particular rare flora and fauna, but they are also important for their visual impact and creating a sense of identity in the countryside. Woodlands and trees give a sense of enclosure and intimacy. But what this book aims to show is the role that woods play in the cultural history of the region, and their value as a resource for preserving archaeological features which record how the landscape has been used over time. The historic management of any given piece of wood has a direct influence on its present wildlife and scenic value appreciated today. Very few (if any) areas of woodland have not been subject to some form of management in the past.

Why does so much woodland survive in the South East?

The wooded character of the South East is a consequence of several factors. The varied geology gives rise in many areas to indifferent and poor soils, unsuitable for intensive farming. Another, historical factor was the demand for wood products in the region, going back to prehistoric times. In Roman and Tudor times fuel was needed in very large quantities for the production of iron. Other industries demanding fuel across the centuries included glass and gunpowder manufacture, leather and tanning, hop growing and drying, agriculture, bakers and cook houses. The demand came not only from the local communities but also from

London and the ship construction industries in the Thames and Medway estuaries. Woodland in Surrey, for instance, provided faggots and brushwood for fuel on a daily basis before coal was shipped in by boat.

Geology

The South East region is underpinned by a unique geological landform, the Wealden anticline, a truncated dome where the top has been eroded, revealing within a relatively small area an arc of numerous bands of sedimentary rock outcrops. The oldest deposits of sandstones, siltstones and mudstones lie in the middle of the Weald and give rise to the area known as the High Weald. The youngest, which lie to the north, south and east of the region, are Tertiary deposits of Thanet Beds, Woolwich Beds, London Clay and Bagshot Beds. In between are the layers of Greensand which give rise to the Chart Hills, and beyond them the arc of Cretaceous Chalk, which gives rise to the North and South Downs. Between the Chart Hills and the High Weald is the Low Weald, a large area of heavy intractable clay. Many of the soils which derive from this geological formation are poor, difficult to work, waterlogged in winter and experience drought conditions in summer, or are very sandy with porous, unstructured soils. These properties do not lend the soils readily to intensive and continuous cultivation. However, despite the poor soils, farming has taken place in the Weald since prehistoric times.

Historic Land use

The poor and hard winning soils precluded extensive wholesale clearance of the woodland in early history. Then a demand for wood and timber products meant that many woodlands were actively conserved from the early medieval period into the 20th century. The demand came not only from the local domestic market but also from London, as well as from expanding local

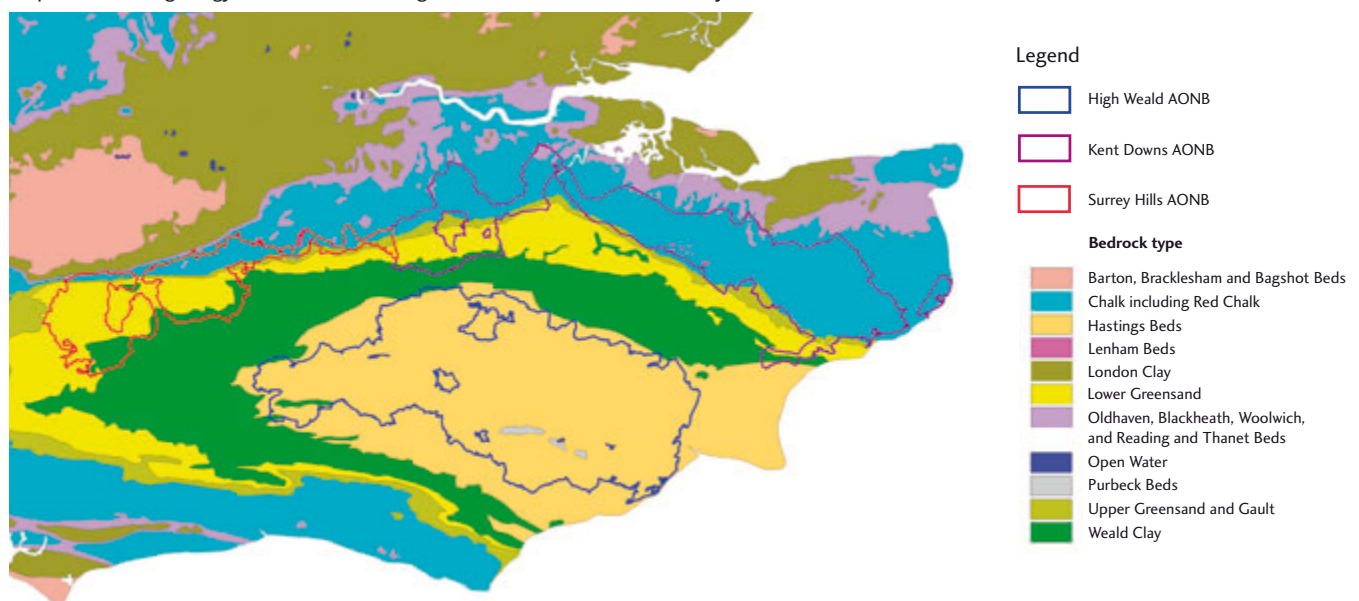
industries such as iron, glass, tanning, hop growing and shipbuilding, that readily exploited the mineral resources the Weald had to offer. The Weald was rich not only in woods and trees but also in mineral deposits of iron ore and in the numerous small fast flowing streams, which drain from the upland centre.

