

Cloud Wood



A history and natural history of an ancient
Leicestershire woodland



by Anthony Squires

Contents

PART ONE - The history

Geology and Topography

page 4

History and Archaeology

pages 5 - 14

The Woodland of Domesday Book (1086)

The Early Middle Ages

The Late Middle Ages and Early Modern Times

Post Medieval History

Recent History

PART TWO - The natural history

The Flora

pages 15 - 21

Vascular plants

Mosses, liverworts and lichens

Fungi

The Fauna

pages 22 - 25

Moths

Butterflies

Beetles

Dragonflies and damselflies

Birds

Mammals

Amphibians

PART THREE - Future management

The Quarry

page 26

Cloud Wood Nature Reserve

pages 26 - 29

MAPS

Figure 1	page 3
Figure 2	page 5
Figure 3	page 8
Figure 4	page 9
Figure 5	page 15
Scientific names of Species of Flowering Plants	page 30
Sources of Information	pages 31 - 32

Updated in 2017 by Nathalie Cossa, Leicestershire & Rutland Wildlife Trust

Photographs on cover in order: ride flora, herb-paris, lime trees, dryads saddle, bee orchid, woodland flora, giant bellflower, common spotted orchid (all © LRWT) white letter hairstreaks (© Steve Blandford).

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PART ONE

The history

Cloud Wood is a prominent landmark in the parish of Breedon-on-the-Hill in Leicestershire. It lies 15 miles north-west of Leicester, 10 miles south-east of Derby and 15 miles south-west of Nottingham. The name 'Cloud' means 'a rocky hill' or 'mass of rock' and the wood extends over 81.54 acres (33 hectares). The present wooded site includes the spoil tip in the southern part and represents about half the area of the feature before the arrival of the quarry.

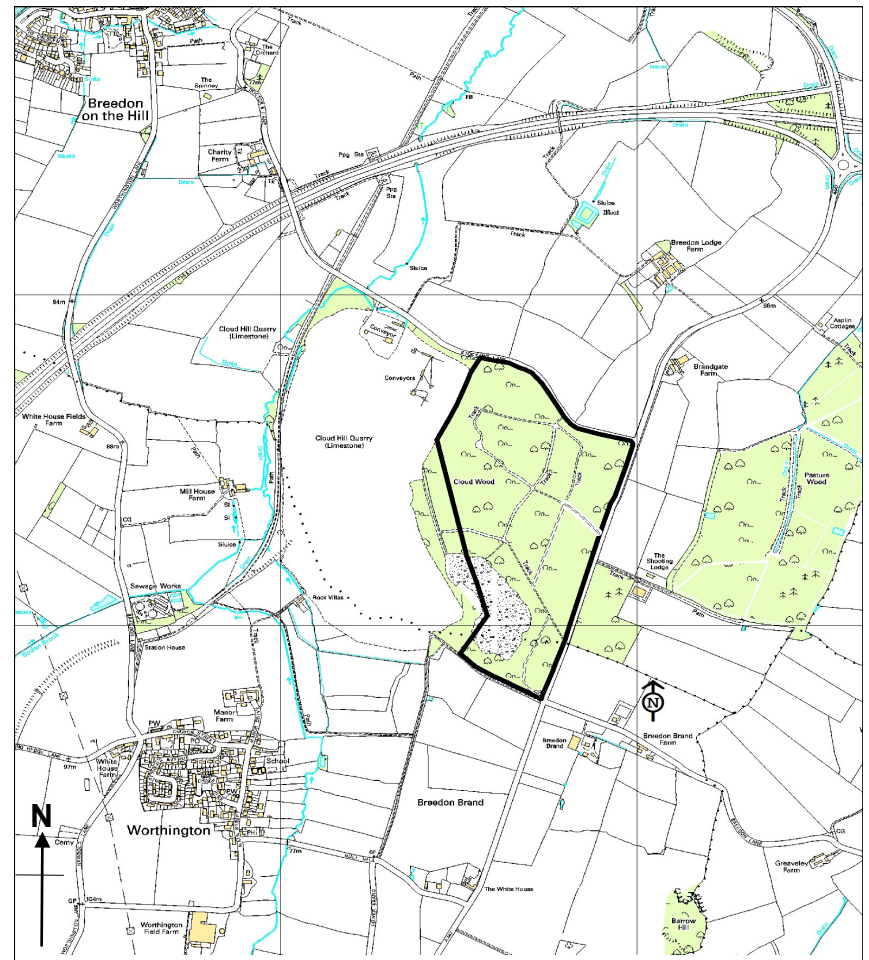


Figure 1

Cloud Wood is in reality a modest hill. It is separate from, and is quite different to, the more familiar and very prominent Breedon Hill, which is topped by the parish church and from which the village derives its name.

Cloud Wood once covered the entire hill and extended over approximately 150 acres. In 1956 the remnant of the wood was designated a Site of Special Scientific Interest, on account of the richness of its flora and fauna. In 1993 it was donated to the then Leicestershire and Rutland Trust for Nature Conservation by the owners, Breedon plc. This came about largely through the personal interest and generosity of the Managing Director, John Gillies Shields.

The Trust has embarked on a vigorous and long-term management policy to restore the wildlife interest. This booklet summarises the historical development of the site and reviews what is known of the wood's flora and fauna.

Geology and Topography

The highest point of the wood, at a little over 350 feet above sea level, is in the centre. There is a prominent and downward slope towards the north-west and a slightly less prominent slope to the east. The surface everywhere, especially to the east, is no more than gently undulating and in many places is effectively flat. The activities of the adjacent quarry have not reached the summit although the tipping of waste has produced obstruction of drainage to a minor waterway.

Cloud Hill Wood divides into three distinct geological areas. The western one third is, or was, Carboniferous Limestone. There are few limestone areas in the local district and it is hardly surprising that this relatively large deposit has been worked so vigorously over many years. The central one third of the hill, i.e. the western section of the reserve, is of Mercian Mudstone (Keuper Marl), which also covers much of the landscape as far as the Trent Valley to the north and eastwards to the River Soar.

The eastern half of the reserve is on the very familiar Boulder Clay, which is the overlying deposit for much of the rest of the county. At Cloud Wood it is not quite so sticky in nature as it is in most parts of East Leicestershire, e.g. at Owston Wood. However, since it occupies the flattest part of the wood, it gives rise to poor or very poor drainage. The distribution of both Mercian Mudstone and Boulder Clay has played a significant role in the history of the development of Breedon Parish and with it Cloud Wood.

Thanks to the Wildlife Trust's management we can now see how Cloud Wood probably appeared in the Middle Ages.



A photograph showing a recent coupe regenerating

History and Archaeology

This section reviews the evidence, from various archaeological and historical sources for the development and management of the wood as

an essential background to accounting for the present richness of the flora and fauna.

The Woodland of Domesday Book (1086)

The ancient ecclesiastical parish of Breedon was formerly very large and included the villages of Tonge and Wilson, part of Diseworth, Worthington, Newbold, Griffydam, Staunton Harold and Lount, a total of about 6.000 acres. The present civil parish of Breedon-on-the-Hill is about half that area.

The name Breedon Cloud enters the written record in the early 13th century, but clearly the woodland had been present on part or the entire site it occupies today long before that date. In a recent publication a case was made for believing that Cloud Wood was one of two, possibly three, local woodland areas which were in existence in the late 11th century and that only the wood, part of which later became known as Cloud Wood, was recognised by the entry in Domesday Book (*LRWPP*).

