

BOURNE WOOD

 **A portrayal of a wood in Kesteven** 

Richard G Jefferson

With contributions from David Evans, Fraser Bradbury,
Andrew Powers and Robert Lamin

Friends of Bourne Wood



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INTRODUCTION

Bourne Wood is situated immediately west of the town of Bourne in the District of South Kesteven in the County of Lincolnshire. It is contiguous with Pillar Wood immediately to the east and in the north incorporates Fox Wood and to the south, Auster Wood. The woodland complex (including Pillar Wood) covers an area of around 300 hectares (741 acres) but for the purposes of this booklet, the focus is on the Forestry Commission (FC) owned Bourne/Fox Wood which amounts to around 225 ha (556 acres). It overlooks the town and the reclaimed fens to its east. It lies at altitudes between 20 and 50 metres with the land generally rising in an east to west direction. The wood is owned by the FC who manage it for timber production, wildlife and informal recreation. A voluntary group, the Friends of Bourne Wood ('The Friends'), organise an annual programme of guided walks and events in the wood and promote its amenity and educational value.





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HISTORY & ARCHAEOLOGY

There is evidence that the current wood formed part of a larger area of woodland and forest around Bourne and in Morton and Edenham parishes referred to in the Domesday Book of c.1086. This in turn formed part of a much larger expanse of woodland and forest stretching as far as Northamptonshire known as Brunneswald or Bromswold. Around this time, the major landowner in Bourne was Ogier the Breton whose holding was likely to have included most of Bourne Wood.

Reference to woodland in Bourne appears in charters and surveys throughout the medieval period although it is difficult to attribute these to areas of the current Bourne Wood with any certainty.

Bourne Wood passed into the hands of the Marquis of Exeter possibly soon after the dissolution of the monasteries in the mid-16th Century.

Various relics of mediaeval wood banks can be still be seen in the wood with the best-preserved bank and ditch system following the parish boundary between Edenham (Pillow Wood) and Bourne Wood. This is 3 metres wide and up to 0.7 metres high with a slight ditch, to the west (Figure 2). The purpose of these wood banks was usually to demarcate ownership or to exclude deer.

The earliest map of Bourne Wood is the 1770 Inclosure award. Whilst this map is limited in its depiction of the wood, it does show the eastern boundary but with no internal detail (LAO Bourne Par. 17/1). The Morton Inclosure plan names Fox Wood, referring to it as '*woods in Morton Lordship*', though no owner is given, unlike Nab Wood, adjacent to Fox Wood, which was owned by the Earl of Exeter (LAO Kesteven Award 54).

No early maps of Edenham parish, apart from Grundy's book map that does not depict Auster or Pillow Woods (Grundy 1753), are available.

There are references from the 18th Century to Bourne, Auster and Pillow Woods producing annual rental income for the respective landlords.

From 1815 onwards, the successive Ordnance Survey maps indicate that the outline of the wood has hardly changed to the present day.

There is little by way of information on the management of the wood prior to the 1930s. There is no doubt it would have been an important source of timber (for charcoal, building, thatching spars, tool-making) from early times and, prior to its acquisition by the Forestry Commission, it was thought to have been managed as coppice-with-standards. Various other activities are likely to have been carried out at various times in history such as the keeping of pigs (pannage) and the collection of foodstuffs and the hunting of game. Since acquisition by the Forestry Commission in 1926, it has been managed as a mixed coniferous and broadleaved plantation. Further details are provided in the section on Forestry.

Hereward the Wake

Hereward the Wake (c. 1035 - c.1072) was an 11th-century leader of local resistance to the Norman conquest of England. The existence of Hereward is not generally disputed, though accounts of his life and deeds almost certainly contain exaggerations and some outright fictions.

Hereward's base, when leading the rebellion against the Norman rulers, was in the Isle of Ely, and according to legend, he roamed The Fens, covering north Cambridgeshire, southern Lincolnshire and west Norfolk, leading popular opposition to William the Conqueror.

The earliest references to his parentage make him the son of Edith, a descendent of Oslac of York, and Leofric of Bourne, nephew of Ralph the Staller. Alternatively, it has also been argued that Leofric, Earl of Mercia and his wife Lady Godiva were Hereward's real parents. There is no evidence for this, and Abbot Brand of Peterborough, stated that his place of birth is supposed to be in or near Bourne in Lincolnshire. However, it is now thought that Hereward was the nephew of Abbot Brand of Peterborough and his father was Asketil, one of the Abbot's brothers.

The Domesday Book shows that a man named Hereward held lands in the parishes of Witham-on-the-Hill and Barholm with Stow in the south western corner of Lincolnshire as a tenant of Peterborough Abbey, prior to his exile. Since the holdings of abbeys could be widely dispersed across parishes, the precise location of his personal holdings is uncertain but was certainly somewhere in south Lincolnshire.

Charles Kingsley's 1865 novel *Hereward the Wake: the Last of the English* elevated Hereward to the position of a national hero. Hereward the Wake, around 1071, sought refuge in the Brunneswald forest, and it is rumoured that he may have found sanctuary in Bourne Wood.



GEOLOGY AND SOILS

The ridge (the Kesteven Plateau) upon which Bourne Wood stands above the fens is composed of rocks laid down during the Middle Jurassic (176 to 161 million years ago). The sediments that form these rocks were deposited in shallow, tropical seas. Evidence for such a climate may be seen in some of the fossils that occur in the field brash in the area surrounding the woods. Apart from fossil oysters, the remains of extinct animals such as ammonites and belemnites, corals are also present. Coral reefs are today generally restricted to areas where sea-water temperatures are greater than 25-29°C or between latitudes 30°N and 30°S. The Jurassic sediments that directly underlie Bourne Wood consist (in ascending order) of the Cornbrash Formation (iron-rich limestones), the Kellaways Clay (mudstone) and Kellaways Sand (sands and silts with seams of shells). Members of the Kellaways Formation and the Oxford Clay Formation (a stiff blue-grey mudstone).

Boulder clay (or till) forms a discontinuous blanket that rests on the Jurassic sediments, particularly on the Oxford Clay along the top of the ridge. It consists of ground up rock and larger rock fragments formed by the erosion of the bedrock that took place below the ice sheet or glacier. This material was transported by the ice sheet to other locations where, if the ice was wasted (melted), the rock flour and fragments were deposited as boulder clay. The boulder clay in and around Bourne Wood may be seen in the roots of fallen trees, ditches, and ploughed field, where pebbles of red sandstone, flint and chalk may be found. The red sandstones are Triassic sandstones, the nearest outcrops of which are in Nottinghamshire, whilst the nearest chalk is on the Lincolnshire and Yorkshire Wolds. This particular till is probably attributable to the Wolstonian Stage of the late Middle Pleistocene, approximately 350,000-130,000 years ago.

Together, these rocks influence the nature of the soils and the drainage of the woods in ways that are reflected in the vegetation and land-use of the woods and surrounding area. The other factor is that Bourne Wood is situated in an area of England with low rainfall; around 24 inches (610mm) per annum.

Approximately two-thirds of the area of the woods rest on Oxford Clay and boulder clay. This is reflected in soils that are clayey or loamy, slowly permeable, seasonally wet and slightly acid, although they may be base rich in composition. The Oxford Clay is particularly impermeable, and generates thin soils that may be water-logged in winter and concrete in summer. Where they have been disturbed (such as around the ponds) the soils are very slow to recover. Where the boulder clay is thickest on the ridge, the soils may be better drained, and the presence of chalk in the till makes them base-rich and suitable for agriculture. A significant portion of the woodlands (particularly ancient woodlands) in South Kesteven appear to be associated with the distribution of boulder clay and Oxford Clay. This is likely to reflect the poor agricultural properties of the soils (particularly on the Oxford Clay). These woodlands may have survived because of the poor agricultural value of the soils they rest on.

The eastern side of the woods are largely underlain by the Kellaways Sand Member, which generates free draining, slightly acid, permeable soils. Parts of this area support a ground flora dominated by bluebell and wood anemone with occasional wood sorrel. Beyond the woods, the fields to the east and north are underlain by the Cornbrash Formation. This iron-rich limestone produces freely draining, lime-rich, loamy soils, and as indicated by its name, this rock and its associated soils are good for arable and cereals in particular.



View of Bourne Wood looking west from Blind Well field (top)
Bourne Wood – northern boundary (bottom) © Richard Jefferson

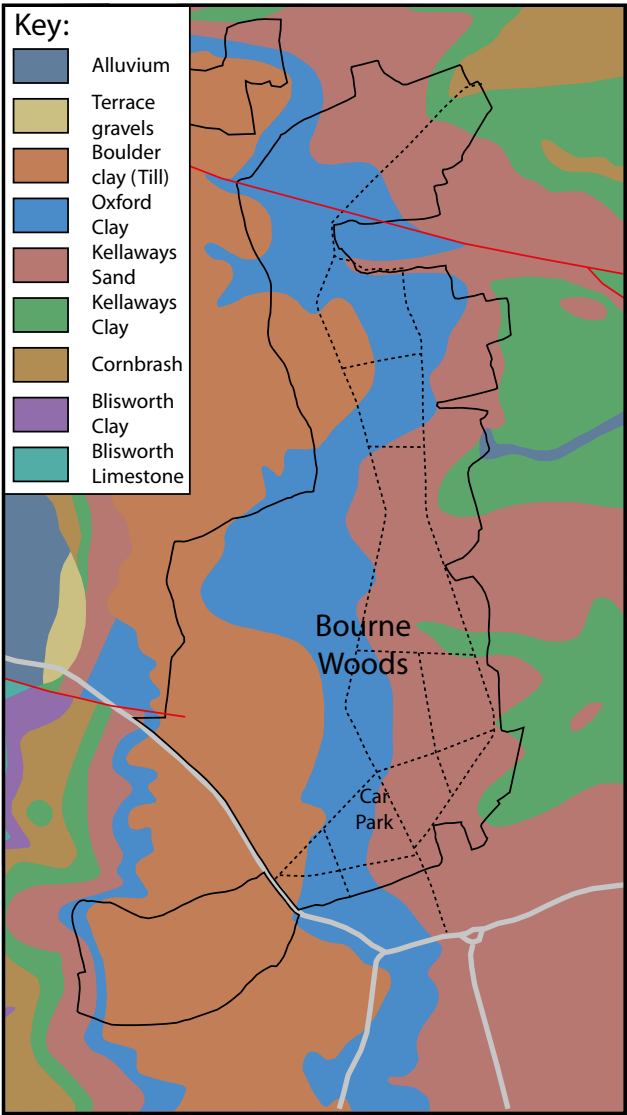


Figure 1: Generalised geology of the Bourne Wood area.

Reproduced with permission of the British Geological Survey

FLORA AND HABITATS

Woodland and ponds

Bourne Wood is listed on the Ancient Woodland Inventory for England as a Planted Ancient Woodland site (PAWS).

Ancient woodland is defined as an area that has been continuously wooded since at least 1600 AD.

‘Continuously wooded’ in the definition does not require there to have been a continuous physical cover of trees. For example, many woods will have been subject to felling and replanting and coppicing as part of regular woodland management. Planted ancient woodlands are ancient woodlands where the former native tree cover has been felled and replaced by planted trees. These will include conifers such as Corsican pine or European larch but also broadleaves such as pedunculate oak and wild cherry.

