National Character Area profile:

95. Northamptonshire Uplands

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Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper,[1] Biodiversity 2020[2] and the European Landscape Convention,[3] we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

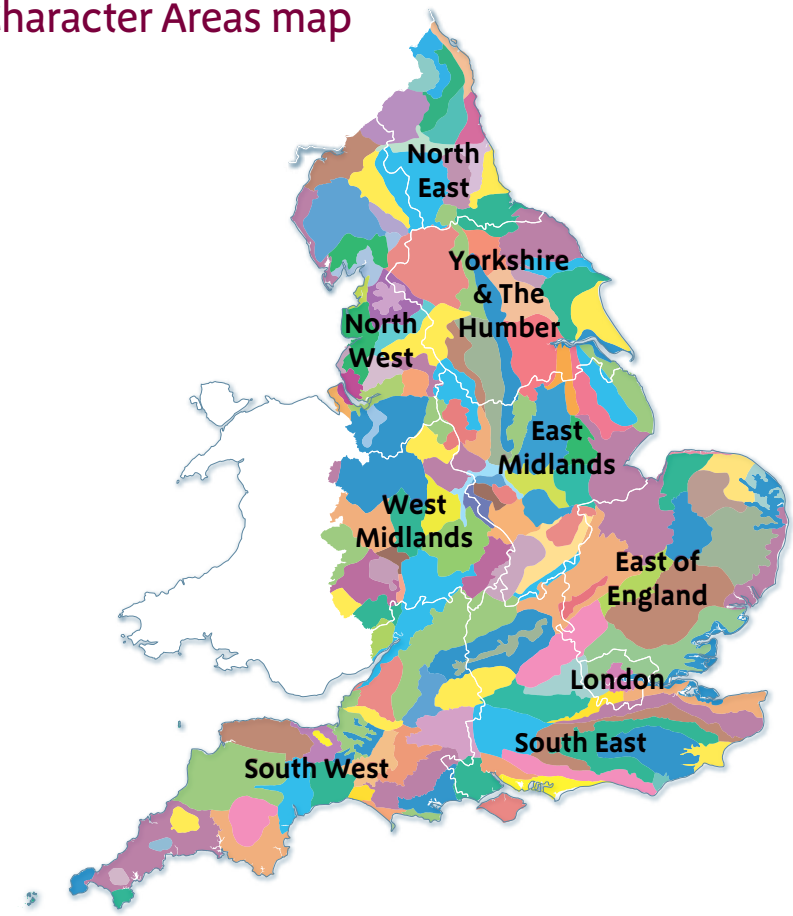
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing**ncaprofiles@naturalengland.org.uk**.

National Character Areas map



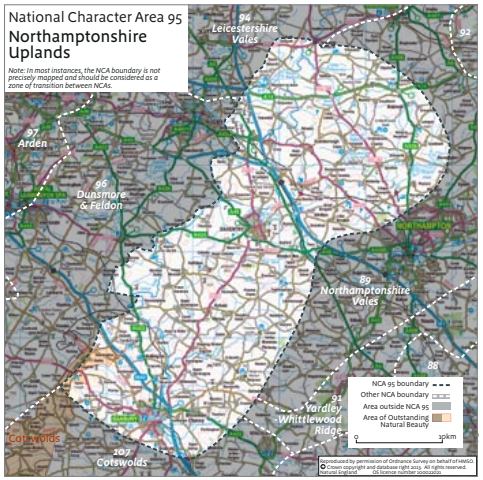
[1] The Natural Choice: Securing the Value of Nature, Defra (2011; URL: **www.official-documents.gov.uk/document/cm80/8082/8082.pdf**)
[2] Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: **www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf**)
[3] European Landscape Convention, Council of Europe (2000; **URL: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm**)

Summary

The Northamptonshire Uplands National Character Area (NCA) is an area of gently rolling, limestone hills and valleys capped by ironstone-bearing sandstone and clay Lias, with many long, low ridgelines. Rivers flow out from the NCA in all directions, including several major rivers – the Cherwell, Avon, Welland, Tove, Ouse, Nene and Ise. While there are areas of differing character, there are strong unifying landscape features across the Northamptonshire Uplands, most importantly the extensive areas of open field systems with ridge and furrow and the earthworks of deserted and shrunken settlements which occur throughout. Other features include the strong, mostly Parliamentary enclosure pattern with high, wide, A-shaped hedgerows bounding the largely rectilinear fields with their frequent mature ash and oak trees; the many country houses and their associated extensive areas of historic and nationally important designed parkland landscapes; the distinctive ironstone, cob and brick nucleated settlements with their large stone churches, often with prominent steeples; the narrow lanes with very wide grassy verges; and the small, scattered but prominent broadleaved woods and coverts. There are also wide, long-distance views from the edges and across the ridgetops throughout the area.