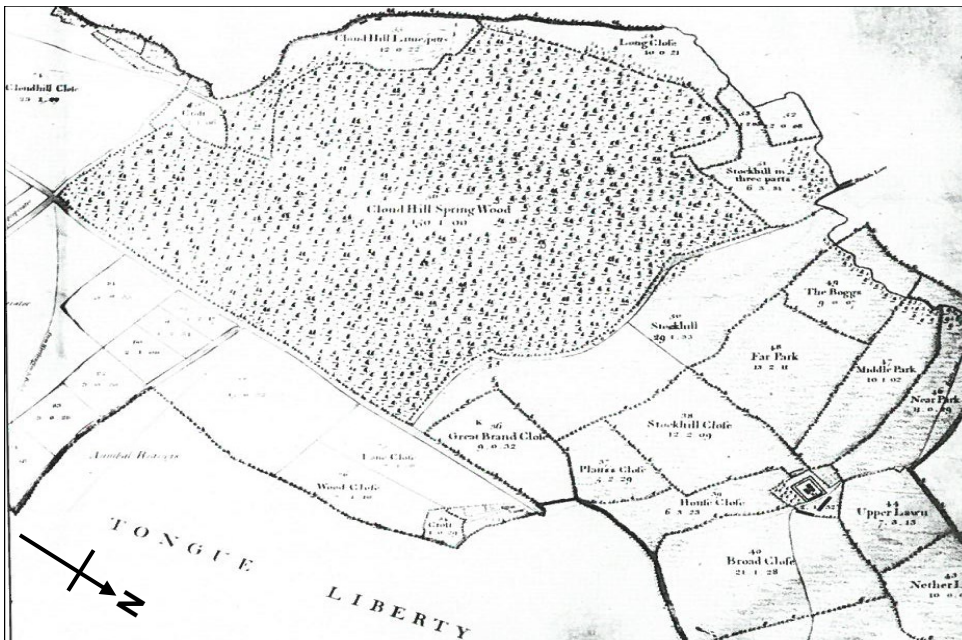


Figure 2

This early wood, which is listed under the heading 'Tonge', is described as being three quarters of a league in length by half a league wide. According to Rackham's middle 'form factor' figure, the entry translates as about 600 modern acres. His minimum and maximum form factor figures produce a range of approximately 500 to 850 acres. This possible variation must always be borne in mind when making even rough and ready calculations regarding early landscapes. Precision is seldom possible, even from what appear to be reliable records. Whatever the true total, the bulk of the woodland appears to have been located to the east, south and south-east of the original Cloud Hill Wood, the extent of which is shown in Figures 2 and 4, in the area which later became known as Breedon Brand.

By the time of the Norman Conquest of 1066 the open field system of the parish of Breedon had been established, a system which endured with modifications to the Parliamentary Enclosure Act of 1759. For reasons of geology and topography, these fertile areas surrounded the village which lay at the base of Breedon Hill. They were also intimately bound up with the much smaller field systems of nearby Wilson and Tonge. Such fertile and easily cultivated acres extended across the areas of sandstone and Mercian Mudstone. Away to the south-east of the open fields of Breedon, the geology is largely Boulder Clay, which is stiff and wet and much less easy to cultivate. This is where the large Domesday Wood of Tonge was located.

Only a relatively small part of such a huge acreage was managed for the production of wood and timber. In any case, there were wooded areas closer to the village. Much of the wood was given over to wood pasture which produced a landscape of large trees, often well-spaced, between the trunks of which the domestic stock of the villagers found grazing, and where wild deer were probably present. In this respect it was a pattern of land use and management which was characteristic of most large woodlands in medieval Leicestershire, e.g. Hereswode to the west of Leicester, which was later to become part of the Royal Forest of Leicester (*Rackham*). Grazing rights, which were jealously guarded and

vigorously exercised, were usually attached to the occupation of certain manorial tenements and cottages.

The Early Middle Ages

Most of the woodland records for Breedon during the 12th to 14th centuries are to be found in the Cartulary of Breedon Priory and they clearly refer to the woodlands called 'Burny' and 'Westwode' which lay to the west of the village (*Mackinley*). This section makes use of the few references there are to the wood of Domesday Book.

During the early 12th century the decline of the wood was underway. In 1205 Peter de Goldington of Worthington granted 'The wood of Cumbersike on both sides of the water towards Worthington'. This indicates that woodland still extended southwards from Breedon Cloud (*LMVN*). In other instances the 'Wood of Worthington' is mentioned, but it must be born in mind that this term might also refer to the wood at 'Geltsmore' (the modern Gelsmore at the southern end of Worthington parish) which had 'clearings' (*LMVN*).

It is a feature of medieval and later records of woodland that they almost invariably refer to wooded areas which had a value and/or were subject to disputes which resulted in litigation. With the usual scarcity of 12th century local records, it is not possible to describe in any detail the progress of the decay of the great Domesday woodland and the emergence of the more open landscape. In the early 13th century the name 'le Brende' which means 'a place cleared by burning' first appears. Throughout the Middle Ages and beyond, an expanding human population produced pressures on communal areas outside the common fields. Very often the decline or relaxation of manorial controls meant that areas such as The Brand deteriorated in agricultural terms, as stocking levels went unregulated and other forms of abuse took place.

The decline of the former large areas of woodland under these circumstances during the Middle Ages can be traced in other parts of Leicestershire, as well as over much of lowland England (*LRWPP Ch 6*).

At Breedon, as elsewhere, written evidence reveals this in two ways. First, woodlands became named for the first time as discrete entities, rather than being referred to as vague and generalised areas such as 'The Wood of Tonge'. They were enclosed with a ditch, bank and fence by the manorial lord or his tenant. Second, the establishment of hunting parks was a move on the part of lords to protect, by means of enclosure, not only deer for hunting but also the woodland habitat they required. Woodland conservation, no problem at the time of the Domesday Book, was a pressing matter in early 13th century Leicestershire.

At Breedon the two signs of the growing shortage of woodland are met when, in 1226, the first reference to Breedon Cloud by name appears. Under an agreement of that year, Robert de Tatersall, the lord of Breedon, attempted to enclose his woods of 'Cludes and Hirstes' which lay 'in Tonge' as a deer park. He was challenged by Simon de Ropele of Worthington who claimed the move would deprive him of his common grazing in Robert's woods. An amicable agreement was reached whereby Robert would convert the woods 'so enclosed with a fence as on the day on which this agreement was made' and that they would 'remain as a park for ever'. Simon and his tenants would retain certain grazing rights in the new park (*LMVN*).

The park occupied an area which was centred on the present moated site below Breedon Lodge Farm (SK 419223), Figure 3, but it included a small area of the present Cloud Wood. The creation of the park removed cultivated land from the open fields of Breedon and Tonge. Adam de Cure was found guilty of making 'trespass with six pigs in the Lord's park' in 1342 which was one of many incursions. However, the park had a short life. There are no references to it as a hunting area after 1312 and it probably did not survive the aftermath of the Black Death of 1348. The later history of this part of the parish, under the name 'Breedon Park', is simply as agricultural land which did not return to the open field systems (*Grey Mss*).

The manorial court rolls for the mid 14th century confirm that the park was an entity separated from the remainder of the woodland in the area

of Cloud Wood. John Manicel was only one of several local men who 'trespassed with pigs in The Cloudes'. In 1362 Joan Marmion of Worthington was charged with 'trespass made with 80 sheep in the Stockynges and the Cloudehalough' (PRO). Later records show that the woods of 'The Cloudes' and 'Cloud Hallow' adjoined one another and that they occupied the hill known today as Breodon Cloud.