Coverage of Woodland in the South East

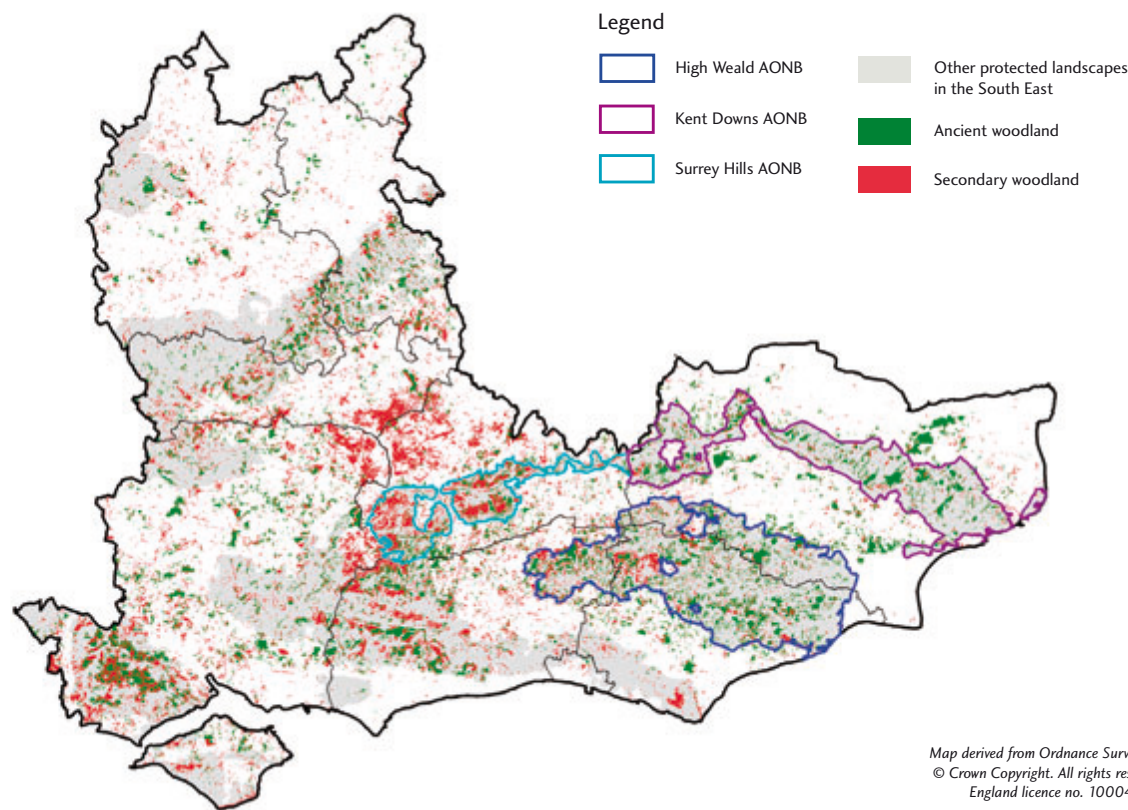
The South East retains the greatest concentration of woodland and also the greatest amount of ancient woodland. These are woods which have been continuously wooded for over 400 years (since 1600 AD) and probably for much longer and which are identified on some of the earliest reliable maps⁴. It is generally considered that some of these woods may be directly descended (but significantly modified) from the 'wild wood' which once covered this part of Britain after the last ice retreated (Devensian period) 10,000 years ago. Where the woodland retains its locally native tree population it is described as ancient semi-natural woodland (ASNW). Where the wood has been significantly altered in the modern period by managing it as plantations, often with conifers, these are called 'plantations on ancient woodland sites' (PAWS). Ancient woodland sites are irreplaceable. Once cleared and converted to a different land use other than woodland they are lost for ever.