Land is in mixed agricultural use, mostly pasture and arable, and reservoirs are a significant feature. Woodland is sparse, with many scattered, small, broadleaved coverts and copses, some in prominent hill-top positions, dotted across the landscape. The few ancient woodlands, such as Badby, take on a special value and interest in an NCA with few other areas of semi-natural vegetation and relatively limited wildlife interest. Flood plain grazing marsh occurs around Banbury and there are small, scattered pockets of mire, lowland meadow, calcareous grassland and lowland dry acid grassland throughout the NCA, some designated Sites of Special Scientific Interest for their biodiversity interest. The area is also important for farmland birds.

Around the fringes and two main towns, the area has seen extensive development and construction of major strategic road and rail infrastructure, with associated reductions in levels of tranquillity and loss of rural character, though overall the area retains a strong sense of rural tranquillity. The area is particularly important for delivery of sense of history, sense of place, recreation and water availability and some ecosystem services are under pressure from development and agricultural practice, particularly water availability and water quality, soil erosion, soil quality and tranquillity.



Click map to enlarge; click again to reduce

Statements of Environmental Opportunities:

- **SEO 1:** Protect, manage and promote the historic and archaeological features, designed landscapes and field patterns – including the parkland, battlefield sites, canals, ridge and furrow and settlement sites, and distinctive high hedgerows with their many trees – to ensure that these key features for sense of place and history are conserved, people's enjoyment and understanding is increased, and recreation opportunities are enhanced.

- **SEO 2:** Conserve, enhance, expand and restore the semi-natural and farmed features of the area – including the mix of agricultural production, particularly the pasture and meadows, patches of semi-natural habitats, and veteran and ancient trees – to enhance biodiversity and landscape character and to safeguard the continued sustainable provision of food.

- **SEO 3:** Conserve, manage and enhance the river catchments and reservoirs, improving water quality and flow management and benefiting biodiversity and recreation through managing soils, diffuse pollution and run-off, reconnecting flood plains and extending natural habitats.

- **SEO 4:** Conserve, maintain and promote local building styles and materials and plan strategic growth, infrastructure development and mineral extraction to ensure they protect remaining areas of high tranquillity, strengthen local sense of place and biodiversity, and increase adaptation for climate change through multifunctional green infrastructure networks, building on existing resources such as canals, rivers and access routes, creating strong ecological and recreation networks.

Wide panoramic views are a key feature of the area, here from the Knightley Way, one of many named long-distance paths.

Description

Physical and functional links to other National Character Areas

The Northamptonshire Uplands National Character Area (NCA) extends north-east from the Cotswolds NCA south of Banbury to border the Northamptonshire Vales NCA and Leicestershire Vales NCA around Market Harborough at its northern extent. In the west it borders Dunsmore and Feldon NCA and it shares most of its eastern boundary with the Northamptonshire Vales NCA. A small area in the south-east abuts the Yardley Whittlewood Ridge NCA. It is part of the wider Jurassic 'wolds' landscapes that include the dip slope of the Cotswolds and extend north to the High Leicestershire NCA and the Leicestershire and Nottinghamshire Wolds NCA. The south-western corner of the NCA is designated as part of the Cotswolds Area of Outstanding Natural Beauty (AONB).

The hills are 'the main watershed of Middle England', with wide, far-reaching views from the edges and across the ridgetops. The area is an important supplier of water to towns in surrounding NCAs with many reservoirs and much abstraction from rivers. The River Cherwell rises in the south near Charwelton and flows south. The Tewkesbury Avon rises on the north-eastern edge near Naseby, and flows west then south-west, while the north-east-flowing Welland rises near Sibbertoft. The rivers Tove and Ouse rise here too and flow south-east. The eastern slopes form the upper catchment of the Nene, with the major tributary of the Ise in the far north-east. Topographically, the Upper Nene divides the Northamptonshire Heights to the north from the Cherwell/Ouse plateau, sometimes known as the 'Ironstone Wolds' in the south.