The Late Middle Ages and Early Modern Times

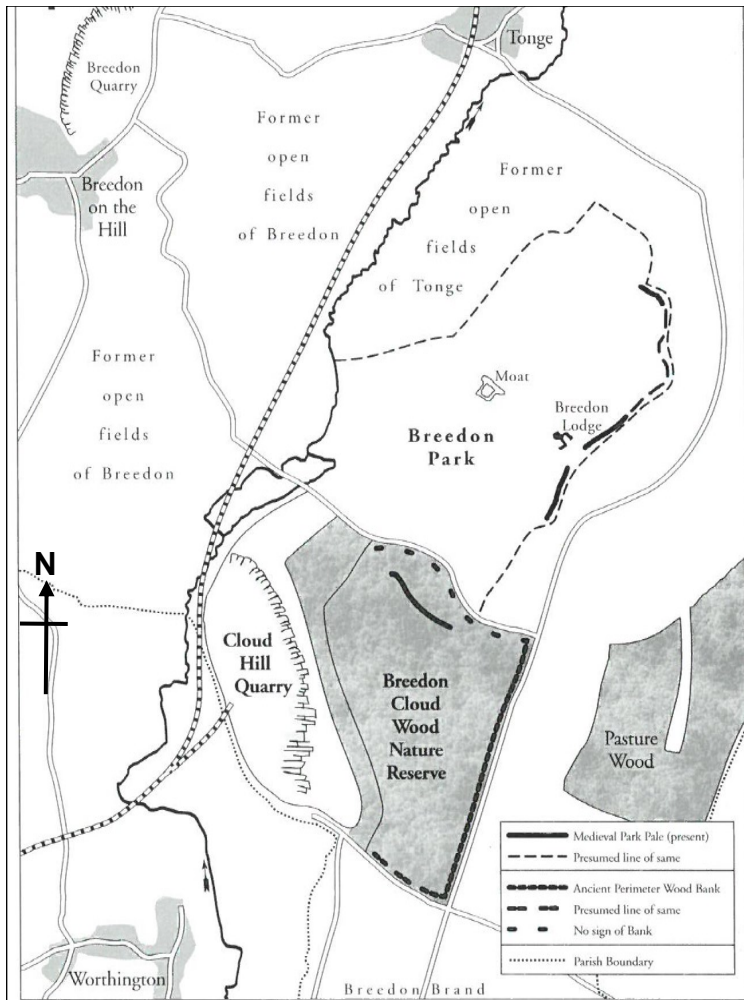


Figure 3

The earliest map which shows in detail the boundaries of Cloud Wood is dated 1761 (LRO Grey Mss) as Figures 2 and 4. At that time the quarry occupied only a very tiny area of the Wood. Although subsequent mining has removed most of the western section, archaeological and written evidence have much to say about the remaining eastern boundary, part of the southern one and the wood as a whole. The earthwork evidence is shown on Figure 3.

In the first place, there are no known archaeological remains in the wood and particularly no ridge and furrow. However, it must be remembered that approximately one third of the hill has effectively disappeared and that tipping of quarry waste may have obliterated early signs.

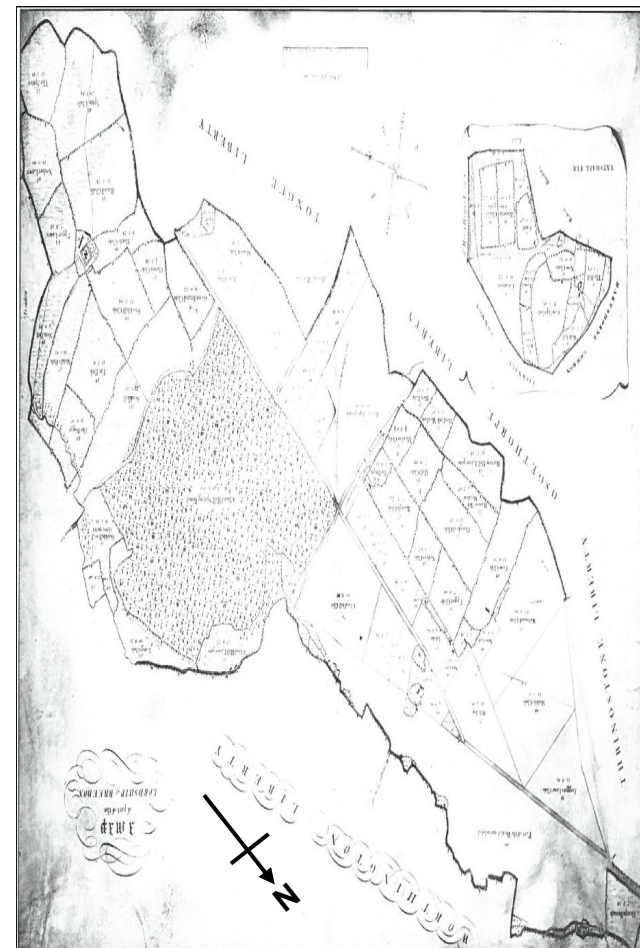


Figure 4

The southern boundary towards Worthington shows traces of a large and substantial bank, typical in size and nature to that of an early wood bank. The eastern edge of the wood appears to be straight and typical of a planned 18th century Parliamentary Enclosure boundary. However, field survey confirms what the 1771 map suggests. i.e. the line lacks the precision of enclosure surveyors. There are clear signs along its length of a similar large bank and ditch, now much decayed. In addition, there are some very ancient stools, mostly oak and ash, growing on the bank or along its line, which are much more than two-and-a-half centuries old. These indicate that the bank was constructed at a much earlier date than the mid-18th century. It is fortunate that the modern road, with its accompanying drainage ditches, has not damaged this ancient boundary.

Along the northern edge of the wood there is no ancient bank and ditch. Whether or not the construction of the adjacent Stocking Lane to take heavy lorries to and from the quarry is responsible for any loss is not clear. What is present in the northern edge of the wood is a substantial bank and ditch which represents a fragment of the line of the pale of the deer park. This may well also have acted as the northern boundary of the wood in the 13th and 14th centuries.



Photograph showing remnants of the bank and ditch

The names 'Stocking' Lane and 'Stocking' Field in this part of the parish speak of land cleared of trees. Between the pale bank but within the present wood, there are still a few very ancient stools. As late as 1656 three men leased a close of 30 acres called 'The Stockin' with the stipulation that they should not 'cut, lop or grub up any woods, trees or thorns except for fencing' (Grey Mss). The late presence of woodland can be accounted for by the fact that the land between the present lane and the ancient bank falls away sharply and would be difficult to cultivate.

Along the western edge of the wood quarrying activity has removed any archaeological features, including any possible signs of a wood bank.

From the above it now seems very likely that the 1761 boundaries of Cloud Wood had been established by the end of the middle ages, i.e. before c. 1530. The eastern and southern edges were deliberately and carefully laid out as part of a regularisation of the boundaries of the area called 'The Brand'. Also involved was the land of the manor of Worthington, when it eventually became detached from Breedon. In short, the present Cloud Wood shows boundaries that were established perhaps 500 years ago and that its survival has been closely linked to pressures from common grazing on the adjacent area of The Brand.

Post Medieval History

After the Dissolution of the Monasteries in the 1530's, the manor of Breedon passed through a number of hands before becoming the property of the Earls of Stamford in the 17th century. A survey of royal woods in 1554 refers to 'a wood called Clouds (which) contains 33 acres, whereof 8 acres of it is fair young oaks and the other 25 acres thick set with underwood of 30 years growth' (PRO). From later references it seems likely that the whole of the wood was in royal hands and that for some reason the remaining approximately 100 acres were not valued.