Secondary or recent woodland (less than 400 years old), is where a wood has either been planted on an area of land, or where trees have been allowed to grow naturally through regeneration, usually as the result of a cessation in land use management. The South East has a large concentration of secondary woodland, especially on the Greensand Hills and in the Low Weald, where large and small areas of heathland and common have become covered in woodland in the 20th century, as grazing and

Map 2. Bedrock geology in relation to the High Weald, Kent Downs, and Surrey Hills AONBs



Geological map data derived from 1:625,000 BGS digital data. British Geological Survey © NERC
Map derived from Ordnance Survey digital data. © Crown Copyright. All rights reserved. Natural England licence no. 100046223 (2007)



Map 3. Distribution of ancient and secondary woodland in the South East

active cutting have ceased. Both ancient woodland and secondary woods retain features of archaeological and cultural interest. The range and type of features found within the woods will often reflect the origins of the wood and how they have been managed.

Woods versus Forests

The term 'forest' had a very clear meaning in medieval times. It was a place set-aside for the king's pleasure to hunt beasts of the chase. A forest could cover many thousands of acres of land, as for example at Ashdown. Although people could live and work within forests, they were subject to strict, often brutal Forest Laws, which were in place to preserve the chase. The Forest Laws also generated a valuable source of revenue for the Crown. A Forest would comprise a range of habitats such as wood-pasture, heaths and open spaces often called lawns, as well as traditional enclosed woodlands. Beasts of the chase included not only deer, but also hares and rabbits, as well as wild fowl and game birds.

Rabbit or 'coney' warrens were often a feature in Forests. Introduced into this country by the Normans, rabbit meat and fur were valuable products.

Wood-pasture

The term 'wood-pasture' describes a specific form of woodland management, which had its origins probably in late prehistory but certainly was well developed in the early medieval period. Timber and woodland products

were harvested from the same area of land where stock was also pastured. The form of management of the trees, namely pollarding, where timber was cut from the trunk or boling at about 8 to 10 feet high, meant that animals could not graze on the regrowth and thus kill the tree. But they could still graze on the grass and undergrowth.

Wood-pasture is now thought to have been much more widespread in the medieval period than in the post-medieval. Recent changes in thinking regarding how the original 'wild wood' appeared and was subsequently exploited by humans and grazing animals suggests that extensive areas of wood-pasture may have been the characteristic structure of the original Wealden 'wild wood' rather than dark impenetrable woodland as traditionally thought ⁵.

Areas of wood-pasture today are very rare, and those that survive are often important ecological habitats where the veteran pollards support nationally rare invertebrates and bryophytes.

Heaths and Commons

Outside of the Royal Forests were other areas of open ground, where medieval manorial tenants could exercise common rights such as grazing, peat and turf cutting, furze cutting, etc. These land uses continued well into the post-medieval period with many ending either when the commons were formally enclosed or when many traditional land management practices ceased in the early



Extract from a 1610 map of Sussex showing the extent of Sussex Forests (by John Norden, augmented by John Speede)

20th century. Unenclosed commons may also have had enclosed coppice woods intimately associated with them, whereby underwood products were used in managing the commons, such as the use of hurdles for penning stock, and coppice wood for making broom handles, the broom head being cut from birch growing on the common. Due to a cessation in active management and the extinguishing of common rights in the modern period, many such commons and heaths have become overgrown with colonising trees and scrub.