The wood is one of the largest ancient woods in Lincolnshire. It occurs on the South Kesteven plateau which is one of 3 main concentrations of ancient woodland in Lincolnshire. Lincolnshire has some of the lowest cover of ancient woodland in England.

Although the Wood has been substantially modified in the 20th Century by silviculture, most notably by replanting of some blocks with conifers, it has nonetheless retained much of the wildlife typical of less modified ancient woods.

Ponds

In 1972, the ponds were constructed in the northern part of Bourne Wood. The ponds were instigated by the then forester, Mr Parker, who was a keen

fisherman and naturalist. The original plan was to construct one large pond. However, this would have required a large dam and there was a concern that if this gave way it might flood Bourne! Hence two smaller ponds were constructed.

Flora

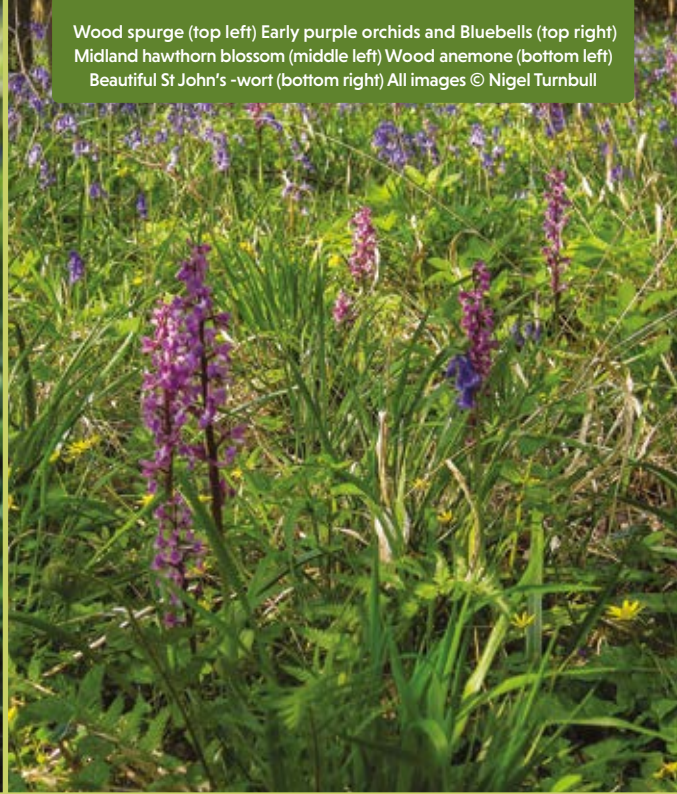
Bourne Wood has a very rich flora and 283 species of flowering plants and ferns have been recorded over the last 40 years including trees, shrubs, herbs, grasses, sedges and rushes. The full list of species can be found at Appendix 1. This includes introductions, such as the various trees that have been planted for commercial forestry purposes.

Of these, 72 are so-called Ancient Woodland Indicators (AWIs) and 11 species are scarce or rare in Lincolnshire (Appendix 1). The herbaceous AWIs are species that are usually long-lived perennials which spread very slowly, often having heavy seeds. They are thus poor colonists of more recently established woodlands due to their poor powers of dispersal and their inability to tolerate the competition from more vigorous plants that are typical of newly planted woodland on more fertile soils.

These include relatively widespread species such as the iconic bluebell, dog’s mercury, wood sorrel, wood anemone, pignut, wild garlic, yellow archangel and the grasses, wood melick and wood millet. Rarer species include herb paris, early purple orchid, wood vetch, wood spurge and nettle-leaved bellflower.

Trees and shrubs of particular note include wild service, small-leaved lime, aspen, Midland hawthorn and spindle.

Wood spurge (top left) Early purple orchids and Bluebells (top right)
Midland hawthorn blossom (middle left) Wood anemone (bottom left)
Beautiful St John's -wort (bottom right) All images © Nigel Turnbull



The wood is also important for its rich assemblage of plant species typical of semi-natural dry grasslands and damp habitats such as marshes and wet grasslands associated with the rides. The former include species such as devil's bit-scabious, betony, common knapweed, yellow meadow vetchling, tormentil and beautiful St John's-wort. Marsh species include bugle, wild angelica, greater bird's-foot trefoil, marsh bedstraw, meadowsweet, ragged robin and creeping jenny.

Many of these plants are now rare in the surrounding countryside due to the large losses of wildflower-rich grasslands and marshes over the last 60 years.

The ponds have added additional new habitat to the wood supporting wetland and aquatic plants and invertebrates including dragonflies and damselflies. At the time of writing, the ponds are gradually silting up and reedbed is increasing.

Mosses and liverworts

Although not fully documented, the wood supports a diverse range of mosses and liverworts. Typical species associated with ancient woodland include common striated feather-moss (*Eurhynchium striatum*), hart's-tongue thyme-moss (*Plagiomnium undulatum*), greater featherwort (*Plagiochila asplenoides*) and common tamarisk-moss (*Thuidium tamariscinum*).

National Vegetation Classification

The wood has not been mapped using the National Vegetation Classification, although it would appear that two NVC types are present, W8 *Acer campestre*-*Fraxinus excelsior*-*Mercurialis perennis* woodland associated with clay soils over Oxford

Clay and Till deposits, and W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland associated with soils over the Kellaways sand.

Small-leaved lime or Pry tree

This is one of our most beautiful trees and has a fascinating history and ecology and a long association with human activities. It is tolerant of a wide range of soil conditions ranging from acid to alkaline. In its heartland, in parts of eastern England, it can be so abundant as to justify the use of 'lime' as an epithet. An example would be the Lincolnshire limewoods to the east of Lincoln. In Bourne Wood it is only occasionally found.

The Anglo-Saxon word *Linde* refers to the tree and has given rise to place names such as Linwood near Market Rasen. Lime is a long-lived tree and has been managed for coppice, producing poles and charcoal, and the light but strong even-grained wood was used for furniture, panelling, wooden objects such as food containers, toys and piano and organ keys.

The bast from this tree has been used since ancient times for making low grade string and cordage. Lime flowers were important in honey production. Lime wood was frequently used by the 17th-century master carver Grinling Gibbons who produced decorative carvings for Burghley House, Blenheim Palace, Hampton Court and St Paul's Cathedral.



Wood vetch

Wood vetch is a robust, sprawling or climbing perennial of the pea family. It is a handsome plant with whitish flowers with purplish veins reaching 5 or 6 feet in height (to 200 cm).

The fruit is like a small black peapod. It occurs in wood borders, scrub and cliffs throughout Great Britain but is rather uncommon. It is rare in eastern and south eastern England including Lincolnshire (Appendix 1).

Early purple orchid

Early purple orchid is strongly associated with ancient woodlands and limestone grassland. It is one of our earliest flowering orchids and is in flower from April until early June. It has a large number of local names, including Goosey ganders and Adder's meat, suggesting that it was once very widespread and abundant.

Wood spurge

A perennial plant with evergreen leaves topped by yellowish-green flowers. It is known as Devils cup and saucer in south-west England. This plant reaches the northern edge of its British distribution in south Lincolnshire. It prefers the lighter parts of woods especially along the edge of woodland rides and thrives in woods managed by coppicing. It is strongly associated with ancient woodland. Like most members of the spurge family, it contains a poisonous milky white latex-like sap. It is sometimes cultivated in gardens.

The Wild service or Chequer tree

A widespread but rather uncommon medium-sized deciduous tree (up to 25m) that is largely confined to ancient woodland. It has a marked preference for woods on heavy clays or soils over limestone. It is most abundant in southern and central England and reaches its northern limit in Cumbria. In Lincolnshire, it is generally rare except in its two main centres in south Kesteven (including around Bourne) and the Bardney Forest area, east of Lincoln. It is easily overlooked as it usually occurs as single individuals but these can form suckers giving rise to a group of stems. The tree has distinctive maple-like leaves with sharply pointed triangular lobes.

The creamy-white flowers appear in May and are pollinated by insects. The orange-brown egg-shaped fruits develop in September. They were formerly used as a flavouring for beer and as a herbal remedy for indigestion. The patterned fruits are thought to be the reason why it is known as the chequer tree. The fruits are edible when they have been allowed to over-ripen by storage (bletting). Birds such as song thrush and redwing will feed on the fruits while marsh tits have been observed extracting the seeds.

Fungi

The fungi of the wood have been reasonably well documented. A species list, however, has not been included here as there are many species and very few fungi have English names. A list is available on request. The text box gives a selection of species some showy, some familiar and others with unusual features.

Some Bourne Wood fungi

Chicken in the woods (*Laetiporus sulphureus*) A bright yellow to orange bracket fungus on the trunks of a wide range of trees. Strips of the dried fleshy brackets were used in the past as tinder known as amadou.

Fly agaric (*Amanita muscari*) A familiar toadstool with a scarlet to orange-red cap flecked with small white patches. Poisonous and used as an intoxicant alcohol substitute. Associated with birch but sometimes with pines, spruce and beech.

Puff balls (*Lycoperdon* species) Often pear-shaped or sack-like spheres which are white or pale brown in colour. At maturity the 'sack' ruptures and spores are propelled into the air when touched or when hit by rain drops.

Honey fungus (*Armillaria mellea* agg) Cap yellow-brown. A destructive root parasite. On deciduous and coniferous trees. The mycelium is luminescent and infected wood will glow in the dark.

Parasol mushroom (*Lepiota procera*) Cap greyish-brown with dark brown scales. Edible.

Shaggy cap (*Coprinus comatus*) Cap white at first with shaggy scales. Gills pink- white at first turning black with age. Edible when young.

Dog's stink horn (*Phallus impudicus*) The fungus initially develops as a pale brown egg-like structure which then develops a long hollow cylinder topped by a black, slimy mass of spores smelling of rotting flesh which attracts flies. These then spread the spores.

Sulphur tuft (*Hypholoma fasciculare*) Cap sulphur-yellow, gills yellow-green. On tree stumps.

Horse mushroom (*Agaricus arvensis*) A close relative of the field and wood mushrooms. Grassy rides. Edible.

Earth star (*Geastrum striatum*) A curious brown fungus with arm-like segments which support a central 'head' which is a puff ball containing the spores.



Wood blewit (top) Parrot waxcap
(bottom) © Richard Jefferson

Fauna

Birds

Appendix 2 lists the birds recorded from Bourne Wood. The bird fauna is fairly typical of a large wood in the eastern English lowlands. The Lincolnshire Bird Club undertakes regular bird ringing in the Wood. This activity provides an insight into bird movements in the UK and Europe. Some bird species are surprisingly mobile. Common and lesser redpolls and siskins ringed in the wood breed further north in Scotland and Scandinavia. Siskins ringed in Bourne Wood have been recovered in various places in the UK such as Scotland and from Sweden and the Low countries.

Buzzard

The buzzard is a medium-sized bird of prey or raptor that may be seen soaring above woods and farmland looking for prey. It has a distinctive flying shape, with broad wings and a fanned tail, and a very distinctive call, which sounds like the mewing of a cat.