The survey of 1656, made at the time of the Commonwealth, states that the Wood, under the names 'Cloud Hill' and 'Cloud Hollow', covered 40

and 100 acres respectively (LRO Grey Mss). This agrees well with the total area given in 1761.

It was probably at some point in the late 17th century that the mining and burning of limestone on anything other than a casual basis began. The result of burning limestone was quicklime which was used in mortar for construction purposes. Burning relied on a steady and plentiful supply of wood and/or coal. Cloud Wood provided the former and local pits the latter.

In 1759 Nathaniel Curzon was renting the small quarry at Breedon Cloud along with the lime kilns. He also leased the kilns at the main quarry at Breedon Hill, together with those at the very much smaller one at Barrow Hill, which lies to the east of Cloud Wood on the parish boundary with Osgathorpe. The lease for Cloud Wood was for seven years and two pence in every shilling, i.e. = 1/6th, of all profits from the sale of burnt lime going to his landlord, the Earl of Stamford. In 1769 the kilns at Cloud Wood produced lime with a value of £770, which was about half that realised at the main site at Breedon Hill. Two years later Curzon renewed his lease on the properties and agreed to mine sufficient stone to keep the kilns working at full capacity (Enville Hall). Prior's Map of Leicestershire published in 1779 shows four kilns at Breedon Cloud and four at Barrow Hill (Prior).

The records of the cutting of the wood by Lord Stamford at Cloud Wood show that as production from the kilns increased so did the volume of wood. Sections of the wood were cut in the time honoured system of coppice-with-standards. Unfortunately, it is not possible to say how many years comprised a cycle; neither are the species of the trees given. The value of the wood and timber in the late 1700s varied much across the wood, from about £6 to £22 an acre. In 1780, 13 acres made £169; in 1783 twelve-and-a-half acres made £153 and in 1784 four acres made £43 (Enville Hall).

Bark sales, too, were important, but the values were invariably included with those for the other local woodlands of Asplin Wood, Pasture Wood

(‘Annibal Riding’) and Tonge Gorse.

In 1767 it was reckoned that the best seven acres of these combined woodlands were worth in timber, wood and bark about £200 in sales (Enville Hall).

An Act of Parliament of 1759 enclosed the 1814 acres of the open fields of Breedon. This move did not include the area of The Brand. Its enclosure necessitated a separate Act, which was passed in 1802, and which covered a further 1194 acres. It also included the open fields of Worthington and Newbold (Nichols). Neither Act affected Cloud Wood in any way but the need for the second Act did emphasise the long and separate development of the area as a distinct part of Breedon parish. Also evident was the fact that many generations of local people had, legally or otherwise, been making encroachments (which had become permanent enclosures) on to Brand Common (LRO Breedon Enclosure Act).

It is also important to note that there are no known archaeological features in the area of The Brand, except for some ridge and furrow, on the Worthington side of the brook which runs from north to south on the eastern side of the village (Hartley). This is a further indication of the area's long, separate and distinctive development.

Recent History

When Lord Stamford sold his manor of Breedon, which extended over 2260 acres, to Charles Frederick Clifton, later Baron Donington, in 1873 the area of Cloud Hill Wood was given as 146 acres. At that time the wood was still a very valuable property and in nature was much as it had been for at least the previous three and a half centuries and probably very much longer.

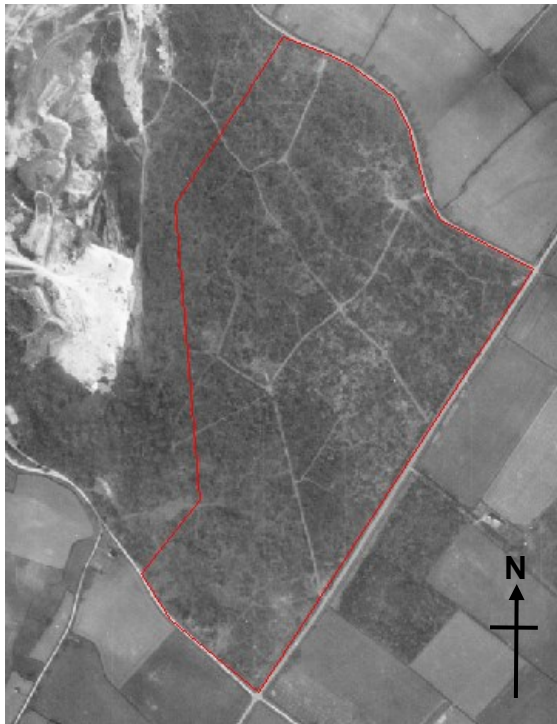
Production at the kilns and the profit they yielded fell in the 1870s under the inefficiency of Lord Donington's managers. In 1886 larger kilns were built by his lordship's new agent, J. G. Shields, and production once again increased. When Lord Donington died in 1895, Shields was leasing the

quarry and in 1920 he purchased it and the wood outright. This very able businessman went on to acquire much of the remainder of the Donington lands in Breedon Parish, including Breedon Hall, which he bought from the Curzons. In 1933 he formed his entire mining operations into a limited company (*Shields Ms*).

At some point before World War One, lime-burning ceased at Cloud Hill and the extraction of limestone for a variety of other purposes increased. Unlike other major Leicestershire woods, Cloud Wood escaped the axe (LRWPP). During the 1920's and 1930's management of any sort effectively ceased and the wood was used only occasionally for sporting purposes.

In 1940 Mr Shields sold the standing timber to the local firm of Harlow Brothers of Long Whatton for £4,000. The clear felling of the wood, which then extended over about 110 acres, was begun at once. The brash was sorted out as firewood by Italian prisoners of war.

The mature trees were mostly oaks, wych elms, sycamores and ash with a typical age of 150 years. The trunks of some of the larger oaks, particularly those growing in low-lying ground along the northern edge of the wood, had diameters of four and five feet and were certainly much older. There were also a few very large individual yews and most of the limes and elms had grown from old stools.



Aerial photograph of the wood taken in the 1940's

The wet conditions and the difficult nature of the terrain meant that felling was not completed until 1945. Aerial photographs taken during the immediate post war years show the surface denuded of trees. To this day there are no large single standards and the present regrowth dates from this period (Harlow Brothers).



Photograph of some of the lime trees growing from historic coppice stools

Mining over the last 50 or so years has proceeded under an IDO (Interim Development Order) which was obtained in the post war years. The terms of this were reconfirmed in 1995 as the result of a national review. The tipping of waste and overburden in the wood began in the 1960's and ceased only in the early 1990's. Much of the material was dumped along the rides so that some of these are noticeably higher and much better drained than the surrounding woodland floor. In addition, a large depression occupied by compartments 8, 9 and 10 was filled and the surface more or less levelled (Breedon plc).



Re-growing coppice

The woodland and spoil tip were left to regenerate and has developed into a species rich woodland. Since the Trust was gifted the wood, a programme of coppicing in approximately one third of the woodland has been progressed.

PART TWO

The Natural History

Cloud Wood has been visited by naturalists, particularly botanists, for more than a century-and-a-half. These have included such local celebrities as John Power (1758-1847), the Rev Andrew Bloxham (1801-78), the Rev WH Coleman (1816-63) and the Rev Churchill Babington (1821-89). Many societies, including the Leicester Literary and Philosophical Society's Section D, and the BSBI, have paid visits on different occasions.