Brief History of Woodland in the Weald

One reason for selecting the High Weald, Kent Downs, and Surrey Hills AONBs as subjects for this book is that all three were once historically interlinked with each other and with the management of Wealden woods. However, the character and nature of woodland in each AONB is very distinctive, reflecting different methods of management, landform, geology, and social forces.

Prehistory

The character of the Wealden landscape seen today has its roots in the Early Medieval period and probably with elements stretching back to the Iron Age (c. 600 BC). The hills and lands ringing the wooded hinterland were well settled and exploited in the prehistoric period. The North Downs were already being cleared and farmed in the Neolithic period; these farmers built the large and striking megaliths found in the Medway Gap, and long barrows in the Stour Valley. Evidence for this woodland clearance from the Downs has been found from pollen, and molluscan remains caught in hill wash or coluvium and recorded in soil profile sections, or preserved in relict soils preserved beneath burial mounds⁶. It is generally accepted that burial mounds (both long barrows and round barrows) were not usually constructed in woodland but rather in open sites which had a spiritual and landscape significance to those communities

building the mounds. Thus their presence in woodland today, especially in sites identified as 'ancient semi-natural' indicates that land use activities other than woodland were taking place in the prehistoric period.

The central lands in the Low and High Weald were traditionally thought of as being thick forest where humans did not settle. However, Mesolithic and earlier settlement sites have been found in the High Weald, for example from rock shelters at Groombridge and sites where other large sandstone outcrops occur. Mesolithic camp sites have also been found at Charlwood in Surrey. The high concentration of Mesolithic finds in the Sevenoaks and Ightham area reflects in part the work of Benjamin Harrison (1837

- 1921), a shop keeper and enthusiastic prehistorian. But it may also be that the high sandy hills probably had areas of open ground and were comparatively easier to travel across, compared with the wetter and denser-wooded Low Weald.

Wood was an important resource for prehistoric communities, as important as flint. It was not only used for fuel, but also for tools, utensils, and the construction of shelters, and larger timbers were used in the construction of ritual monuments, causeways, and boats. Careful selection of the right form of timber was needed for construction works. In addition, the advantage of strong and straight poles from coppiced trees was exploited from the Neolithic period. There is now a large amount of archaeological evidence for wood and timber products created from underwood from apparently managed woodlands in the prehistoric period.

The clearance of woodland was originally thought to have been by a 'slash and burn process'. However, areas of primary wild wood would have contained many large trees, the trunks of which are very difficult to burn in situ. An alternative method of utilising grazing livestock and herbivores to create clearings combined with some burning is probably the more likely scenario. Academic research is suggesting that the Wealden 'wild wood' encountered by the early prehistoric hunters was more like a wood-pasture than a solid block of impenetrable woodland⁷. Areas of open glades and meadows interspersed with shrubby thickets and tall forest is a more likely woodland environment. Passage through this woodland would have been much easier for Mesolithic communities and also for the herbivores they hunted. Wet, boggy areas were probably avoided, with hills and more open ridge tops preferred as routeways.

The links between the landscapes of the Surrey Hills and Kent Downs with the High Weald may have already been in place 8,000 years ago but physical evidence comes from the Iron Age (c. 600 BC). Demand for and control of iron producing areas in the Weald was probably one of the pressures exerting a force on the development of tribal territories. Hill forts or settlements enclosed with ramparts were being constructed on the Greensand Hills and other high ground overlooking and controlling routes in and out of the forest as at Holmbury, Hascombe, Squerryes, Garden Hill and Saxonbury. Iron working has been identified as one of the key activities taking place in these hill forts. The ore was probably transported from iron rich deposits in the Weald to the hill fort settlement where skilled smiths worked the metal into weapons and utensils ⁸.