The NCA is crossed by several nationally important transport corridors. It is effectively divided in two from Rugby to Northampton by the M45, M1, A5, the West Coast Main Line railway and the Grand Union Canal. In the south, the M40, A423 and the Oxford Canal cross through, and further north the A14. Urban areas and large towns include Daventry and Banbury. Close by in neighbouring NCAs are Northampton and Milton Keynes, Kettering, Rugby, Coventry, Leamington Spa and Warwick. The many historic houses, parks and gardens, the Knightley Way, Jurassic Way, Brampton Valley Way, Battlefields Trail and the Grand Union and Oxford canals provide well-used recreation assets for people in surrounding areas.

Fawlsey Park; extensive areas of parkland are a key feature of the area, here being restored through agri-enviroment funding and grazed by the once locally common Hereford cattle.

Key characteristics

- Gently rolling rounded hills and valleys with many long, low ridgelines and great variety of landform. Wide, far-reaching views from the edges and across the ridgetops.
- Dominant Jurassic scarp slope of limestone and Lias clay hills capped locally with ironstone-bearing Marlstone and Northampton Sands. Glacial boulder clay covers the northern and eastern areas, with sands and gravels along river valleys.
- The Upper Nene Valley divides the gently undulating Northamptonshire Heights to the north from the hillier Cherwell/Ouse plateau (the 'Ironstone Wolds') to the south and has been exploited for sand and gravel.
- Rivers rise and flow outwards in all directions, including the rivers Cherwell, Avon, Welland, Tove, Ouse, Nene and Ise, and the area forms the main watershed of Middle England.
- Sparse woodland cover, but with scattered, visually prominent, small, broadleaved woods, copses and coverts, particularly on higher ground.
- Mixed farming dominates with open arable contrasting with permanent pasture.
- Typical 'planned countryside' with largely rectangular, enclosed field patterns surrounded by distinctive, high, often A-shaped hedgerows of predominantly hawthorn and blackthorn, with many mature hedgerow trees, mostly ash and oak. Some ironstone and limestone walls in places and some localised areas of early irregular enclosure.
- Small pockets of semi-natural vegetation with many small scattered broadleaved woodlands, some ancient and often on hill tops, with mires, areas of lowland meadow, calcareous grassland and lowland dry acid grassland in the river valleys. Bluebell woods occur in places.
- Nationally rare, locally abundant and prominent ridge and furrow, with frequent deserted and shrunken settlements. Several large historic country estates such as Cottesbrooke Hall and Althorp and many small country estates, with extensive parkland containing a great many mature, veteran and ancient trees.
- Nucleated villages often on hill tops or at valley heads with low densities of dispersed settlement. Cob, ironstone and limestone in older buildings with some remaining thatch, but mostly pantile and slate roofs. Brick buildings in some villages. Extensive new developments in villages along main transport corridors and in the two main towns.
- A dense network of narrow lanes with wide grassy verges, often following ridges, crossed by many strategic road and rail corridors, including the M1, M40, A14, West Coast Main Line railway, Great Western Railway line and the Oxford and Grand Union canals.
- The many historic houses, parks and gardens open to the public, the reservoirs, long-distance paths (such as the Knightley Way, Jurassic Way and Brampton Valley Way) and the Grand Union and Oxford canals provide well-used recreation assets.

The Northamptonshire Uplands today

An area of gently rolling, rounded limestone hills and valleys capped by ironstone-bearing sandstone and clay Lias, with many long, low ridgelines and wide, long-distance views across the ridges throughout. It lacks a strong sense of identity, not least because of its very varied landform.

The area forms the 'main watershed of Middle England', with rivers radiating in all directions. At the southern end, the River Cherwell rises near Charwelton and flows south. The Avon rises on the eastern edge near Naseby flowing west and south-west, while the north-east-flowing Welland rises near Sibbertoft. The tributaries of the Tove and Ouse originate in the south-east flanks, flowing south-east. Much of the eastern side of the area forms the upper catchment of the Nene, with its major tributary, the Ise, arising in the north-east. Topographically, the Upper Nene divides the Northamptonshire Heights to the north from the Cherwell/Ouse plateau or 'Ironstone Wolds' to the south.