This species has undergone a major expansion over recent decades and is now widespread across Great Britain. This has been primarily due to a reduction in persecution. It nests mostly in mature trees in woodland. It feeds on a wide range of mammals and smaller birds but also on carrion and invertebrates. Rabbits, rodents and small birds often make up a high proportion of the diet in many areas. Bourne Wood has several nesting pairs.

Eurasian woodcock

This secretive wader is primarily a woodland species. It relies on its cryptic camouflage to avoid detection. It is beautifully coloured to resemble the dead leaves and bracken found in its typical woodland habitat. The male display during the breeding season (commencing in late February) is called 'roding' where it flies low above the tree tops with a series of grunt and whistle calls searching for a female in the woods below. Woodcock feed on invertebrates, especially earthworms. In winter, woodcock may feed at night on pastureland and roost there during the day.

The resident British population is supplemented in winter by an influx of continental birds from Eastern Europe and Scandinavia. It is a widespread British breeding species but it has declined since the 1980s possibly due to increased deer numbers, recreational disturbance, loss of permanent pasture and changes in woodland management.

Nightingale

A migrant, insectivorous species, whose breeding range is south of a line from the Severn to the Humber. Birds tend to arrive in mid to late April and begin nesting in May. Nightingales nest on or near the ground. They leave in late August or early September. It is well towards the northern edge of range in Lincolnshire but is now only sporadically recorded in Bourne Wood. This is possibly due to lack of suitable habitat (it likes dense young coppice) and possibly increases in deer but other factors that might have contributed to its decline include pressures on migration and loss of wintering habitats in west Africa. It is famed for its rich and varied song delivered from dense cover and best heard around dawn.



Great-spotted woodpecker (top left), Buzzard (top right) and nuthatch (bottom) © Terry Barnair

Mammals

Appendix table 3 list all the mammals that have been recorded from the wood. It includes 9 species of bat. Of particular note are the colonies of the scarce Leisler's bat and Barbastelle bat, the latter is a rare species of conservation priority under the England Biodiversity Strategy and European Community Habitats and Species Directive.

Noctule

The Noctule is the largest British bat with a wingspan of up to 45cm. It is a fast flier capable of travelling long distances. The Noctule is one of the earliest to emerge in spring and summer evenings. It forages over lakes, ponds, marshland and meadows where it feeds on flies, beetles and moths. It mostly roosts and hibernates in tree holes. While it remains widely distributed in England and Wales, it is becoming more localised especially in intensively farmed areas lacking suitable roosting and feeding habitats.

Leisler's bat

This bat, formerly known as the hairy-armed bat, is rather scarce in Britain and is absent from Wales, rare in Scotland but widespread in Ireland. It is similar to the noctule but smaller (wing span 26-34 cm) but, like its bigger relative, the noctule, it is a fast flier and can forage over long distances from the roost. In Bourne Wood it has used bat boxes. It prefers to forage over open habitats such as wood margins and pastures and roosts in trees and buildings. Leisler's bat feeds mostly on flies but also on moths and beetles. It probably hibernates in tree holes.

There are 3 species of deer occurring in and around the wood. Fallow deer tend to be most often seen whereas the introduced muntjac and native roe deer are more elusive. The muntjac has increased greatly in recent years and has spread across much of central England.

Although people enjoy seeing and watching deer, unfortunately their growing numbers are of increasing concern across Great Britain and are having negative impacts on woodland wildlife reducing the abundance and mixture of the characteristic woodland plants, birds, small mammals and invertebrates.

Amphibians and reptiles

Six species of amphibians and reptiles have been recorded from Bourne Wood (Appendix 4), all generally widespread and common species.

Grass snake

The grass snake is Britain's largest snake reaching up to 130 cm in length. It is non-venomous and harmless. Grass snakes are wary, fast moving reptiles which are difficult to observe. It occurs in rough grassland and other tall vegetation and usually stays fairly close to water. The top and flanks are olive green, grey or brown with a row of black bars along each flank. The underside is white or cream with black chequers. It has a distinctive yellow/cream/white and black neck collar. Eggs (up to 40) are laid in June and July and the hatchlings emerge in autumn. It feeds mostly on amphibians but may occasionally eat small fish.



Invertebrates

Butterflies

Twenty six species of butterflies have been recorded from Bourne Wood (Appendix 5). This includes some species which are confined to woodland or woodland edge habitats such as purple hairstreak, white-letter hairstreak and white admiral. The adults of the first-named species, whose caterpillars feed on pedunculate oak, are rarely seen as they spend most of their time in the tree tops feeding on honeydew, especially on sunny summer evenings. White letter hairstreak adults are elusive for similar reasons. White admiral is a southern species and reaches the northern limit of its British distribution in Lincolnshire, where it is rather local.

White admiral

This attractive black and white butterfly of woodlands is on the wing in early July until mid-August. It has a distinctive flight with short periods of wing beats followed by long glides. The caterpillars feed on honeysuckle (*Lonicera periclyamen*) which is abundant in the wood as is bramble, which provides nectar for the adults.



Silver-washed fritillary (top left), Southern hawker dragonfly (top right) and White admiral (bottom) © Nigel Turnbull

Moths

Appendix 6 lists the moths recorded from the wood. This is likely to be only a partial reflection of the wood's moth diversity. The text box provides information on two scarcer species.

Light orange underwing

A rather scarce day-flying moth appearing orange-brown in flight. The adults may be seen flying high around aspen trees, the larval food plant, in open woodland in March and April. It is confined to southern England and reaches the northern limit of its distribution in Lincolnshire.

Angle-striped Sallow

A scarce species with two main areas of scattered distribution, in central England and central Scotland. It inhabits heaths and open woodland and is on the wing in August and September. The larvae feed on silver birch (*Betula pendula*) and downy birch (*B. pubescens*) and occasionally aspen. It is closely associated with large sites where there has been a long continuity of the presence of its larval food plants.

Dragonflies

Appendix 7 lists the dragonflies and damselflies recorded from the Wood.

Some species recorded will no doubt be breeding in the ponds or other water bodies in the Wood while others will be 'wanderers' from nearby habitats. It is known that some species can range over distances of more than a kilometre (0.6 mile).

The four-spotted Chaser

This dragonfly has a brown, black-tipped, broad and stout abdomen. The larvae occur in a wide variety of water bodies including ponds and slow-flowing streams. The adults are strong fliers and may be encountered far from their usual breeding sites. The male dragonflies are strongly territorial. The species is on the wing from late May until mid-August. They may often be seen perching on tall plants near their breeding habitats. The species is widespread in Great Britain and, in midsummer the population is supplemented by migrants from the Continent.

Other invertebrates

There has been some limited recording of other invertebrate groups in Bourne Wood especially flies and beetles. However, it is probable that the wood is of value for other invertebrates given its size and botanical richness but its heavy modification by planting, lack of structural variation and lack of old trees and standing dead wood has reduced its overall value.

Several species of long horn beetles and the malachite beetle have been recorded from Bourne Wood. The adults of these beetles feed on flowers whereas the larvae occur in decaying wood. A number of hoverflies have also been recorded including the rather local species *Helophilus hybridus*, the adults of which may be seen around the ponds or ditch margins and *Melangyna quadrimaculata*, which can be found on blackthorn blossom and the catkins of willows and hazel in spring.

FORESTRY

The Forestry Commission was established in 1919 and charged with the single aim of establishing a strategic reserve of timber. This move was a reaction to the problem of importing sufficient timber to satisfy our wartime demands as a direct result of the U-boat blockade. In establishing the FC the government of the day decided that replanting woodlands devastated by the war effort and expanding productive forests to create this home grown reserve was of such national importance that it would be achieved irrespective of cost. Many private land owners whose own financial security had been undermined by both the war and the social changes which followed were only too pleased to avoid the costs of replanting woodland by leasing or selling their land to the newly formed FC. As part of the drive to acquire land for planting in 1926 the FC acquired the freehold and leaseholds of Bourne Wood from the Grimsthorpe estate.

Felling during the war had left the woodland as mainly scrub or sapling cover that included re-generating hazel, pedunculate oak, silver birch, small-leaved lime, wild service, aspen and hawthorn but also much ash.

During the 1920s, there was an overwhelming demand for softwood from coniferous species and the smaller demand for hardwood could already be met from existing woods. Over the next decade in Bourne Wood, a substantial restocking program began. Mainly light-demanding species were chosen including Sitka spruce and European larch, although some moderately shade-tolerant Douglas fir was also planted. This would have seen much of the woodland scrub cover removed to allow the light demanding species to establish and it appears from

looking on the ground today, that a proportion of ash regeneration was also accepted into the plantations. In the case of Douglas fir, a common practice was to leave a light overstorey to assist its establishment and ash would have been considered a suitable 'nurse' for Douglas fir in this way. In the 1930s, labour shortages were commonplace with both migrant workers and also contractors used to assist. The contractors would purchase the standing wood with fencing materials reaching a premium price and the rest generally being sold as firewood.

During this time attempts were made to kill the remaining oak by introducing herbicide into the stems using the Jim Gem hatchet. This had mixed results with some trees forming a protective zone along the medullary rays so preventing further spread of the herbicide and thereby surviving the ordeal.

The majority of the restocking/conversion to high forest took place between 1927 and 1932. The work appears to have been done in a systematic fashion starting at the northernmost point, Fox Wood and working south and east. By 1932, 80% of Bourne Wood would have been young conifer plantation and would have looked very different to today.

From 1932 to 1949 there appears to have been a break in the planting works and one can only assume that this was down to the Second World War, or at least the latter part would have been. It is not clear if tending operations such as weeding and cleaning continued during the war years when land girls often took on this role, but it can be assumed that between 1932 and at least 1938/9 weeding and cleaning would have taken place otherwise it is very doubtful that the young trees would have

established so well. These establishment operations and the lack of labour would have certainly meant a switch in the works focus. It is also very likely that at this point much of the invasive ash and broadleaves present would have gained more of a foot hold in the wood.

Planting work recommenced in 1950 through until 1960 with a large restocking program being undertaken. However, interestingly, European larch did not feature in this program and, in some areas, it appears that some of the original larch planting was removed and replanted with a different tree species, including Norway spruce. An example of this is the strip of Douglas fir planted close to the

car park that exists today. This crop change may well have been a result of the excellent growth and form the original Douglas fir plantation had shown as can still be seen today. What is clear however, is that both Sitka spruce and European larch had fallen from favour in the second tranche of plantings. The systematic plantings continued with the western side of the woodland receiving the lion's share of the works. It is interesting to speculate on the effects of the cold winds from the east on the original plantings on that side. Both the north and eastern sides of the wood had been planted first and one assumes this was deliberate in order to establish shelter for subsequent plantings but this may have led to poor form for these original trees.



On the western side species choice was again fast-growing conifers but some areas were a mixture of oak and Norway spruce. The oak remains today and has just been thinned. However, the Norway spruce was removed in the late 1990s as it was deemed to be suffering from stress induced by drought and therefore was under threat from pests entering the eastern ports in containers of timber, being close to the A1 this could act as a staging post for these pests to work their way north to the Sitka plantations of Scotland. The removal of the Northamptonshire Forest District blocks would give a significant gap to this movement, the main concern coming from the European spruce bark beetle (*Ips typographus*) one of which had been caught in pheromone traps in the port of Felixstowe the previous year. Interestingly the Germans had suffered the same problems with their spruce some 100 or so years previously and this had been one of the triggers for them to adopt continuous cover systems of management as they realised the problem was largely man-made.