The flora

Vascular Plants

For the purposes of recording the wildlife the wood has been divided into ten compartments as shown on Figure 5. These correspond roughly

to the geology as follows: Compartments 1, 2, 3, 8, 9 (part) and 10 cover the Mercian Mudstone (Keuper Marl). Here the land undulates gently and rises to the low summit of the Hill. The soil is well drained and is neutral or alkaline in nature.

Compartments 4,5,6,7 and 9 (part) cover the boulder clay. This gives rise to flatter and less well drained conditions and in compartments 5, 6 and part of 9 the wood is often wet, even in dry summers. Compartment 10 is the spoil tip site which is fairly well draining although contains a few seasonal pools.

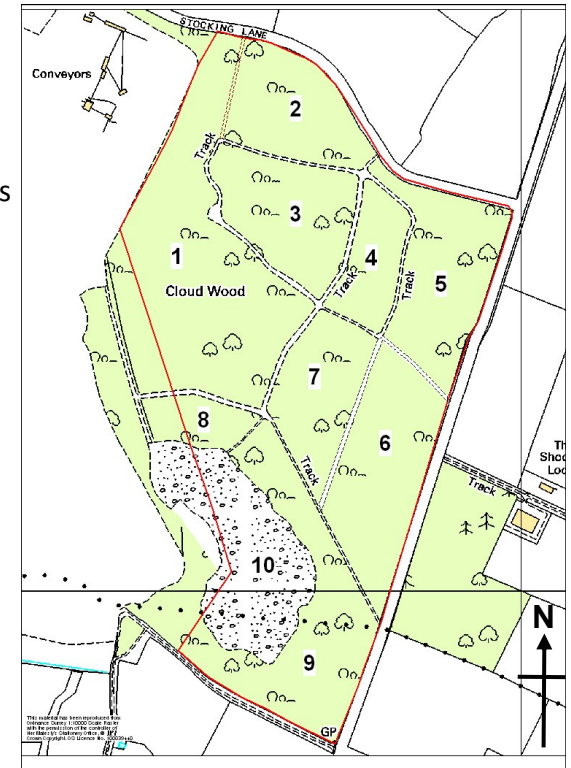


Figure 5

The acquisition of the wood by the Leicestershire and Rutland Wildlife Trust, has been noted on page one. The overwhelming signs of neglect were reflected in the unbroken stands of coppice. This produced a thick canopy over wide areas with the result that the woodland floor was in deep shade during the summer months. The rides were also choked with young trees. Species of plants present are those which are well suited to such conditions, who will tolerate with varying success the lack of light or, more important perhaps, have managed to survive adverse conditions in some ways. Since the Trust acquired Cloud Wood in 1993, coppicing has been reinstated in approximately one third of the woodland which has created a more interesting height and density of trees and shrubs.

A total of 206 species of vascular plants have been recorded at Cloud

Wood. In the 2011 quadrat survey, 12 tree species were recorded, 32 species of trees and shrubs were recorded in the understorey and a total of 199 species were found in the ground flora.

Changes in the flora

Horwood and Gainsborough's *Flora of Leicestershire and Rutland*, published in 1933, included some detailed information on the plant life of Cloud Wood, most of it probably obtained from a survey carried out prior to 1920 on the area of woodland that grows on Boulder Clay. The species present at then appear to be very similar to those that can be found now, around 100 years later. One notable loss from the wood since those times is the rare Yellow Star-of-Bethlehem, which grew on in the lower woodland towards Breedon, destroyed through quarrying activities.

In 1977 a small part of the wood was surveyed and the results were published in Primavesi and Evans' *Flora of Leicestershire*. This survey was repeated in 2008 by Michael Jeeves, working for the Wildlife Trust, allowing for comparison of changes in the flora over a period of 31 years. More species were lost than those that were gained. It is thought that increased shading was probably the reason for the losses, although it should be noted that some of them occur elsewhere in the wood.

Another survey, in 2011, covered the whole of the wood, including the spoil tip. The plants in small square plots, or quadrats, at the intersections of a 100m grid, were recorded, together with information on woodland structure. It is planned to repeat this survey in 2021 in order to try and monitor change over the whole of the nature reserve.

A notable find since Horwood and Gainsborough is the Violet Helleborine, a locally rare orchid.

Woodland Species in Leicestershire

The long history of Cloud Wood as a woodland site is well reflected by

the presence of a variety of species often, mostly or solely found in woodland in the county. The presence of at least 36 species reflects very closely the historic pattern of woodland distribution in Leicestershire which has changed little for centuries if not millennia. (LRWPP and TLHAS). The purple small-reed just maintains a presence here but in any case is rare in the county.



Violet helleborine

Violet Helleborine, another rare Leicestershire plant, was first recorded in 1978 at Cloud Wood and in 2016 two plants were found in deep shade. In the East Midlands it appears to be on the edge of its range in England. The hairy wood-rush and the yellow pimpernel are widespread in the British Isles but Leicestershire seems to represent something of a 'hole' in their distribution, probably on account of the fact that they are restricted to undisturbed ancient woodland and there is little of that in the County.

A further ten species of flowering plants reflect much more loosely the historic distribution of woodland. These include the giant bell-flower which avoids acid conditions and is confined to the western part of the wood; wild strawberry which is a familiar plant of woodland rides and which avoids heavy clays; and woodruff, which is locally frequent here and in other woodlands on basic soils.



Wild strawberry

Ancient Woodland Indicators

The present flora of Cloud Wood with 25 ancient woodland indicator plant species provides firm evidence for the notion of the site's long history of woodland cover. Nine species which are regarded as strong evidence for ancient woodland status at least in Leicestershire, have

been recorded. It is worth pointing out that Cloud Wood is one of the few select woodland sites in the county which are known to be ancient (from the sort of evidence presented in Part One) and from which the selection of indicator species can be based (LRWPP).

The nine species are:

HERB PARIS In Leicestershire it is entirely confined to ancient woodland, although on at least two sites (nearby Pasture Wood and Brown's Wood at Skeffington) it grows on ridge and furrow. It has been rediscovered in a number of localities (Jeeves, 2011).

GREATER BUTTERFLY ORCHID A rare species in Leicestershire and scarce at Cloud Wood, which is one of only two sites in the north-west of the County.



Greater butterfly orchid

VIOLET HELLEBORINE Another rare Leicestershire plant recorded from 11 localities but found only in five localities since 1988.

SMALL-LEAVED LIME This species is locally frequent in the woodlands of Charnwood Forest but is scarce elsewhere.

PENDULOUS SEDGE It is locally frequent in Charnwood due to preference for acid soils and by water, in the woodlands of the north-west and in a few localities in the east and south of the county.

YELLOW PIMPERNEL This is a strict indicator of ancient woodland, preferring slightly acid soils. It is found in the ancient parts of Charnwood Forest, in the north-west and parts of the east of the county.



Yellow pimpernel

HAIRY WOOD-RUSH, WOOD MELICK and PURPLE SMALL-REED These species are almost entirely

confined to the woods of Charnwood and to a few sites in the east of the county.

Rarities in Leicestershire & the East Midlands

Cloud Wood Nature Reserve does not contain any national rarities although Small-leaved Lime is scarce everywhere it occurs in the British Isles. Several species present at Cloud Wood are rare on a local or regional basis. As has been pointed out, the woodland habitats at Cloud Wood provide the conditions for many of them and changes brought about by disturbance over the last sixty years or so account for the absence of others.