In the northern half of the NCA, the Northamptonshire Heights have a rolling, gently hilly landform, with long, level views criss-crossed by a regular pattern of high hedgerows with frequent mature trees. Settlement is sparse with some small villages prominently sited on hill tops, and some lying within the small, sheltered valleys, often with large stone churches with prominent steeples. The widely spaced villages and infrequent, isolated farmsteads give the area a remote, empty feel. South of Daventry, the Cherwell/Ouse plateau (known as the 'Ironstone Wolds') is hillier and the undulations are sharper and more frequent. There is less of the glacial boulder clay which dominates the northern area, settlement is more frequent and arable predominates. The two distinctly hilly areas are divided by the low, flat valley of the River Nene and surrounded to the west, east and north by wide, open, low-lying vale landscapes. The south-western corner of the NCA is designated as part of the Cotswolds AONB.

There are, however, strong unifying landscape elements across the Northamptonshire Uplands. The most historically important of these, found in the remaining pasture fields, are the extensive areas of open field systems with ridge and furrow and the earthworks of deserted and shrunken

Banbury Town Centre.

settlements. Occurring frequently throughout the NCA, they are prominent and evocative in evenings and winter, when low sun casts long shadows and they seem to dominate the landscape. Other unifying features include the high, wide, A-shaped hedgerows (associated with the strong hunting and steeple chasing traditions of the area) bounding the largely rectilinear fields with their frequent mature ash and oak trees; the many historic country houses and their associated extensive areas of designed parkland landscapes and gardens; the attractive and distinctive ironstone, cob and brick villages; and the small, scattered but prominent broadleaved woods and coverts.

Village cottages are built mostly of local ironstone and brick.

Land is mostly in agricultural use, with a mixture of arable and pasture, though around the edge of the area, reservoirs are a significant element within the landcover, and along the Nene Valley, gravel extraction has occurred. Arable is extensive on the more level ground of the ridgetops, especially south of Daventry where the highest levels of field boundary loss have occurred. Here, hedgerows can be quite sparse and low and hedgerow trees intermittent. Limestone and ironstone walls also occur in some places, such as around Lamport.

Woodland is sparse, with many scattered, small, broadleaved coverts and copses, some in prominent hill-top positions, dotted across the landscape and quite frequent in an arc in the south from Badby to Woodend. The few ancient woodlands and bluebell woods, such as Badby, take on a special value and interest where there are few other areas of semi-natural vegetation and limited wildlife interest. Flood plain grazing marsh occurs around Banbury; there is a concentration of acid grasslands west of Northampton and south of Daventry, and of lowland meadow sites in South Northamptonshire, often associated with other semi-natural features; and there are small, scattered pockets of mire, lowland meadow, calcareous grassland and lowland dry acid grassland throughout, especially along the river valleys, some designated Sites of Special Scientific Interest for their biodiversity interest. The area is also important for farmland birds. The Brampton Valley Way and the Grand Union and Oxford canals provide important wildlife corridors. Upper parts of the River Nene fall within the Nene Valley Nature Improvement Area (NIA), which seeks to improve connectivity of habitats and restore the ecological network in the Nene Valley.

The predominant field pattern, and a strong unifying factor, is Parliamentary enclosure of the 18th and early 19th centuries imposed on an 'up and down' landscape; the rectilinear pattern is frequently strongly visible, though areas

of earlier piecemeal enclosure are found in places. Straight, narrow enclosure roads with wide, grassy verges, often following ridges, add to a regular, characteristic pattern in the landscape. From the ridges, the essence of the uplands, described by W.G. Hoskins, can be seen: "In this hill country, partly isolated summits and partly high table land in places, the wind blows hard and cold... Up at Naseby next door to Cold Ashby... their voices are louder than anywhere else, they shout at each other to overcome the winter wind."

Settlements are generally small, nucleated villages with distinctive ironstone, cob and red-brick buildings with pantile, clay or thatched roofs, clustered around an ironstone church. Some villages, such as Naseby and the aptly named Cold Ashby, are on prominent hill-top sites but others lie in sheltered situations at the heads of minor valleys, often set within mature treecover, with an enclosed, intimate, sheltered character and a unity resulting from the distinctive local vernacular.

Estate farmland with typical well managed hedges, many small woods and replanting of boundary trees.

The modest village houses are a strong contrast to the nationally important great country houses with their strong character and extensive designed parklands and estates containing a great many veteran and mature open-grown trees, providing rare habitat for lichens and invertebrates. Cottesbrooke, famed for its gracious proportions and extensive parkland, has enabled the survival of extensive open field systems of ridge and furrow; Canons Ashby is built around a medieval monastery; and Althorp House has the grand Georgian elegance of Henry Holland's design. There are also many fine smaller houses, most in local stone, including Ashby St Ledgers, Stanford and Sulgrave. The estate character of the landscape is emphasised by the uniformity of buildings in the estate villages and lodges.