As previously mentioned, the species choice was mainly conifer and this time the planting included Western red cedar and Corsican pine, both plantations can still be seen on the western edge of the wood and both are of very good form. More Douglas fir was planted as was some Western Hemlock. There is also mention of under planting hazel with oak, direct seeding of pasture with acorns and also beech plantations being established but these could be in the wider Bourne Wood area, a triangle stretching from Bourne to Grantham to Stamford.

Small scale restocking can again be seen in the 1970s when European larch began to be replaced

by Corsican pine and this could well be in response to the form the earlier plantings had shown.

The access roads and tracks were mostly built between the two world wars except the one linking the A151 with 5 ways. This was constructed in the 1970s to facilitate timber removal which was increasingly by lorry.

The last 60 years have seen significant changes in the methods of ground preparation, planting and timber extraction. In the 1950s and 1960s trees were manually felled and the timber taken out by tractor. In contrast, today, the timber is sold standing and buyers employ contractors who use large wheeled or tracked harvesting machines to fell and process the trees into logs. A forwarder then transports the timber to a landing place for subsequent uplift and haulage to the saw mill by lorry. There has also been a shift over this time frame from small local contractors supplying mostly local markets to the larger contractors of today supplying timber to saw mills for pulp, building materials and fence panels.

Bourne Wood is also featured in an FC publication on forest design; a book written by Dr Simon Bell who, during the 1990s was a leading light in forest design.

During the 1980s in response to the FC broadleaf policy some of the larch plantations were felled and sessile oak was planted to replace it.

During the 1990 and early 2000s the district undertook to remove much of the Norway spruce from its woodlands including Bourne, as mentioned above.

In 2001, as a direct response to this and the issues surrounding restocking on heavy clay soils of the area along with the serious problems caused to woodland regeneration by the high and increasing deer population the Ancient Woodland Project was launched. Leading on from this the FC launched its *Keepers in time* policy and both introduced a change of emphasis in management towards more native species. During this period large scale removal of conifers took place throughout Northamptonshire Forest District to encourage the regeneration of native broadleaves. The current decade may well be remembered for being the one when we started to understand the way that climate change would impact on our woods and forests and when our thinking and management became more clearly focussed on maintaining viable woods for the future rather than on a nostalgic search for the past.

mature trees to make way for the next generation is essential to maintain the health and vigour of our woods and preserve them for the future.

Growing trees is a long term business and woodlands are complex and dynamic ‘creatures’ with many, often conflicting, demands placed on them. They are a home to wildlife and places we all like to visit for a whole range of different reasons, they are important features in the landscape and alongside all of this, they also produce a vital renewable resource which we all use every day. As a result a good forester needs to have sound judgement, the ability to plan and steer a steady course through many constantly changing factors, and a crystal ball to be sure that the decisions made today will still be the right ones in decades and centuries to come. It has been said that a forester needs a cold heart and a sharp axe as cutting down a tree which has stood for decades is no easy thing to do (spiritually or physically) but the ongoing process of removing a proportion of the

CONSERVATION AND AMENITY

Conservation of biodiversity

Bourne Wood is included on the national inventory of Ancient Woodlands and is designated as a Local Wildlife Site (LWS). Both of these provide some protection from inappropriate changes in land use, particularly development. However, the overall richness of flora and range of other wildlife interests point to the wood being of national wildlife importance despite it currently lacking any statutory conservation designation.

Local Authorities have a vital role in ensuring the conservation of Ancient Woodland especially through the planning system. The National Planning Policy Framework (NPPF) 2012 contains policies that aim to prevent the loss or damage to Ancient Woodland and other important habitats and species and states that:

‘Planning permission should be refused for development resulting in loss or deterioration of important habitats including ancient woodland... unless the need for, and benefits of, the development in that location clearly outweigh the loss’

The South Kesteven District Council (SKDC) Core Strategy Development Plan replaces the Local Plan adopted in 1995 and sets out the long term spatial vision for the District, and the spatial objectives and strategic policies to deliver that vision. This contains a policy EN1 for the protection of wildlife, geological and archaeological sites as consistent with the NPPF.

Lowland mixed deciduous woodland (of which Bourne Wood is an example) is also a priority habitat under the Biodiversity Action Plan listed in section 41 of the Natural Environment and Communities Act where every public body must

in exercising its functions have regard to the purpose of conserving biodiversity.

From the 1970s onwards, conservation and amenity considerations became a higher priority in forestry. Concern about the continuing loss of area and character of ancient woods contributed to the Government’s decision to introduce the Broadleaves Policy in 1985. The Broadleaves Policy aims to maintain and increase the broadleaved woodland by encouraging good management for a wide range of objectives and giving special attention to ancient semi-natural woodlands to maintain their special features. It has generally been very successful in encouraging the expansion and better management of broadleaved woodland and in preventing further losses of ancient semi natural broadleaved woodland. The long-term goal for Bourne Wood is to restore it to broadleaved woodland.

Public access and facilities

Figure 2 provides details of the location of the various facilities described in detail in the following sections.

Bourne Wood receives a large but unquantified number of visitors annually. A rough estimate is that the wood receives in excess of 100, 000 visitors annually. A recent questionnaire survey by FC in 2008 revealed that a large proportion of visitors travel less than 25 miles to visit the wood. The majority of these are from Bourne and its surrounding villages and, to a lesser extent from Sleaford, Spalding and the Deepings. The majority of visitors come by car and the main activity is to obtain ‘fresh air and exercise’ often combined with walking a dog. Other activities include cycling, running and horse riding.



Volunteers removing redundant tree guards (top) Bird boxes ready for installation (bottom) © Sarah Roberts

Car parking

The growth in visitors to Bourne Wood and the increasing emphasis by FC on catering for recreation and amenity led to the construction of a new car park and recreational complex in the early 1990s. This replaced an original car parking facility which had limited capacity. The large car park, constructed of compacted stone, is situated at Grid reference TF079203. Access to the car park, which is signposted, is via the A151 Bourne to Colsterworth Road opposite Auster Wood.

Pedestrian access

Public access is confined to the FC owned Bourne Wood. There is no public access to the adjacent Pillar Wood which is privately owned.

The wood is criss-crossed by many paths and tracks of varying widths and surfaces. A few are composed of compacted stone and are thus more suitable for walking with regular footwear and for access with wheelchairs and pushchairs. The remainder are grass or rough tracks. For example, there is a circular easy access route through the wood of about 0.75 mile which is marked on a map on a sign board at the five crossroads (see Figure 2). There is also a picnic table along this trail and a bench.

Cycling

There is an off road cycle route that runs from the Forest Lodge off Beech Avenue continuing north through the wood and on to Hanthorpe.

Public footpaths

In addition to the informal paths, there are 3 public footpaths that run through the wood:

- From Cawthorpe village running east and cutting through the northern 'neck' of the wood and ending up in Edenham. Part of the footpath is an unsurfaced 'road' between Cawthorpe and Bourne Wood and is known as Wood Lane
- From Beech Avenue running westwards through the southern sector of the wood to the A151 just north of Auster Wood
- From the western edge of Bourne (Hazelwood Drive, off Beech Avenue) through the pasture field with the Blind (Chalybeate) Well then through the central part of the wood and on to Edenham.

Toilets

Toilets are situated in the main car park. At the time of writing, the toilets are not routinely open for use. Organisations or groups planning events in the wood can apply to the Friends of Bourne Wood to use the toilets for a small charge.

Benches and picnic tables

The car park has a number of picnic tables. There are also four other benches situated along some of the main paths (Figure 2).



Figure 2: Map of Bourne Wood showing main facilities and access.

Sculpture in Bourne Wood

In 1991, Bourne Wood was selected for a woodland sculpture Project which was supported by FC, South Kesteven District Council, Lincolnshire County Council and The Eastern Arts Board (now Arts Council, England). A number of sculptures were crafted by resident sculptors and children from Bourne Grammar School over a number of years and a sculpture trail was established. The sculptures used a variety of materials, mostly wood but also turves, limestone and concrete.

Some of the sculptures can still be seen but some have since been removed and some are gradually decaying, as was originally envisaged.

Clare Wilks who did the original willow weaving went on to spend a summer living with John Malcovitch the American actor, director, producer, and fashion designer and his family in southern France. Clare created a whole series of sculptures for him in his gardens.





Voluntary

The Friends of Bourne Wood ('the Friends') are a small voluntary group whose objectives are to promote the Wood as a recreational and educational resource for the people of Bourne and surrounding areas. The Friends were formed in 1992 but it wasn't until 1997 that a formal committee was established. Each year, the Friends run a programme of guided walks and events for the local community (see website for further details). The Friends are currently establishing a new community orchard in a field adjacent to the wood near the Forest Office off Beech Avenue.

The Friends have sited woodcrete bird and bat boxes at various locations which have been funded by grants from the Len Pick Trust. The woodcrete boxes are more durable and are woodpecker and squirrel proof. They are well used by species such as blue and great tit and more recently, nuthatch. In addition, there are some tawny owl boxes which normally result in the successful rearing of successful broods of owls.

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Glossary

Ammonite

Ammonites are an extinct group of marine invertebrate animals that are more closely related to living octopuses, squid, and cuttlefish. The earliest ammonites appeared during the Devonian geological epoch, and the last species died out during the Cretaceous period.

The name 'ammonite', from which the scientific term is derived, was inspired by the spiral shape of their fossilized shells, which somewhat resemble tightly coiled ram's horns.

Bast

Bast is the fibrous inner bark or phloem of a plant used as fibre in matting, cord, etc

Belemnite

Belemnites are an extinct group of marine animals similar in many ways to the modern squids and also closely related to modern cuttlefish. Belemnites were numerous in the Jurassic and Cretaceous periods.

Coppice, coppicing

Coppicing is a traditional method of woodland management which takes advantage of the fact that many broad-leaved trees make new growth from the stump or roots if cut down. In a coppiced wood, young tree stems are repeatedly cut down to near ground level on a set cycle (e.g. every 7 years). Many broadleaved tree species will coppice, some better than others, but favoured species are hazel, ash, oak and sweet chestnut. Coppicing is a highly effective method of producing a great deal of fast growing, sustainable timber without the need to replant. Coppice timber has been used for thatching spars, turnery (e.g. brush heads, chair legs), fencing, tool handles and firewood.

Coppice-with-standards

Areas of coppice where a scatter of larger trees, known as standards, were left. These would be cut when they were larger (around 70-80 years of age) and used for building.

Honeydew

Honeydew is a sugar-rich, sticky liquid secreted by aphids as they feed on the sap of plants. Honeydew is collected by certain species of birds and insects

Enclosure/Inclosure

Enclosure (sometimes referred to as Inclosure) is a term used to describe various means of consolidating or extending land-holdings into

larger units. This can include the partition of large areas of land communally farmed under the open field system into small fields farmed by individuals, the conversion of arable land to pasture and the occupation of commons by large landowners, excluding other users. Enclosure awards are legal documents recording the ownership and distribution of the lands enclosed.