Bee orchid

Herb-paris, greater butterfly orchid, violet helleborine, purple small-reed and (formerly) yellow-star-of-Bethlehem have already been mentioned. All have or had a very restricted range in Leicestershire. Early purple orchid and bee orchid have a wide distribution in the county but are at very few sites. While the former is closely associated with woodland conditions the latter is most often found on disturbed ground. More orchid species are present at Cloud Wood than any other site in Leicestershire and Rutland.

The carline thistle, also a plant of disturbed ground, has Cloud Wood as only one of its few Leicestershire sites. It grows on calcareous soils of quarry spoil heaps and made up rides but elsewhere it is, or was, found in a gravel pit at Shawell, on the floor of a disused slate quarry (at The Brand near Woodhouse Eaves), on the grassland of an old airfield (at Saltby), and on the castle mound at Hallaton (Primavesi & Evans). Cloud Wood is also one of only a few sites for Solomon's Seal. Spindle is known from only a few other locations in north-west



Carline thistle

Leicestershire. It is possible the plant was introduced to Cloud Wood.

Limestone Species

The former underlying presence of a large deposit of Carboniferous Limestone, together with the fact that much of the overburden and waste rock from the quarry has been distributed in the wood, is reflected in the presence of certain species. Plants present which are typical of these basic conditions include woodruff, bee orchid, carline thistle and crosswort.



Woodruff

Cloud Wood and Pasture & Asplin Woods

The nearness of Pasture and Asplin Woods to Cloud Wood naturally raises questions as to the relationship of the sites as evidenced by their respective floras. Both Pasture and Asplin are ancient woodland sites and, like Cloud Wood, may also have descended, directly or indirectly, from the Domesday Wood of Tonge. The archaeological evidence shows each to have had very different histories. Whereas Asplin (34 acres) has no internal signs of disturbance, Pasture Wood (59 acres) is mostly on ridge and furrow (LRWPP pp 104-109). They both stand on boulder clay of the same deposit which occupies the eastern part of Cloud Wood.

Although Cloud Wood has an acreage which is about that of Pasture and Asplin Woods combined, it has almost twice the number of ancient woodland species as the two smaller woods have in total. Geological considerations offer a partial explanation but the most obvious factor is past management. Further, the different histories of Pasture and Asplin are not reflected in the ancient woodland indicators which are not common to both woods. There is no evidence from the floras that there is any significant likeness between Cloud Wood and Pasture Wood as opposed to Asplin Wood or between Cloud Wood and Asplin as opposed to Pasture. Any significant likeness between the three woods is between Pasture and Asplin.

The following data, using ten ancient woodland indicator species present in Cloud Wood, are of interest:

	Cloud Wood 206 species	Pasture 81 species	Asplin 77 species
Purple Small-reed	Y	N	N
Pendulous Sedge	Y	Y	Y
Violet Helleborine	Y	N	N
Hairy Woodrush	Y	Y	Y
Yellow Pimpernel	Y	Y	Y
Wood Melick	Y	N	Y
Birds Nest Orchid	Y	N	N
Herb Paris	Y	Y	Y
Greater Butterfly Orchid	Y	Y	N
Small-leaved Lime	Y	N	N

Mosses, liverworts, and lichens

Mosses are well developed throughout the woodland, especially the very common *Atrichum undulatum*, *Eurhynchium spp.* and *Hypnum cupressiforme* on the ground. *Brachythecium velutinum* is on calcareous soil and stones on ridges and rough areas.

Of the liverworts, *Frullania dilatata* is the scarcest species, occurring on a leaning ash carrying a birdbox. This is normally considered an oceanic species found on rocks and in woodlands in western Britain, where it is very common. It appears to be reinvading former haunts in the wake of reduced levels of sulphur dioxide. It was considered endangered in the Leicestershire and Rutland Red Data Book (1997) and since that time has been seen four times in the county. All records have been made since

2000.



Aloidia aloides
© www.cisfbr.org.uk

Other species at Cloud Wood which are also listed in the Red Data Book are *Aloidia aloides* var. *ambigua*, a species of calcareous quarries; *Orthotrichum affine*, an epiphyte on elder, willow and ash in areas of low concentrations of sulphur dioxide; *Radula complanata*, a species of wayside trees, and *Riccardia multifida* which is found in calcareous quarries. The woodland bears lichens which are typical of shade and shelter, but there are no

indicators of ancient woodland, confirming that the felling of the wood in the 1940's was very thorough.

Some lichens which are increasing throughout the county as levels of sulphur dioxide decline also occur in the wood. *Parmelia sulcata*, *P. subaurifera* and *Evernia prunastri* are now common macro lichens. They are found especially on the trunks, upper branches and twigs of well-lit ash. Blackthorn and willow around the edge of the site have *Xanthoria polycarpa* and *Physcia tenella*, which suggest nitrogen or ammonia enrichment, probably from agricultural sources.



Parmelia sulcata
© G. Calow, Naturespot

Recent coppicing has exposed lower parts of ash trunks to better light so that lichens are spreading downwards from the upper canopy. On many trees, the trunks are covered in a broth of algae upon which various lichens are beginning to differentiate. Most interesting are *Candelariella reflexa* and *Caloplaca obscurella*, as these may be recent invaders in the county. The former's appearance may well be associated with ammonia enrichment as a result of increased intensive pig and dairy farming.

Fungi



Stereum subtomentosum
© G. Calow, Naturespot

The fungi are abundant in a good season with the fruiting bodies of some kind of fungi being present at any time of the year. Many species such as *Phellinus ferruginosus*, *Pluteus nanus*, *P. romelii* and *Stereum subtomentosum* are typical of old wood stumps. The recent discovery of *Sarcoscypha austriaca* on logs in a pond produced the first record for the county. Scarce fungi include the earth star, *Geastrum striatum*, and the hedgehog fungus

Hydum repandum.

The woodland rides have the scarce magpie fungus, *Coprinus picaceus* and certain waxcap fungi which are sensitive indicators of old, undisturbed soils, especially of grassland.



Coprinus picaceus
© H. Bell, Wild about Britain

The fauna

Lepidoptera

The butterflies and moths of Cloud Wood also reflect the underlying geology and topography and the nature of the vascular flora. Most records have been made with the aid of mercury vapour lamps during the years 1986-99. Over 80% of the visits by recorders were made since 1993, the year Cloud Wood was made a nature reserve. The current total of recorded species is 411 comprising 272 macro moths, 117 micro moths and 22 butterflies. These figures must be regarded as provisional as the wood doubtless harbours other species.

Moths

The great majority of moth species at Cloud Wood are common over much of the rest of the county and over lowland England. About 9% can



Glaucous shears
© Alchetron.com

be described as 'local' i.e. they are known from less than 300 10km squares on the national recording system. The Glaucous Shears, *Papestra biren*, is an endangered species at county level and the Common Fan-foot *Pechipogo strigilata*, which in any case seems to be in decline over much of its range, is now of national interest.

Cloud Wood is the only known location in Leicestershire for two micros: *Prochoreutis sehestediana* and *Pseudoscaphila branderiana* and provides a record for the Clouded Magpie, *Abraxas sylvata*. The Pinion-streaked Snout, *Shrakia costaestrigalis*, has been seen only eight times in



Pinion-streaked snout © G. Calow, Naturesport

Leicestershire over the last 20 years and 3 of these records were from Cloud Wood. The Scalloped Shell, *Hydria undulata*, is similarly very scarce.