Evidence for later prehistoric settlement sites is found along the Chart Hills, along the river gaps and coastal margins of the Downs and throughout the region of North Kent ⁹. These are areas where the distribution of woodland and especially ancient sites is infrequent. However, the tops and dip slope of the Downs and the lands west into the Weald where prehistoric settlement is sparse is where woodland is more dense. The dense woodland coverage on the Greensand Hills is possibly the result of the development of secondary growth on a previously more open landscape.

Romans

The country of Kent was described by Caesar after his two visits 55 - 54 BC as being 'thickly studded with farmsteads' and that its people were the 'most civilised'¹⁰. From this observation it can be inferred that the woodland, certainly in the east and north of Kent, was fragmented by fields and associated settlements. When the Romans finally settled in Britain at the beginning of the 1st century AD, the indigenous population probably continued the same processes of land management, but gradually adopted Roman ways and customs. Timber and woodland would have been in great demand for all the large construction works being undertaken in the newly burgeoning towns at Canterbury, Rochester and London. Timber for buildings, wharves, road infrastructure, as well as for industry – pottery, glass, metal work, tanning, and of course iron smelting.

The Roman iron industry in the Weald is now partly considered a state enterprise, organised and run by the Classis Britannica - the British Fleet. Iron production was on a large scale, beginning in the Hastings-Battle-Sedlescombe area before moving towards East Grinstead and Wadhurst when resources began to be depleted. By the end of the Roman occupation the main iron production area had moved from the Weald to the Forest of Dean in Gloucestershire ¹¹.

Distribution of Roman and Romano-British settlement as evidenced from find sites, reveals some broad patterns. The major concentrations of towns, large villas and farmsteads occurred along the coastal plains, the margins of the Downs, across the Greensand Hills and with a scattering of sites into the Low Weald. The High Weald area was dominated by settlements associated with iron exploitation. Many of the tops of the North Downs and the remote depths of the Weald appear to have not been settled and possibly were utilised for their timber resources. A Roman villa settlement site at Chiddingfold may have been a country estate controlling and producing timber and wood for settlements nearer to London.

Anglo-Saxon

Settlement, after the collapse of Roman rule and administration, probably continued in the countryside much as it had done during the Roman occupation. Following the demise of Roman control, migrant colonists – Jutes in Kent and Saxons in Surrey and Sussex – settled and brought with them extensive farming practices. After initial settlement in the countryside around Dover and the North Kent Plain, the Vale of Holmesdale (between the Greensand Hills and the North Downs) became the focal area for primary Jutish and Saxon settlement, which extended into the Weald and up on to the Downs. Further Saxon settlement took place along the edge of the dip slope of the North Downs in Surrey and in the Coastal Plain of West Sussex.

A glimpse of the Wealden woodland can be gleaned from the Anglo-Saxon Chronicles, where as early as AD 477, the Saxons led by Aelle and his sons came to Selsey and killed many native Britons and put them "to flight" into the wood which is named "Andredesleag". In AD 755 Cynewulf drove Sigeberht into Andredesweald, where he

Artist's reconstruction of a Roman bloomery for iron production (reproduced with the kind permission of the High Weald AONB)



stayed until he was killed by a herdsman by a stream, the herdsman avenging the death of Cumbra who Sigebert had killed ¹².

These two extracts from the Chronicles indicate firstly that the woodland was not an impenetrable thicket but that the Britons sought refuge there, perhaps knowing suitable settlements to hide and regroup. Secondly the reference to the herdsman by a stream several centuries later is evidence of the way the woods were being managed at this time. The extent of the great wood of Andred is recalled in AD 892 as being 120 miles long and 30 miles broad. Its length would have included what is now the New Forest as well as woods in Eastern Hampshire. By the time of Domesday in 1086, the Saxon name 'Andred' had been dropped and from thence the wood and the area was called Weald. (This change in name appears to coincide with the European meaning of 'wald' for wood-pasture, a mixture of grazing and wood production).