Local Wildlife Site

Local Wildlife Sites (LWSs) are wildlife-rich sites selected for their local nature conservation value. They vary in shape and size and can contain important, distinctive and threatened habitats and species. In many parts of the UK, they are the principal wildlife resource but their designation is non-statutory and their only protection comes via the planning system. They are not legally-protected like SSSIs or National Nature Reserves. Many are owned by private individuals.

Medullary ray

A thin, vertical band or plate composed of cells that run radially through the trunk/stem of a tree from the pith to the bark and perpendicular to the growth rings. Medullary rays store and transport food materials.

Mycelium

A mass of underground, branching, thread-like hyphae (long filamentous cells of a fungus) which is the vegetative part of a fungus.

National Vegetation Classification

The British National Vegetation is a classification of the vegetation of Great Britain published in 5 volumes by Cambridge University Press (British Plant Communities) and edited by John Rodwell

formerly of the University of Lancaster. Vegetation is divided into 256 different types or plant communities. These are grouped into 12 broad groupings or habitats such as woodlands and scrub, heaths, saltmarshes and several types of grassland.

Semi-natural

A term used in relation to wildlife habitats which have had some modification by man by traditional but low intensity management practices such as grazing or coppicing, but are composed of mostly of wild native plant and animal species. Examples might include coppiced ancient woodland or chalk grassland or downland and heathland.

Thinning

In addition to the felling and extraction of the final timber/tree 'crop' at harvestable age in managed forests, a selection of trees are removed at intervals after their initial establishment to reduce the density of trees in a plantation, improve the quality and growth of the remaining trees and produce a saleable final product. This is known as thinning. Normally the first thinning is undertaken when trees have reached between 10 and 14 metres in height but the exact timing is dependent on the tree species, the nature of the local environment and financial and marketing considerations.

Appendix 1 Bourne Wood vascular plant species list

<i>Acer campestre</i> *E	Field maple	<i>Carex otrubae</i>	False fox-sedge
<i>Acer pseudoplatanus</i>	Sycamore	<i>Carex remota</i> *B	Remote sedge
<i>Achillea millefolium</i>	Yarrow	<i>Carex spicata</i>	Spiked sedge
<i>Adoxa moschatellina</i> *C	Moschatel	<i>Carex strigosa</i> *A♦	Thin-spiked wood-sedge
<i>Aegopodium podagraria</i>	Ground elder	<i>Carex sylvatica</i> *C	Wood sedge
<i>Aesculus hippocastanum</i>	Horse chestnut	<i>Carpinus betula</i>	Hornbeam
<i>Agrimonia eupatoria</i>	Common agrimony	<i>Castanea sativa</i> P	Sweet chestnut
<i>Agrimonia procera</i>	Fragrant agrimony	<i>Centaurea nigra</i>	Common knapweed
<i>Agrostis stolonifera</i>	Creeping bent	<i>Centaureum erythraea</i>	Common centaurly
<i>Ajuga reptans</i>	Bugle	<i>Cerastium fontanum</i>	Mouse-ear chickweed
<i>Alliaria petiolata</i>	Garlic mustard	<i>Chamerion angustifolium</i>	Rose-bay willowherb
<i>Allium ursinum</i> *C	Wild garlic	<i>Chenopodium album</i>	Fat hen
<i>Alnus cordata</i> P	Italian alder	<i>Circaea lutetiana</i>	Enchanter's nightshade
<i>Alnus glutinosa</i>	Alder	<i>Cirsium arvense</i>	Creeping thistle
<i>Alopecurus pratensis</i>	Meadow foxtail	<i>Cirsium palustre</i>	Marsh thistle
<i>Anagallis arvensis</i>	Scarlet pimpernel	<i>Cirsium vulgare</i>	Spear thistle
<i>Anemone nemorosa</i> + *B	Wood anemone	<i>Clinopodium vulgare</i>	Wild basil
<i>Angelica sylvestris</i>	Wild angelica	<i>Conopodium majus</i> + *B	Pignut
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	<i>Cornus sanguinea</i> *C	Dogwood
<i>Anthriscus sylvestris</i>	Cow parsley	<i>Corylus avellana</i> *C	Hazel
<i>Arctium lappa</i>	Greater burdock	<i>Crataegus laevigata</i> *D	Midland hawthorn
<i>Arctium minus</i> agg	Burdock	<i>Crataegus monogyna</i>	Hawthorn
<i>Arrhenatherum elatius</i>	False oat grass	<i>Crepis capillaris</i>	Smooth hawk's-beard
<i>Artemisia vulgaris</i>	Mugwort	<i>Cynosurus cristatus</i>	Crested dog's-tail
<i>Arum maculatum</i>	Cuckoo pint	<i>Dactylis glomerata</i>	Cocksfoot
<i>Athyrium filix-femina</i>	Lady fern	<i>Dactylorhiza fuchsii</i> *B	Common spotted orchid
<i>Azolla filiculoides</i>	Water fern	<i>Daucus carota</i>	Wild carrot
<i>Ballota nigra</i>	Stinking horehound	<i>Deschampsia cespitosa</i>	Tufted hair grass
<i>Barbarea vulgaris</i>	Winter-cress	<i>Digitalis purpurea</i>	Foxglove
<i>Bellis perennis</i>	Daisy	<i>Dipsacus fullonum</i>	Teasel
<i>Betula pendula</i>	Silver birch	<i>Dryopteris affinis</i>	Scaly male fern
<i>Betula pubescens</i>	Downy birch	<i>Dryopteris dilatata</i>	Broad buckler fern
<i>Brachypodium sylvaticum</i>	Wood false brome	<i>Dryopteris felix-mas</i>	Male fern
<i>Bromus ramosa</i> *E	Hairy brome	<i>Echium vulgare</i>	Viper's bugloss
<i>Bryonia dioica</i>	White bryony	<i>Elymus caninus</i> *C	Bearded couch
<i>Calamagrostis canescens</i> *B	Purple small reed	<i>Elytrigia repens</i>	Couch
<i>Calamagrostis epigejos</i> *E	Wood small reed	<i>Epilobium ciliatum</i>	American willowherb
<i>Callictriche stagnalis</i> ?	Water starwort	<i>Epilobium hirsutum</i>	Great hairy willowherb
<i>Calystegia sepium</i>	Hedge bindweed	<i>Epilobium montanum</i>	Broad-leaved willowherb
<i>Campanula trachelium</i> *B♦	Nettle-leaved bellflower	<i>Epilobium parviflorum</i>	Hoary willowherb
<i>Capsella bursa-pastoris</i>	Shepherd's purse	<i>Epipactis helleborine</i> *B♦	Broad leaved helleborine
<i>Cardamine flexuosa</i>	Wavy bitter-cress	<i>Equisetum telmateia</i>	Great horsetail
<i>Cardamine hirsuta</i>	Hairy bitter-cress	<i>Euonymus europaeas</i> *B	Spindle
<i>Cardamine pratensis</i>	Cuckooflower	<i>Eupatorium cannabinum</i> *C	Hemp agrimony
<i>Carduus acanthoides</i>	Welded thistle	<i>Euphorbia amygdaloides</i> ♦ □ *D	Wood spurge
<i>Carex flacca</i>	Glaucous sedge	<i>Euphrasia nemorosa</i> agg	Eyebright
<i>Carex divulsa</i> subsp <i>leersi</i>	Grey sedge	<i>Fagus sylvatica</i> P	Beech

Festuca gigantea *E	Giant fescue	Lathyrus sylvestris ♦	Narrow-leaved everlasting pea
Festuca rubra	Red fescue	Leontodon autumnalis	Autumn hawkbit
Filipendula ulmaria	Meadowsweet	Leucanthemum vulgare	Ox-eye daisy
Fragaria vesca *C	Wild strawberry	Ligustrum vulgare	Wild privet
Fraxinus excelsior	Ash	Linum catharticum	Fairy flax
Galeopsis tetrahit	Common hemp nettle	Listera ovata	Twayblade
Galium aparine	Cleavers	Lithospermum officinale	Common gromwell
Galium odoratum *A	Sweet woodruff	Lolium perenne	Perennial rye-grass
Galium palustre	Marsh bedstraw	Lonicera periclymenum	Honeysuckle
Geranium dissectum	Cut-leaved cranesbill	Lotus corniculatus	Bird's foot trefoil
Geranium pratense	Meadow cranesbill	Lotus pedunculatus	Greater bird's foot trefoil
Geranium robertianum	Herb Robert	Lunaria annua	Honesty
Geum rivale + *C	Water avens	Luzula campestris	Field wood rush
Geum urbanum	Wood avens	Luzula pilosa *B	Hairy wood-rush
Glechoma hederacea	Ground ivy	Luzula sylvatica *A	Great wood-rush
Glyceria fluitans	Flote grass	Lychnis flos cuculi *B	Ragged robin
Gnaphalium uliginosum	Marsh cudweed	Lycopus europaeus	Gipsywort
Hedera helix	Ivy	Lysimachia nemorum *A	Yellow pimpernel
Hieracium spp	Hawkweed	Lysimachia nummularium *C	Creeping jenny
Heracleum sphondylium	Hogweed	Lysimachia vulgaris *A	Yellow loosestrife
Hippurus vulgaris	Mare's-tail	Lythrum salicaria	Purple loosestrife
Holcus lanatus	Yorkshire fog	Malus pumila P	Apple
Holcus mollis	Creeping soft grass	Malus sylvatica *E	Crab apple
Humulus lupulus *C	Hop	Malva moschata	Musk mallow
Hyacinthoides non-scripta *C	Bluebell	Malva sylvestris	Common mallow
Hypericum x desertangii	Des etangs St John's wort	Matricaria discoidea	Pineappleweed
Hypericum hirsutum + *B	Hairy St John's wort	Medicago lupulina	Black medick
Hypericum maculatum	Imperforate St John's-wort	Melica uniflora *A	Wood melick
Hypericum perforatum	Perforate St John's wort	Melilotus altissimus	Tall Melilot
Hypericum pulchrum + *C	Beautiful St John's wort	Mentha aquatica	Water mint
Hypericum tetrapterum *C	Square stemmed	Mentha arvensis	Corn mint
	St John's wort	Mercurialis perennis *C	Dog's mercury
Ilex aquifolium *E	Holly	Milium effusum *A	Wood millet
Iris pseudocorus	Yellow flag iris	Moehringia trinerva *E	Three-nerved sandwort
Juncus acutiflorus	Sharp-flowered rush	Myosotis arvensis	Field forget-me-not
Juncus conglomeratus	Compact rush	Myosotis sylvatica *D	Wood forget-me-not
Juncus effusus	Soft rush	Myrrophysillum spicatum	Water milfoil
Juncus inflexus	Hard rush	Narcissus pseudonarcissus P	Daffodil (Daffodil cultivars)
Knautia arvensis	Field scabious	Nymphaea alba	White water lily
Koeleria macrantha +	Crested hair-grass	Odontites verna	Red bartsia
Lactuca serriola	Prickly lettuce	Ophiglossum vulgatum *C	Adder's tongue fern
Lamiastrum galeobdolon *B	Yellow archangel	Ophrys apifera	Bee orchid
Lamium album	White dead nettle	Orchis mascula + *B	Early purple orchid
Lamium purpureum	Red dead nettle	Oxalis acetosella + *B	Wood sorrel
Lapsana communis	Nippewort	Papaver rhoeas	Common poppy
Larix decidua P	European larch	Paris quadrifolia *A♦	Herb Paris
Lathyrus pratensis	Yellow meadow vetchling	Persicaria hydropiper	Water-pepper