Scalloped Shell
©ukmoths.org.uk

It is not possible to describe with confidence the Lepidoptera fauna of Cloud Wood before World War Two, but one can assume that the wholesale removal of the tree cover, an act of devastation of its kind not experienced for centuries, if not millennia, must have had a very marked effect on the invertebrate fauna. The removal of the oaks may account for the absence of the Oak Lutestring, *Cymatophorima dilata hartwegi*, since it occurs in other local oak woodlands. Similarly, the removal of the elms, coupled with later loss on account of Dutch Elm disease in the 1970's, probably accounts for the decline of the Clouded Magpie.

Butterflies

There are two rarities at Cloud Wood (white-letter hairstreak and the dingy skipper) and many of the species are common in the county, even

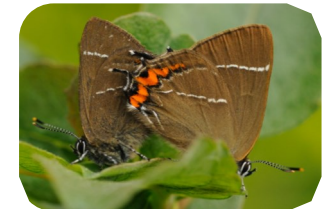
if their populations are not very high in the reserve.



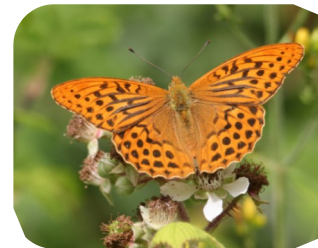
Orange tip

The brighter woodland glades support such species as the comma, the small skipper and the orange tip. Where there are patches of grassland, or where the more open rides create similar conditions, the meadow brown, the ringlet and the small copper fly on warm sunny days. In very open areas the orange tip, the common blue and the brimstone can be found.

The loss of the elms has left the white-letter hairstreak hanging on as a rarity. Its relative, the purple hairstreak, is also here.



White-letter hairstreaks
© Steve Blandford



Silver-washed fritillary © John Statham

Silver-washed fritillaries have been seen on an annual basis since 2006 which gives an encouraging sign that there might be a viable population forming.

A dingy skipper was also found in 2016 on ride next to the spoil tip. Its preferred food plants and access to open rocky ground should provide them with the habitat they need. More surveys need to be carried out to see whether this is a viable population which has just been overlooked and to monitor its presence.

Beetles

Ancient woodland is a complex structure for beetles and provides them with many different habitats. Any one species usually specialises in one part of the woodland mosaic, although it may move from one habitat to another through its life



Dorytomus taeniatus
© micropics.org.uk



Chalcoides aurata
© Flickrriver

history. The bright green metallic weevils of the genera *Phyllobius* and *Polydrusus* feed on a variety of leaves in the canopy in spring and early summer. At other times of the year the larvae feed on a variety of roots in the ground. Other canopy feeders are more specialised. The weevil *Dorytomus taeniatus* and the green and red flea beetle, *Chalcoides aurata*, feed only on sallows.

Altogether different species are found on the woodland floor. The scarce ground beetle *Bradycellus sharpi*, which is characteristic of wet woodland, has been recorded at Cloud Wood. The beetles in the leaf litter include ancient woodland species such as the weevils *Acalles ptinoides* and *Acalles roboris*. These slow moving creatures have a prehistoric air about them. They feed on fungi growing on twigs which have fallen to the ground.



Sinodendron cylindricum
© C. Butterfield, Naturespot

On account of clear felling, Cloud Wood no longer possesses the mature trees to provide a habitat for many of the rarer dead wood beetles found in some other sites of ancient woodland. However, the Rhinoceros beetle *Sinodendron cylindricum*, has been recorded in a stump here. The beetle gets its name from the rhino-like horn on the head of the male of the species and is closely related to the stag beetle. Illegal removal of dead

wood during the winter time has resulted in the edges close to the road not being abundant in dead wood. However, further into the wood, increasing amounts of dead standing and lying dead wood can be found.

The coppicing regime which is being re-introduced at Cloud Wood should benefit the fauna of the canopy and should encourage a more diverse ground fauna. Coppicing will attract further species into the wood. Any

improvement in the dead wood beetle fauna will be a much longer term process and will follow the slow maturing of trees left uncoppiced.

Dragonflies and damselflies

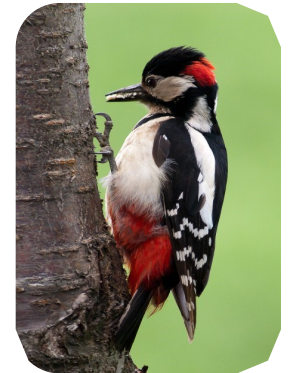


Female common darter

Surprisingly, even though there are no permanent waterbodies, dragonflies and damselflies can be seen. Brown hawkers, emperor and migrant hawkers occur hunting for smaller insects along the rides and in the coppiced areas. Common darters can also be found perching on sunny bushes. By the small pools found on the spoil tip, black tailed skimmers can be seen hovering around the surface or clinging onto the rushes.

Birds

The birdlife of the wood reflects very largely the purely deciduous regrowth and lack of management in the post-war years. There is no permanent open water, no heath, little grassland and, until the late 1990's, few clearings or margins.



Great spotted woodpecker
© Mike Snelle

The larger trees, which are regrowths from stools, are tall enough for the chiffchaff,

spread sufficiently for

blackbird and song thrush and are broad enough for tawny owl and green and greater-spotted woodpeckers. The acres of scrub are a haven for willow warbler, blackcap and garden warbler, but there are no nightingale.



Treecreepers
© B. Coyle

The Tit family are well represented along with wren and treecreeper. Woodcock is seen roding in the spring or over wintering. Jay is commonly heard and the buzzard is now a frequent resident. In the

autumn, flocks of fieldfare and redwings use the wood as a stop over and refuelling point.

The lack of diversity in the structure of the woodland habitat also means there is no redstart or spotted-flycatcher. There are, of course, no birds of conifers.

The development of the quarry may well attract species not otherwise seen in the area.

Mammals

Being elusive, mammals are often difficult to spot and are mainly nocturnal, but looking at the field signs they leave and using technology such as remote sensing cameras and bat detectors, more is being known about the mammals which reside in or visit the wood.

Muntjac deer are known to visit the woods from the browsing signs and footprints they leave in the soft mud. Fortunately, they are solitary animals so do not create a negative impact on the woodland. Rabbits and hares nibble on the stakes and binders stacked for selling during the winter.



Muntjac deer
© D. Sutherland



Pipistrelle bat
© Amy Lewis

Pipistrelle and unidentified *Myotis* bats have been heard feeding on small flying insects along the rides and in the clearings but none of them have used the bat boxes put up for them.

Wood mice and bank voles have been filmed rummaging around in the leaves and foxes and badgers mooch around digging for worms and grubs.

Amphibians

Frogs, toads and newts have been recorded in small numbers on the nature reserve.



Frog
© Chris Lawrence

PART THREE

Future Management

The Quarry

The present output of Breedon Cloud Quarry is about 1.2 million tonnes of material per year. The major market for the stone is, at present, for motorway construction, especially in the West Midlands area. A highly successful product is 'Golden Amber Gravel'. This is so called on account of its rich golden colour. It is used particularly for ornamental paths, including those at Buckingham Palace.

Only one to two per cent of the waste produced by the quarry is tipped; much is used for landscaping elsewhere. There is also a programme for reclaiming stone from old tips within the quarry and it is not anticipated that there will be a need for tipping outside the present limits.

The quarry floor has now reached a depth of 100 metres and it is anticipated that future workings will take the level down a further 10 metres. The quarry company has been given permission to develop the southern end of the quarry and this will mean removing a total of over 1 million m³ of overburden. Some remaining 4.8 million tonnes of stone is expected to be removed from the northern part of the quarry.