The Weald had now become a vast wood-pasture, subdivided into territorial commons, where stock, mainly pigs, but also cattle were driven in the autumn from lands and manors around the edge to feed on the oak and beech mast, before being driven back to the home manor or farm ¹³. This practice of herding stock from one area to another with the seasons is known as 'transhumance', and was introduced by the immigrant Anglo-Saxon settlers, mainly the Jutes. They saw the potential of the Weald and its adjacent lands in their entirety. Initially the Weald was carved up into several large commons belonging to the large agricultural estates held by the royal Saxon household, known as Lathes in Kent and Rapes in Sussex. As these large estates became fragmented in the form of gifts and grants from the royal house to secular and ecclesiastical owners, so too did the commons, with 'parent' manors on the north and east

of the region claiming individual swine pastures or dens located along main drove ways into the commons¹⁴. These manorial swine pastures can be plotted today from the place names of settlements and farmsteads with the route ways terminating in the High Weald.

The swine pastures were not just confined to the Low Weald. Manors on the North Kent Plain and in the Thames Basin had grazing pastures on the North Downs and in The Blean, a large forested tract around Canterbury. The legacy of the annual mass movement of livestock is still present in the landscape today. It is visible in the pattern of numerous settlements, some now 'lost', whose names end in the word 'den' in the Kentish Weald and 'fold' in the Sussex Weald. It can also be seen in the numerous radiating routeways leading westwards and southwards into the heart of the Weald, depending on where the parent manor was located on the margins.

The character of the woodland at this time can be postulated as a mixture of enclosed coppice wood, where the trees were harvested for specific products, and tracts of unenclosed wood-pasture and areas of regenerating woodland on former farmed land on the sandy soils. Interspersed were farmsteads where some people were beginning to make permanent settlements in the woodland. Small seasonal hovels occupied by the drovers and stockmen may also have developed into smallholdings and farms, in return for 'fines' and dues paid to the lord of the 'parent' manor.

In the heart of the Weald far more of a grazed 'wood-pasture' type landscape probably still existed comprising interlinking commons and unenclosed wood-pasture with scattered farmsteads and settlements. It was when managed underwood was becoming scarce that woods were being enclosed with boundaries and hedges to prevent stock grazing on regrowth. Settlement and

farm names ending in 'Hurst', such as Goudhurst and Hawkhurst indicate enclosed hill top woods, i.e. woods separated from other land use activities indicating active management and conservation of a valuable commodity.

By contrast, the Forests on the sandstone ridges of the High Weald, such as St Leonard's Forest and Ashdown Forest, are thought to have originated as Saxon hunting grounds and therefore were not subject to manorial swine pastures. Here, great tracts of wood-pasture, heaths, grassy glades and more dense woodland were criss-crossed by tracks and routeways.

Reconstruction of swine herding in the High Weald (photo - JH)



In the Domesday Survey of 1086 the main way of recording woodland in the south east of England was by the number of hogs for pasturage. Where manors located in the north and east of the region or in the Vale of Holmesdale were cited as having 'X' amount of woodland for hogs, this woodland was likely to be many miles away from the parent manor. The amount of hogs was an arbitrary amount used as a tax measure and did not relate to an actual measure on the ground. The Weald, the Downs and the Chart Hills were sparsely populated but not necessarily uninhabited, as the lands here were in part included with the assessment for the parent manor.

Medieval

The main structure and pattern of settlement and land use in the Weald was probably in place by the time of Domesday. The physical movement of people and stock between parent manors and swine pastures was gradually declining as permanent settlements were being established in the 'dens'. This pioneering settlement was allowed in return for dues, monetary fines, heriots and rents. However, the lord of the parent manor still retained control over timber and wood production within these areas, as shown by the numerous cases which involved the Archbishop of Canterbury. It is probable that when a den or several adjoining dens became formally settled, the remaining wood-pasture was enclosed and managed either in hand by the lord of the manor or tenanted out, as for example at Dering Wood near Pluckley in the Low Weald ¹⁵.

The settlement and enclosure of 'dens' produced a field pattern of more regular assart fields with smaller areas of woodland, the result of the more open nature of the wood-pasture. By contrast, later clearance of woodland resulted in smaller, irregular fields with thick wooded shaws and larger areas of remnant woods. On the Downs, the topography of long and steep valleys influenced field and woodland shape far more than in the Weald, creating a ribbon pattern of fields interlinked by shaws, shaves or rews and small coppices.