Persicaria maculosum	Redshank	Rorippa sylvestris	Creeping yellow-cress
Petasites hybridus	Butterbur	Rosa arvensis	Field rose
Phalaris arundinacea	Reed canary grass	Rosa canina	Dog rose
Picea abies	Norway spruce	Rubus caesius	Dewberry
Picea sitchensis P	Sitka spruce	Rubus fruticosus agg	Bramble
Pimpinella major ■ *E	Greater burnet saxifrage	Rumex acetosa	Common sorrel
Pinus nigra P	Corsican pine	Rumex obtusifolius	Broad-leaved dock
Pinus sylvestris P	Scots pine	Rumex sanguineus	Wood dock
Plantago lanceolata	Ribwort plantain	Salix caprea	Goat willow
Plantago major	Greater plantain	Salix cinerea subsp oleifolia	Grey willow
Platanthera chlorantha + *A ♦	Greater butterfly orchid	Salix x sepulcralis? P	Weeping willow?
Phleum pratense	Timothy	Sambucus nigra	Elder
Pilosella aurantiaca	Fox-and-cubs	Sanicula europaea *C	Sanicle
Poa annua	Annual meadow grass	Scrophularia auriculata	Water figwort
Poa nemoralis *B	Wood meadow-grass	Scrophularia nodosa *B	Figwort
Poa trivialis	Rough stalked meadow grass	Senecio aquaticus	Marsh ragwort
Polygonum aviculare	Common knotgrass	Senecio erucifolius	Hoary ragwort
Polystichum aculeatum *E ♦	Hard shield fern	Senecio jacobaea	Common ragwort
Populus balsamifera? P	Balsam poplar	Senecio sylvaticus	Wood groundsel
Populus tremula *B	Aspen	Senecio vulgaris	Groundsel
Potamogeton lucens	Shining pondweed	Sherardia arvensis	Wild madder
Potamogeton natans	Broad-leaved pondweed	Silene dioica	Red campion
Potentilla anserina	Silverweed	Sison amomum	Stone parsley
Potentilla erecta +	Tormentil	Sisymbrium officinale	Hedge mustard
Potentilla reptans	Creeping cinquefoil	Sonchus arvensis	Corn sow thistle
Potentilla sterilis *B	Barren strawberry	Sonchus asper	Prickly sow thistle
Primula veris P	Cowslip	Sorbus aria P	Whitebeam
Primula vulgaris *B	Primrose	Sorbus aucuparia PN	Rowan
Prunella vulgaris	Self heal	Sorbus torminalis *B	Wild service
Prunus avium *C, P	Wild cherry	Sparganium erectum	Bur reed
Prunus cerasifera P	Cherry Plum	Stachys officinalis + ■ *C	Betony
Prunus spinosa	Blackthorn	Stachys sylvatica	Hedge woundwort
Pseudotsuga menziesii P	Douglas fir	Stellaria graminea	Lesser stitchwort
Pteridium aquilinum	Bracken	Stellaria holostea *C	Greater stitchwort
Pulicaria dysenterica	Fleabane	Stellaria media	Chickweed
Pyrus communis P	Pear	Stellaria neglecta *E ♦	Greater chickweed
Quercus cerris P	Turkey oak	Succisa pratensis +	Devil's bit scabious
Quercus petraea P	Sessile oak	Symphoricarpos albus P	Snowberry
Quercus robur PN	Pedunculate oak	Tamus communis *E	Black bryony
Quercus rubra P	Red oak	Taraxacum officinale agg	Dandelion
Ranunculus acris	Meadow buttercup	Taxus baccata P	Yew
Ranunculus ficaria	Lesser celandine	Thuja plicata P	Western red cedar
Ranunculus repens	Creeping buttercup	Tilia cordata *B	Small leaved lime
Reseda luteola	Weld	Tilia platyphyllos? P	Large leaved lime
Rhamnus catharticus	Buckthorn	Torilis japonica	Hedge parsley
Ribes sanguineum P	Flowering currant	Tragopogon pratensis	Goat's beard
Rorippa palustris	Marsh yellow-cress	Trifolium campestre	Hop trefoil

Trifolium dubium	Lesser trefoil
Trifolium medium	Zig-zag clover
Trifolium pratense	Red clover
Trifolium repens	White clover
Tripleurospermum inodorum	Scentless mayweed
Tsuga heterophylla	Western hemlock
Tussilago farfara	Coltsfoot
Typha latifolia	Reedmace
Ulex europaeus	Gorse
Ulmus glabra *E	Wych elm
Urtica dioica	Stinging nettle
Valeriana officinalis *B	Common valerian
Veronica arvensis	Wall speedwell
Veronica chamaedrys	Germander speedwell
Veronica montana *B	Wood speedwell
Veronica serpyllifolia	Thyme-leaved speedwell
Viburnum lantana *E♦	Wayfaring tree
Viburnum opulus *C	Guelder rose
Vicia cracca	Tufted vetch
Vicia sativa	Common vetch
Vicia sepium *E	Bush vetch
Vicia sylvatica *A♦	Wood vetch
Vicia tetrasperma	Smooth tare
Viola reichenbachiana *B	Pale dog violet
Viola riviniana	Dog violet
Viscum album	Mistletoe

*A, *B, *C = Ancient woodland indicator (AWI) plants in central Lincolnshire¹

*A 90-100% of occurrences in ancient woods = 10 species

*B 70-89% of occurrences in ancient woods = 24 species

*C 50-69% of occurrences in ancient woods = 21 species

Total A + B + C = 55

*D = (Other species with strong or moderate affinity for ancient woods in eastern England (Rackham 2003) not listed by Peterken = 3

*E = listed by Rose (1999) for eastern England but not by Peterken (2000) or Rackham (2003) = 14

Total AWI = 72

■ Circumboscal species mentioned by Rackham (2003). These are species that occur exclusively or mostly in the immediate vicinity of ancient woods including grassland rides.

+ = Grassland Indicators of Long Continuity (RGJ) = 2 (excluding those which are also AWI's)

♦ = Scarce Lincolnshire native species – either ≤ 15 10 km squares in the 2 Lincolnshire Vice Counties (53 & 54) or ≤ 3 10 km squares in VC 53. Post-1987 records = 11

P = Planted /introduced

PN = Planted and/or native

? = Some doubt over specific identity

¹ Peterken (2000)

Mosses and Liverworts

Amblystegium serpens
Atrichum undulatum
Aulacomnium androgynum
Brachythecium rutabulum
Bryum capillare
Campylopus introflexus
Cirriphyllum piliferum
Dicranella heteromalla
Dicranella varia
Dicranum tauricum
Didymodon fallax
Eurhynchium striatum
Homalia trichomanoides
Hypnum cupressiforme
Hypnum resupinatum
Isoetecium alopecurioides
Kindbergia praelonga
Lophocolea bidentata
Lophocolea heterophylla
Mnium hornum
Orthodontium lineare
Orthotrichum affine
Plagiochila asplenoides
Plagiomnium rostratum
Plagiomnium undulatum
Plagiothecium nemorale
Plagiothecium succulentum
Pseudotaxiphyllum elegans
Rhytidiadelphus squarrosus
Thuidium tamariscinum

Appendix 2 List of birds recorded in Bourne Wood

Species	Status and notes
Barn owl	R
Barn swallow	S
Blackcap	S (B)
Blue tit	R (B)
Brambling	W
Canada goose	R
Carrion crow	R (B)
Chiffchaff	S (B)
Coal tit	R (B)
Collared dove	R
Common blackbird	R (B)
Common buzzard	R (B)
Common chaffinch	R (B)
Common crossbill	P
Common cuckoo	S
Common kestrel	R
Common kingfisher	R
Common magpie	R (B)
Common moorhen	R
Common nightingale	S (B)
Common pheasant	R (B)
Common raven	R
Common redpoll	W
Common redstart	V/P
Common snipe	W
Common starling	R (B)
Common swift	S
Common teal	R
Common whitethroat	S
Dunnock	R (B)
Eurasian bullfinch	R (B)
Eurasian jay	R (B)
Eurasian nuthatch	R (B)
Eurasian sparrowhawk	R (B)
Eurasian treecreeper	R (B)

Eurasian woodcock	R (B)
European goldfinch	R
European greenfinch	R (B)
European green woodpecker	R (B)
European robin	R (B)
European siskin	W
Fieldfare	W
Hobby	S
House sparrow	R
Garden warbler	S (B)
Goldcrest	R (B)
Grasshopper warbler	S
Great spotted woodpecker	R (B)
Great tit	R (B)
Grey heron	R
Lesser redpoll	W
Lesser spotted woodpecker	R – no recent record
Lesser whitethroat	S
Little owl	R – around the edges of the wood
Long-eared owl	R – not been recorded for over 20 years
Long-tailed tit	R (B)
Mallard	R
Marsh tit	R (B)
Mistle thrush	R (B)
Northern goshawk	P
Pied wagtail	R
Red kite	R
Redwing	W
Rook	R
Song thrush	R (B)
Spotted flycatcher	S – rare
Tawny owl	R (B)
Tree pipit	S
Turtle dove	S – rare
Western jackdaw	R
Willow tit	R – rare

Willow warbler	S (B)
Winter wren	R (B)
Woodpigeon	R (B)
Wood warbler	P
Yellowhammer	R – around the edges of the wood

R = Resident all year round

S = Spring/summer visitor

W = Winter visitor

P = Passage – temporary stopover on migration

V = Vagrant

(B) = confirmed or likely to be breeding in the wood

NB Some resident species may be supplemented by birds from the continent often during winter e.g. blackbird

Appendix 3 List of mammals

American mink
Badger
Bank vole
Barbastelle bat
Brown hare
Brown long-eared bat
Brown rat
Common pipistrelle bat
Common shrew
Daubenton's bat
Fallow deer
Field vole
Grey squirrel
Hedgehog
Leisler's bat
Natterer's bat
Noctule bat
Common mole
Rabbit
Red deer
Reeves' muntjac
Roe deer
Red fox
Soprano pipistrelle bat
Stoat
Water vole
Weasel
Western house mouse
Whiskered bat
Wood mouse

Appendix 4 List of amphibians and reptiles

Common frog
Common lizard
Common toad
Grass snake
Great-crested newt
Slow worm
Smooth newt