Breedon plc continues to operate as a local concern and its employees are nearly all drawn from the surrounding villages. It is mindful of the effects which its essential activities have on the local wildlife and will continue to work with the Wildlife Trust for securing the long term future of the reserve.

Cloud Wood Nature Reserve

A long-term management plan for the wood has been drawn up by the Leicestershire and Rutland Wildlife Trust in conjunction with Natural England. The prime concern is to maintain and where possible enhance this habitat together with the populations of locally rare species present.

Several approaches have been adopted. In the first place the belt of woodland will be left around the perimeter. The site will thus retain its present appearance which has been a familiar and much loved landmark for generations of local people.

Coppicing

It was felt that there was sufficient density of appropriate trees and shrubs for at least part of the wood to be managed by coppicing. This system produces a very visually pleasing habitat which generates a great deal of public interest and creates a more structurally diverse woodland. Approximately one third of the wood has been coppiced on varying rotations – 4 yearly, 12-14 years and 25 years.



David and Ian coppicing hazel

The coupes are conveniently near the wood's entrance in order to minimise disturbance to the remainder of the reserve. Coppicing is dependent on the availability of funds as well as the numbers of volunteers who come forward to assist with the manual work. Fortunately there is a Friday Volunteer Group who are dedicated and work hard throughout the winter to coppice areas specified in the management plan. The stakes and binders they produce are sold to hedgelayers and other produce is sold to a local company who turn them

into products suitable for forest school use.

The rides and glades



Raking the ride arising

The centre of the path is mown each year but the ride edges are mown on alternate sides to ensure that some flowering plants and vegetation remain for the autumn insects. The mown material is raked off the rides and put into several large piles off the ride for the benefit of insects. The zone 2 system involves mowing the rides but also cutting back regenerating trees to a tree heights width to allow more light onto the ride. This is done on some rides but not all as enclosed rides are important habitats too.



Cutting back tree regeneration along the rides

Glades are also created at ride intersections and scallops are created along some of the rides to create sheltered areas suitable for wildlife, especially butterflies and other insects.

The spoil tip

The spoil tip was created in the 1960's, destroying part of the wood. The southern section has been colonised by birch and mosses and the whole area has been left to regenerate naturally, providing a good opportunity to observe this process. Calcareous loving plants have begun to colonise the spoil tip area creating large patches of wild strawberry, marjoram and birds-foot trefoil.



Woodland to the south before it was felled and the spoil tip created 1962, Cambridge Air Photos



Dingy skipper
© D. Nicholls, Naturespot

Common centaury, self heal and carline thistle have also been gradually colonising this area of bare ground.

Surprisingly, no reptiles have ever been seen basking on the exposed rocks.



Common centaury



Naturally regenerating spoil

The habitat is suitable for insects such as bees and very recently the dingy skipper which like to bask on the exposed rocks. Bee orchids also like this disturbed open ground. In the last couple of years, pyramidal orchids have appeared.

Access

Under the terms of the Deed of Gift from the previous owners, access to Cloud Wood is limited to members of the Trust, or people with a permit which is obtained for free from the Trust. Within these constraints the Trust proposes to use the reserve to promote nature conservation in its broadest sense.

There is no public access to the spoil tip area.

Visitors can obtain information about how accessible the nature reserve is by looking at:

www.phototrails.org/default.cfm?walk=Cloud-Wood-Nature-Reserve&page=trail&walk_id=418

Scientific names of species of flowering plants

Yellow-star-of-Bethlehem	<i>Gagea lutea</i>
Greater burdock	<i>Arctium lappa</i>
Dwarf thistle	<i>Cirsium aucule</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Common valerian	<i>Valeriana officinalis</i>
Purple small-reed	<i>Calamagrostis canescens</i>
Violet helleborine	<i>Epipactis purpurata</i>
Hairy wood-rush	<i>Luzula pilosa</i>
Yellow pimpernel	<i>Lysimachia nemorum</i>
Giant bell-flower	<i>Campanula latifolia</i>
Wild strawberry	<i>Fragaria vesca</i>
Woodruff	<i>Galium odoratum</i>
Herb-paris	<i>Paris quadrifolia</i>
Greater butterfly orchid	<i>Platanthera chlorantha</i>
Small-leaved lime	<i>Tilia cordata</i>
Pendulous sedge	<i>Carex pendula</i>
Wood mellick	<i>Melica uniflora</i>
Early purple orchid	<i>Orchis mascula</i>
Bee orchid	<i>Ophrys apifera</i>
Carlina thistle	<i>Carlina vulgaris</i>
Solomon's seal	<i>Polygonatum multiflorum</i>
Musk thistle	<i>Carduus nutans</i>
Crosswort	<i>Cruciata laevipes</i>
Marjoram	<i>Origanum vulgare</i>
Bird's-nest orchid	<i>Neottia nidus-avis</i>

SOURCES OF INFORMATION

Primary sources

LRO Leicestershire Record Office: Grey Papers DG 20 DE 1982; Fisher Manuscripts 44D31 DE 170; Shields Manuscript 1937.
Enville Hall Archives, Staffordshire.
Public Record Office, London: E 315 papers, SC2/183 papers.

Leicester Journal (19th century)

Breedon plc in pers. com.

Harlow Bros, Timber Merchants of Long Whatton and in particular the recollections of V J (Bob) Harlow.

Adrian Russell, County Moth Recorder

The late Dr. Derek Lott, former Keeper of Natural Life, Leicestershire Museums, Arts & Record Services.

Dr Anthony Fletcher, lichenologist

Bas Forgham, Hon Secretary, Leicestershire & Rutland Wildlife Trust.

Michael Jeeves, Head of Conservation, Leicestershire & Rutland Wildlife Trust.

Mr Shields, family member who used to own the woodland.

Secondary sources

LRWPP Leicestershire and Rutland Woodlands Past And Present.
Anthony Squires & Michael Jeeves, Kairos Press, 1994.

HG Horwood & Gainsborough, The Flora of Leicestershire and Rutland.
Oxford University Press, 1933.

Primavesi & Evans The Flora of Leicestershire. Leicestershire Museums, 1988.

John **Nichols**, The History and Antiquities of the County of Leicester, Volume 3 Part 2 1804. S R Publishers, reprint 1971.

Rev J **Curtis**, A Topographical History of the County of Leicester. 1831.

Hastings Manuscripts vol. I Historic Manuscripts Commission. 1928.

Barrie **Cox**, The Place Names of Leicestershire. Unpublished PhD thesis University of Nottingham 1971.

QMJ Quarry Managers' Journal

LMVN Leicestershire Medieval Village Notes. George F. Farnham, Privately printed 1930s.

Richard **Mackinley**, An Edition of the Cartulary of Breedon Priory. Unpublished MA thesis, Manchester University 1950.

Oliver **Rackham**, Ancient Woodland, Its History, Vegetation and Uses in England. Edward Arnold 1980.

John **Prior**, 'A Map of Leicestershire' 1779.

Hartley Robert F Hartley, The Medieval Earthworks of North-West Leicestershire. Leicestershire Museums Service, 1984.

THLAS Transactions of the Leicestershire Archaeological and Historical Society

Jeeves, M. 2011 The Flora of Leicestershire and Rutland: Checklist and Rare Plant Register. LRWT, Leicester.

Cossa, N. 2011, Baseline monitoring of Cloud Wood Nature Reserve. LRWT. Unpublished

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Thank you to the North West Local Group for raising the funds to update and republish this booklet



This booklet is in memory of all those who have contributed to protecting, enhancing and improving our knowledge and beauty of Cloud Wood Nature Reserve