Management of woodland by coppicing interspersed with standard trees such as oak and ash was practiced across the region as a means of providing a ready supply of timber and underwood for fuel and for a vast range of other uses. The poorer soils derived from the clay-with-flints on the North Downs and the sandy infertile soils on the Greensand Hills gave rise to extensive commons and wood-pastures, many of which are still evident today, but are more often than not covered by dense secondary woodland. The folding of sheep usually took place on common fields, more frequently encountered in Surrey than in Kent, but not to the extent as that which occurred on the South Downs in Sussex. In Surrey, sheep grazed on the chalk grass of the Downs or

commons on the Greensand during the day, were driven on to arable fields and 'folded' using hurdles where their dung was used to manure and enrich the cultivated soils. This further exacerbated the impoverishment of the upland grounds. The severe mortality experienced in the Great Famine in the early part of the 14th century and the Black Death in 1348-9 meant a reduction in the work force available to work the land. Coppice was probably left unmanaged and areas of former cultivated land reverted to scrub and woodland. On the North Downs, former arable areas were allowed to develop into sheep walks, though not as extensively as on the South Downs.

Post-medieval

In the post-medieval period aspects of traditional management of woodlands underwent several key changes, reflecting changes in economic demand. In the 17th and 18th century iron production in the Weald was reaching its zenith, with numerous forges and furnaces operating across the Sussex Weald and into Kent and Surrey. The demand for suitable underwood or cord wood for fuel and conversion into charcoal was immense. Hornbeam, oak, ash, alder were all utilised. Coppice woods, however, were being created at the expense of timber trees. This was seen as a threat to national security, the lack of timber for ship building and the threats from Spain and France being very real. Acts for the preservation of timber trees were passed and iron masters were extolled to allow some trees to remain as standards and not be brought into coppice management.

The first, in 1543, the 'Acte for the preservacion of woods' stated that there should be 12 timber trees to the acre with these not felled until they had reached a certain size. The period of the Commonwealth Parliament (1649-60) resulted in many woods, wood-pastures, and fine trees being felled as part of the sequestration of estates held by royalist landowners; the timber and underwood were taken in lieu of monetary fines. Some woods were replanted but many others were converted to farmland.

A further change in coppice management took place with the development of the hop industry in the 18th and 19th centuries, both in the growing and drying of hops in kilns. It coincided with the decline in demand for fuel from the iron industry (the centre of production having moved to the Forest of Dean and then to the north, where coal, the preferred fuel, was in ready supply). Hop vines grew best up long straight poles and growers needed poles which did not rot quickly. Sweet chestnut coppice was the most suited, able to grow quickly and strongly on a wide range of soils, throwing up numerous straight poles. Many estates and woodland owners grubbed up the hornbeam and oak coppice woods, replacing the trees with sweet chestnut.

Traces of the older woodland structure may still survive today in the adjacent shaws, gills and smaller woods. Associated with the hop industry were the small brick tar tanks, with their hearths, where the ends of poles were dipped in heated bitumen to seal and preserve them. Coppice wood was also used in the oast kilns to dry the hops before they were bagged and taken to the brewery. Underwood was also valued in the production of gunpowder, alder being one of the best trees to convert into charcoal. Gunpowder works were founded in the Tillingbourne valley in Surrey and also at Oare near Faversham, to the north of the Kent Downs. Fuel was also needed for kilns for glass manufacture and also for burning lime.

By the 19th century many large estate owners were looking at ways to improve timber production from their woodlands. John Evelyn, who resided at Wotton in Surrey, had written in the 17th century 'Sylva', a popular and informative book on trees and all aspects of their management and use¹⁶. It was based on his forestry and woodland experience on the North Downs and Greensand Hills. The continental method of 'high forest' management was beginning to be adopted along with the continuing coppicing of sweet chestnut. Areas of traditional coppice and also heaths and commons were being planted to conifers. Areas of redundant farmland were also being planted up, with the former field patterns preserved under the canopy. Characteristic of this time were the extensive networks of formal forest rides and drainage systems laid out to facilitate ease of management of the newly planted trees. This process continued into the 20th century.