Appendix 5 Butterflies recorded from Bourne Wood

English name	Scientific name	Larval foodplant	Habitat
Brimstone	<i>Gonopteryx rhamni</i>	Buckthorn	Woodland edge, hedgerows
Brown Argus	<i>Aricia agestis</i>	Annual cranesbill's e.g. dove's-foot cranesbill	Short dry grassland
Clouded yellow	<i>Colias croceus</i>	Clovers, Bird's-foot trefoil	Grassland, farmland
Comma	<i>Polygonia c-album</i>	Stinging nettle	Woodland edge
Common blue	<i>Polyommatus icarus</i>	Bird's-foot trefoil, greater bird's-foot trefoil, black medick, lesser trefoil, common restharrow	Grassland, woodland rides, coastal dunes
Essex Skipper	<i>Thymelicus lineola</i>	Various grasses	Tall dry grassland including woodland rides
Gatekeeper	<i>Pyrionia tithonus</i>	Fine-leaved grasses	Tall dry grassland, woodland/scrub edge
Green-veined white	<i>Pieris napi</i>	Hedge mustard, cuckoo flower, garlic mustard	Virtually anywhere but particularly mixed farmland, moorland and woodland rides
Holly Blue	<i>Celestrina argiolus</i>	Holly, ivy	Mixed farmland, gardens, woodland rides
Large Skipper	<i>Ochlodes venata</i>	Various grasses	Grassland, woodland rides, wet heath, parks and churchyards
Large white	<i>Pieris brassicae</i>	Wild or cultivated species of the cabbage family	Virtually anywhere but particularly gardens, allotments, mixed farmland
Marbled white	<i>Melanargia galathea</i>	Various grasses	Grassland and woodland rides
Meadow Brown	<i>Maniola jurtina</i>	Fine-leaved grasses	Grassland
Orange tip	<i>Anthocaris cardamines</i>	Hedge mustard, cuckoo flower, garlic mustard	Grassland, wetlands, hedgerows, woodland rides
Painted Lady	<i>Vanessa cardui</i>	Thistles	Virtually anywhere – wide ranging migrant
Peacock	<i>Inachis io</i>	Stinging nettle	Virtually anywhere
Purple hairstreak	<i>Neozephyrus quercus</i>	Pedunculate oak, Sessile oak	Woodlands, oak trees away from woodland
Red Admiral	<i>Vanessa atalanta</i>	Stinging nettle	Virtually anywhere
Ringlet	<i>Aphantopus hyperantus</i>	Various grasses	Tall grassland
Silver-washed Fritillary	<i>Arygnnis paphia</i>	Common dog violet	Woodland
Small Copper	<i>Lycaena phlaeas</i>	Common and sheep's sorrel	Grassland, heathland, moorland, dunes and woodland rides
Small Heath	<i>Coenonympha pamphilus</i>	Fine-leaved grasses	Short dry grassland
Small Skipper	<i>Thymelicus silvestris</i>	Various grasses	Grassland and woodland rides

Small Tortoiseshell	<i>Aglais urticae</i>	Stinging nettle	Virtually anywhere
Small White	<i>Pieris rapae</i>	Various brassicas e.g. hedge mustard, charlock, garlic mustard	Virtually anywhere but particularly gardens, mixed farmland
Speckled Wood	<i>Pararge aegeria</i>	Various grasses	Grassland, woodland edge, farmland
Wall Brown	<i>Lasiommata megera</i>	Various grasses	Grassland, farmland
White Admiral	<i>Limentis camilla</i>	Honeysuckle	Woodland edges and rides
White-letter hairstreak	<i>Satyrium w-album</i>	Elms	Woodland edge, hedgerows

Appendix 6 Moths

Common Name	Taxon Name
Angle Shades	Phlogophora meticulosa
Angle-striped Sallow	Enargia paleacea
Apple Ermine	Yponomeuta malinellus
Apple Leaf Miner	Lyonetia clerkella
Ash-bark Knot-horn	Euzophera pinguis
Barred Fruit-tree Tortrix	Pandemis cerasana
Barred Red	Hylaea fasciaria
Barred Rivulet	Perizoma bifaciata
Barred Yellow	Cidaria fulvata
Base-spotted Pigmy	Stigmella basiguttella
Beautiful Golden Y	Autographa pulchrina
Beautiful Hook-tip	Laspeyria flexula
Bee Moth	Aphomia sociella
Bent-barred Pigmy	Ectoedemia angulifasciella
Birch Bell	Epinotia demarniana
Birch Marble	Apotomis betuletana
Bird-cherry Ermine	Yponomeuta evonymella
Black Arches	Lymantria monacha
Black-headed Pigmy	Stigmella atricapitella
Black-spot Sallow Pigmy	Ectoedemia intimella
Blood-Vein	Timandra comae
Bordered Carl	Emmetia marginea
Brassy Twist	Eulia ministrana
Bright-Line Brown-Eye	Lacanobia oleracea
Brimstone Moth	Opisthograptis luteolata
Brindled Pug	Eupithecia abbreviata
Broad-bordered Yellow Underwing	Noctua fimbriata
Brown Ash Ermel	Zelleria hepariella
Brown China-mark	Elophila nymphaeata
Brown Plume	Stenoptilia pterodactyla
Brown Rustic	Rusina ferruginea
Brown-barred Twist	Epagoge grotiana
Brown-dotted Clothes Moth	Niditinea fuscella
Brown-spot Flat-body	Agonopterix alstromeriana
Brown-spot Pinion	Agrochola litura

Bud Moth	<i>Spilonota ocellana</i>
Buff Arches	<i>Habrosyne pyritoides</i>
Buff Footman	<i>Eilema depressa</i>
Buff-tipped Marble	<i>Hedya ochroleucana</i>
Bulrush Cosmet	<i>Limnaecia phragmitella</i>
Bulrush Veneer	<i>Calamotropha paludella</i>
Burnished Brass	<i>Diachrysia chrysitis</i>
Carnation Tortrix	<i>Cacoecimorpha pronubana</i>
Centre-barred Sallow	<i>Atethmia centrago</i>
Chequered Fruit-tree Tortrix	<i>Pandemis corylana</i>
Chequered Grass-veneer	<i>Catoptria falsella</i>
Cherry Midget	<i>Phyllonorycter cerasicolella</i>
Chinese Character	<i>Cilix glaucata</i>
Chocolate tip	<i>Clostera curtula</i>
Clay	<i>Mythimna ferrago</i>
Cloaked Minor	<i>Mesoligia furuncula</i>
Clouded Border	<i>Lomasipilis marginata</i>
Clouded Brindle	<i>Apamea epomidion</i>
Clouded Drab	<i>Orthosia incerta</i>
Clouded Silver	<i>Lomographa temerata</i>
Clouded-bordered Brindle	<i>Apamea crenata</i>
Coarse Hazel Pigmy	<i>Stigmella floslactella</i>
Common Carpet	<i>Epirrhoe alternata</i>
Common Case-bearer	<i>Coleophora serratella</i>
Common Cloaked Shoot	<i>Gypsonoma dealbana</i>
Common Emerald	<i>Hemithea aestivaria</i>
Common Footman	<i>Eilema lurideola</i>
Common Grass-veneer	<i>Agriphila tristella</i>
Common Grey	<i>Scoparia ambigualis</i>
Common Marble	<i>Celypha lacunana</i>
Common Marbled Carpet	<i>Chloroclysta truncata</i>
Common Oak Case-bearer	<i>Coleophora lutipennella</i>
Common Pug	<i>Eupithecia vulgata</i>
Common Purple & Gold	<i>Pyrausta purpuralis</i>
Common Quaker	<i>Orthosia cerasi</i>
Common Rustic	<i>Mesapamea secalis</i>

Common Spruce Bell	<i>Epinotia tedella</i>
Common Sweep	<i>Psyche casta</i>
Common Thorn Midget	<i>Phyllonorycter oxyacanthae</i>
Common Wainscot	<i>Mythimna pallens</i>
Common Wave	<i>Cabera exanthemata</i>
Common White Wave	<i>Cabera pusaria</i>
Common Yellow Conch	<i>Agapeta hamana</i>
Copper Underwing	<i>Amphipyra pyramidea</i>
Coronet	<i>Craniophora ligustri</i>
Coxcomb Prominent	<i>Ptilodon capucina</i>
Dark Arches	<i>Apamea monoglypha</i>
Dark Fruit-tree Tortrix	<i>Pandemis heparana</i>
Dark Marbled Carpet	<i>Chloroclysta citrata</i>
Dark Pine Knot-horn	<i>Dioryctria abietella</i>
Dark Sword-grass	<i>Agrotis ipsilon</i>
Dark-barred Twin-spot Carpet	<i>Xanthorhoe ferrugata</i>
Dark-barred Twist	<i>Syndemis musculana</i>
Deep-brown Piercer	<i>Grapholita tenebrosana</i>
Diamond-back Moth	<i>Plutella xylostella</i>
Dot Moth	<i>Melanchra persicariae</i>
Dotted Clay	<i>Xestia baja</i>
Dotted Oak Knot-horn	<i>Phycita roborella</i>
Double-square Spot	<i>Xestia triangulum</i>
Drinker	<i>Euthrix potatoria</i>
Dull Red Groundling	<i>Bryotropha senectella</i>
Dun-bar	<i>Cosmia trapezina</i>
Dusky Pearl	<i>Udea prunalis</i>
Dusky Sallow	<i>Eremobia ochroleuca</i>
Dwarf Pug	<i>Eupithecia tantillaria</i>
Early Grey	<i>Xylocampa areola</i>
Early Thorn	<i>Selenia dentaria</i>
Elephant Hawk-moth	<i>Deilephila elpenor</i>
Elm Midget	<i>Phyllonorycter tristrigella</i>
Engrailed	<i>Ectropis bistortata</i>
Fan-foot	<i>Zanclognatha tarsipennalis</i>
Fiery Oak Midget	<i>Phyllonorycter lautella</i>

Flame	<i>Axylia putris</i>
Flame Shoulder	<i>Ochropleura plecta</i>
Flax Tortrix	<i>Cnephasia asseclana</i>
Flounced Rustic	<i>Luperina testacea</i>
Frosted Green	<i>Polyploca ridens</i>
Garden Grass-veneer	<i>Chrysoteuchia culmella</i>
Ghost Moth	<i>Hepialus humuli</i>
Gold Juniper Argent	<i>Argyresthia aurulentella</i>
Gold Triangle	<i>Hypsopygia costalis</i>
Gold-dot Slender	<i>Eucalybites auroguttella</i>
Golden Argent	<i>Argyresthia goedartella</i>
Golden Pigmy	<i>Stigmella aurella</i>
Golden-brown Tubic	<i>Crassa unitella</i>
Gold-ribbon Argent	<i>Argyresthia brockeella</i>
Green Long-horn	<i>Adela reaumurella</i>
Green Oak Tortrix	<i>Tortrix viridana</i>
Green Pug	<i>Pasiphila rectangulata</i>
Green Silver-lines	<i>Pseudoips prasinana</i>
Grey Dagger	<i>Acronicta psi</i>
Grey Poplar Bell	<i>Epinotia nisella</i>
Grey Tortrix	<i>Cnephasia stephensiana</i>
Hawthorn Midget	<i>Phyllonorycter corylifoliella</i>
Hawthorn Slender	<i>Parornix anglicella</i>
Hazel Slender	<i>Parornix devoniella</i>
Heart & Dart	<i>Agrotis exclamationis</i>
Hebrew Character	<i>Orthosia gothica</i>
Hoary Belle	<i>Eucosma cana</i>
Honeysuckle Moth	<i>Ypsolopha dentella</i>
Hooked Smudge	<i>Ypsolopha nemorella</i>
Iron Prominent	<i>Notodonta dromedarius</i>
July Highflyer	<i>Hydriomena furcata</i>
Knot Grass	<i>Acronicta rumicis</i>
Lackey	<i>Malacosoma neustria</i>
Larch Case-bearer	<i>Coleophora laricella</i>
Large Beech Argent	<i>Argyresthia semitestacella</i>
Large Emerald	<i>Geometra papilionaria</i>

Large Fruit-tree Tortrix	<i>Archips podana</i>
Large Yellow Underwing	<i>Noctua pronuba</i>
Least Black Arches	<i>Nola confusalis</i>
Least Yellow Underwing	<i>Noctua interjecta</i>
Leopard Moth	<i>Zeuzera pyrina</i>
Lesser Broad-bordered Yellow Underwing	<i>Noctua janthe</i>
Lesser Cream Wave	<i>Scopula immutata</i>
Lesser Swallow Prominent	<i>Pheosia gnoma</i>
Lesser Yellow Underwing	<i>Noctua comes</i>
Light Arches	<i>Apamea lithoxylaea</i>
Light Emerald	<i>Campaea margaritata</i>
Light Grey Tortrix	<i>Cnephasia incertana</i>
Light orange underwing	<i>Archiearis notha</i>
Lime-speck Pug	<i>Eupithecia centaureata</i>
Long-horned Flat-body	<i>Carcina quercana</i>
Lunar Marbled Brown	<i>Drymonia ruficornis</i>
Lunar Underwing	<i>Omphaloscelis lunosa</i>
Magpie	<i>Abraxas grossulariata</i>
Maiden's Blush	<i>Cyclophora punctaria</i>
Maple Button	<i>Acleris forsskaeana</i>
Maple Midget	<i>Phyllonorycter acerifoliella</i>
Maple Prominent	<i>Ptilodon cucullina</i>
Marbled Beauty	<i>Cryphia domestica</i>
Marbled Bell	<i>Eucosma campoliliana</i>
Marbled Minor	<i>Oligia strigilis</i>
Marbled Piercer	<i>Cydia splendana</i>
Marbled White Spot	<i>Protodeltote pygarga</i>
Meadow-sweet Button	<i>Acleris shepherdana</i>
Mere Wainscot	<i>Chortodes fluxa</i>
Miller	<i>Acronicta leporina</i>
Mint Bent-wing	<i>Pseudopostega crepusculella</i>
Mother of Pearl	<i>Pleuroptya ruralis</i>
Mottled Beauty	<i>Alcis repandata</i>
Mouse Moth	<i>Amphipyra tragopoginis</i>
Nut Bud Moth	<i>Epinotia tenerana</i>
Nut Leaf Blister Moth	<i>Phyllonorycter coryli</i>

Nutmeg	<i>Discestra trifolii</i>
Nut-tree Pigmy	<i>Stigmella microtheriella</i>
Oak Bent-wing	<i>Bucculatrix ulmella</i>
Oak Carl	<i>Tischeria ekebladella</i>
Oak Hook-tip	<i>Watsonalla binaria</i>
Oak Nycteoline	<i>Nycteola revayana</i>
Oak Satin Lift	<i>Heliozela sericiella</i>
Olive Pearl	<i>Udea olivalis</i>
Orange Swift	<i>Hepialus sylvina</i>
Orange-spotted Shoot	<i>Rhyacionia pinicolana</i>
Orchard Ermine	<i>Yponomeuta padella</i>
Pale Prominent	<i>Pterostoma palpina</i>
Pale Straw Pearl	<i>Udea lutealis</i>
Pale Thistle Case-bearer	<i>Coleophora peribenanderi</i>
Pale Tussock	<i>Calliteara pudibunda</i>
Peach Blossom	<i>Thyatira batis</i>
Pearl Grass-veneer	<i>Catoptria pinella</i>
Pebble Hook-tip	<i>Drepana falcataria</i>
Pebble Prominent	<i>Notodonta ziczac</i>
Peppered Moth	<i>Biston betularia</i>
Pinch-barred Pigmy	<i>Ectoedemia atricollis</i>
Pine Beauty	<i>Panolis flammea</i>
Pine Bell	<i>Epinotia rubiginosana</i>
Pine Cosmet	<i>Batrachedra pinicolella</i>
Pine Hawk-moth	<i>Hyloicus pinastri</i>
Pine Leaf-mining Moth	<i>Clavigesta purdeyi</i>
Pine Marble	<i>Piniphila bifasciana</i>
Poplar Grey	<i>Acronicta megacephala</i>
Poplar Hawk-moth	<i>Laothoe populi</i>
Poplar Sober	<i>Anacampsis populella</i>
Privet Hawk-moth	<i>Sphinx ligustri</i>
Privet Twist	<i>Clepsis consimilana</i>
Purple Argent	<i>Argyresthia albiaria</i>
Purple Thorn	<i>Selenia tetralunaria</i>
Red Birch Midget	<i>Phyllonorycter ulmifoliella</i>
Red Chestnut	<i>Cerastis rubricosa</i>

Red Elm Pigmy	<i>Stigmella lemniscella</i>
Red Hazel Midget	<i>Phyllonorycter nicellii</i>
Red Roller	<i>Ancylis mitterbacheriana</i>
Red Twin-spot Carpet	<i>Xanthorhoe spadicearia</i>
Red-headed Pigmy	<i>Stigmella ruficapitella</i>
Riband Wave	<i>Idaea aversata</i>
Ringed China-mark	<i>Parapoynx stratiotata</i>
Rose Leaf Miner	<i>Stigmella anomalella</i>
Rosy Tabby	<i>Endotricha flammealis</i>
Ruby Tiger	<i>Phragmatobia fuliginosa</i>
Rustic Shoulder-knot	<i>Apamea sordens</i>
Sallow	<i>Xanthia icteritia</i>
Sallow Kitten	<i>Furcula furcula</i>
Sallow Pigmy	<i>Stigmella salicis</i>
Sandy Long-horn	<i>Nematopogon schwarziellus</i>
Scalloped Hazel	<i>Odontopera bidentata</i>
Scalloped Hook-tip	<i>Falcaria lacertinaria</i>
Scalloped Oak	<i>Crocallis elinguaris</i>
Scarce Footman	<i>Eilema complana</i>
Scarce Silver-lines	<i>Bena bicolorana</i>
Scorched Wing	<i>Plagodis dolabraria</i>
Scrubland Pigmy	<i>Stigmella plagiolella</i>
Seraphim	<i>Lobophora halterata</i>
Setaceous Hebrew Character	<i>Xestia c-nigrum</i>
Short-barred Pigmy	<i>Stigmella luteella</i>
Shuttle-shaped Dart	<i>Agrotis puta</i>
Silver Y	<i>Autographa gamma</i>
Silver-ground Carpet	<i>Xanthorhoe montanata</i>
Single-dotted Wave	<i>Idaea dimidiata</i>
Slender Brindle	<i>Apamea scolopacina</i>
Small Birch Bell	<i>Epipotia ramella</i>
Small Dotted Buff	<i>Photodes minima</i>
Small Elm Midget	<i>Phyllonorycter schreberella</i>
Small Fan-foot	<i>Herminia grisealis</i>
Small Fan-footed Wave	<i>Idaea biselata</i>
Small Phoenix	<i>Ecliptopera silaceata</i>

Small Purple & Gold	<i>Pyrausta aurata</i>
Small Square-spot	<i>Diarsia rubi</i>
Small Wainscot	<i>Chortodes pygmina</i>
Smoky Wainscot	<i>Mythimna impura</i>
Snout	<i>Hypena proboscidalis</i>
Spectacle	<i>Abrostola tripartita</i>
Spotted Black Pigmy	<i>Ectoedemia subbimaculella</i>
Spruce Bud Moth	<i>Zeiraphera ratzeburgiana</i>
Spruce Carpet	<i>Thera britannica</i>
Square-spot Rustic	<i>Xestia xanthographa</i>
Straw Dot	<i>Rivula sericealis</i>
Straw Grass-veneer	<i>Agriphila straminella</i>
Streamer	<i>Anticlea derivata</i>
Svensson's Copper Underwing	<i>Amphipyra berbera</i>
Swallow Prominent	<i>Pheosia tremula</i>
Swallow-tailed Moth	<i>Ourapteryx sambucaria</i>
Sycamore	<i>Acronicta aceris</i>
Tawny-barred Angle	<i>Macaria liturata</i>
Thistle Ermine	<i>Myelois circumvoluta</i>
Tipped Oak Case-bearer	<i>Coleophora flavipennella</i>
Triple-spotted Pug	<i>Eupithecia trisignaria</i>
Turnip Moth	<i>Agrotis segetum</i>
Twin-spot Carpet	<i>Perizoma didymata</i>
Two-spotted Neb	<i>Eulamprotes atrella</i>
Vapourer	<i>Orgyia antiqua</i>
Variegated Golden Tortrix	<i>Archips xylosteana</i>
Warted Knot-horn	<i>Acrobasis repandana</i>
Water Carpet	<i>Lampropteryx suffumata</i>
Water Veneer	<i>Acentria ephemerella</i>
Waved Umber	<i>Menophra abruptaria</i>
White Oak Case-bearer	<i>Coleophora kuehnella</i>
Willow Beauty	<i>Peribatodes rhomboidaria</i>
Woundwort Case-bearer	<i>Coleophora lineolea</i>
Yarrow Conch	<i>Aethes smeathmanniana</i>
Yellow Shell	<i>Camptogramma bilineata</i>
Yellow-tail	<i>Euproctis similis</i>

–	Coleophora flavipennella
–	Coleophera gryhipennella
–	Emmetia marginea
–	Acrobasis advenella
–	Dyseriocrania subpurpurella
–	Eudonia lacustrata
–	Notocelia trimaculana

Appendix 7 Dragonflies and damselflies recorded from Bourne Wood 1979-2013

Scientific name	English Name
<i>Aeshna cyanea</i>	Southern Hawker
<i>Aeshna grandis</i>	Brown Hawker
<i>Aeshna mixta</i>	Migrant Hawker
<i>Anax imperator</i>	Emperor Dragonfly
<i>Calopteryx splendens</i>	Banded Demoiselle
<i>Coenagrion puella</i>	Azure Damselfly
<i>Enallagma cyathigerum</i>	Common Blue Damselfly
<i>Erythromma najas</i>	Red-eyed Damselfly
<i>Ischnura elegans</i>	Blue-tailed Damselfly
<i>Libellula depressa</i>	Broad-bodied Chaser
<i>Libellula quadrimaculata</i>	Four-spotted Chaser
<i>Orthetrum cancellatum</i>	Black-tailed Skimmer
<i>Platycnemis pennipes</i>	White-legged Damselfly
<i>Pyrrosoma nymphula</i>	Large Red Damselfly
<i>Sympetrum striolatum</i>	Common Darter

This image shows a blank sheet of white paper with horizontal green ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



BOURNE WOOD



A portrayal of a wood in Kesteven

by Richard G Jefferson

This booklet provides an insight into the history and natural history of Bourne Wood, a large ancient woodland in south Lincolnshire, UK. Its contribution to nature conservation and local amenity are outlined.

Friends of
Bourne Wood

A green leaf icon with a grid-like pattern, positioned below the text "Friends of Bourne Wood".