Not all woodland was seen just for its economic worth. The 'Picturesque' movement in landscape design and appreciation resulted in woodlands and small groups of trees being planted to create 19th century gentrified parkland. On some estates, cover for game in the form of new coverts or existing woods specifically managed as coverts added to the diversity of woodland cover. In decline in the 19th century was the practice of commoning, the grazing of stock on heaths and greens. Many of these areas had by now become enclosed to fields or woodland but for those that remained, birch scrub and conifer invasion diminished the open areas. The quarries, brickworks, and areas of turf cutting, as well as prehistoric remains began to disappear under a clothing of trees.

Modern

In the South East, woodlands had a crucial part to play during the two World Wars, not only as a supply of timber needed for construction work but also as places for training and places to hide supplies in. Large areas of woodland, especially the high forest and plantations were felled to fuel the 'war effort'. In Surrey and Kent

woods were used to hide ordnance, ammunition bound for the coastal batteries. Associated with these sites were networks of field defences, anti-tank traps and camps. When allied forces came over, many camped on the heaths and commons, practicing field activities and creating all sorts of different and obscure earthworks.

Woodland management today

Today, the commercial management of woodlands remains on an economic knife edge, with the market for homegrown timber limited due to costs and a lack of suitable processing plants but also out competed by cheap and sometimes unsustainable imports from abroad. This means that many woods, especially small ones are often uneconomic for commercial producers. In 1991, the paper mill at Sittingbourne in Kent closed its broadleaved roundwood intake. This, and the recent closure of the pulp mill at St Regis in South Wales have had a significant impact on the market for coppice underwood in south east England.

Coppice is the most widespread traditional woodland structure still found in woods in the High Weald, Kent Downs, and Surrey Hills. The economic returns for managing traditional coppice are very low and the demand for woodland products is small, with few financial incentives. For coppice woodland to retain its cultural and ecological value these woods need to be managed by regular cycles of cutting, in a sustainable way. However, there are signs of growth in the fire wood market, and the considerable interest in wood fuel as a heat source has the potential to create a significant market for managed woodlands.

Footnotes

¹ Rudyard Kipling 'Sussex' 1902. In 'The works of Rudyard Kipling. Wordsworth Poetry Library p.215

² National Parks and Access to the Countryside Act 1949, Section 14

³ Countryside Agency (2001) Areas of Outstanding Natural Beauty. A guide for AONB partnership members. CA24, p.6

⁴ Nature Conservancy Council (1989) East Sussex Ancient Woodland Inventory; West Sussex Ancient Woodland Inventory; Surrey Ancient Woodland Inventory; Kent Ancient Woodland Inventory. Pilot projects are now revising the Inventory in the light of additional map evidence and a greater understanding of woodland origins. See Westaway, S. (2006)

⁵ Vera, F. W. M. (2001) Grazing Ecology & Forest History CABI Publishing

⁶ Ashbee, P. (2006) Kent in Prehistory pp.50-52 Tempus

⁷ Vera, F. W. M. (2001) Grazing Ecology & Forest History CABI Publishing

⁸ Hanworth, R. (1987) The Iron Age in Surrey pp.157-161. In Bird and Bird 'The Archaeology of Surrey to 1540' Surrey Archaeological Society.

⁹ Lawson, T. & Killingray, D. (2004) An historical atlas of Kent, Phillimore p.19

¹⁰ *ibid* p.20

¹¹ Cleere, H. & Crossley, D. (1995) The Iron Industry of the Weald. Chapter 4. Merton Priory Press

¹² Swanton, M. (2000) The Anglo-Saxon Cronicles. Phoenix p.15, p.47, p.84

¹³ Witney, K. P. (1976) The Jutish Forest, Athlone Press

¹⁴ *ibid*

¹⁵ Bannister, N. R. (2002) The Management of Dering Wood, Smarden, since the Medieval Period: Archaeological and Documentary Evidence. Archaeologia Cantiana CXXII pp.221-235

¹⁶ John Evelyn (1664) 'Sylva' or A Discourse of Forest Trees