Around the fringes, along the Cherwell and between Rugby and Daventry, many villages have become significantly enlarged by 20th-century development which does not reflect the distinctive local vernacular. The remoteness of the central undeveloped villages is emphasised by the minor roads that serve them, providing a stark contrast to the busy strategic routes of the West Coast Main Line and Great Western Railway and the M1, M40, M45, A14, A45, A5, A508, A422 and A423 roads which cross the area.

Recreation facilities include the Grand Union Canal and Oxford Canal, Pitsford Reservoir, the many historic houses, parks and gardens open to the public and long-distance routes such as the Knightley Way, Battlefields Trail, Jurassic Way and Brampton Valley Way.

The landscape through time

The area is mainly underlain by sedimentary strata of the lower and middle Jurassic periods. The muds and limestones of the Lias Group, which outcrop in the west of the area, were laid down in a warm shallow sea which was rich in marine life including many species of ammonites. Many of the limestones and sandstones of the Northampton Sands at the base of the Inferior Oolite Group, overlying the Lias Group, are very rich in iron. They were also laid down in a shallow sea, and subsequent weathering of minerals has resulted in the formation of rocks of distinctive colours. Overlying these, the clays and sandy limestones of the Great Oolite Group outcrop in the east of the NCA, continuing in a broad swathe through the central part of the Northamptonshire Uplands. Collectively, these rocks – which belong to the Rutland Formation, Blisworth Limestone and the Blisworth Clay – were deposited near to the shore of a shallow tropical sea.

Overlying the solid geology in the east and north of the area are thick superficial deposits of Quaternary till (boulder clay), with stretches of alluvium (sands and gravels) in the main river valleys, both dating from the Wolstonian glacial cycle. While the area was not glaciated during the Pleistocene, it was affected by extreme periglacial erosion, which has influenced the drainage of rivers including the Cherwell. Soils are closely related to the underlying geology and superficial deposits; here there are mostly types of loamy and clayey soils, often seasonally wet or with impeded drainage and providing mostly Grade 3 agricultural quality land with pockets of Grade 2, good arable land in places, particularly in the river valleys and in the southern half of the NCA around Banbury.

The area forms part of the Jurassic belt of 'wolds' landscapes that stretch from the Cleveland Hills in Yorkshire to Lyme Regis in Dorset, via the neighbouring Cotswolds. In this NCA, all of the sharper features of the Jurassic scarp slope have been smoothed away by a long process of denudation. The history of the area is in many ways typical of a 'wolds' landscape. It was originally covered in thick woodland over a soil not very attractive to early cultivation. Much of the area, particularly the clay plateau to the north-east and the Lias uplands of the south-east, was cleared for grazing in the later prehistoric and Roman period. There is scattered evidence for settlement of this period, most evident around the edges of the area within the river valleys.

The early Anglo-Saxon settlements were along the river valleys but the middle Saxon period saw the farmsteads (-tons) spreading up onto higher ground, and the outstanding late 7th-century church at Brixworth in the north-east of the NCA indicates that these were sites of major significance. This is the area where the Vikings and Saxons met and the incidence of place names with suffixes of '-by' and '-thorpe' indicates the influence of the Danes and the Danelaw in this area.

By the 11th century, there was quite frequent settlement although at a lower density than the surrounding more fertile areas and the predominant pattern of nucleated settlement had already developed. Up to the mid 14th century, colonisation proceeded rapidly. Most of the woodland was cleared and nucleated villages, surrounded by a sea of open fields in ridge and furrow cultivation, dominated the landscape. The substantial churches reflect this main period of the area's expansion and colonisation, which went into decline following the disasters of the mid 14th century: the population shrank and settlements were deserted for a variety of reasons including disease, the limited potential for cereal growth and the difficulty of maintaining the fertility of these upland soils. Ambitious landlords like the Spencers were able to accumulate large areas of land for grazing; in 1577, their flocks at

Wormleighton and Althorp numbered 14,000. Gradually, arable was largely replaced by sheep farming over much of the area and, as a result of the lack of subsequent cultivation, the NCA is now one of the classic locations for deserted settlements, medieval earthworks and shrunken ends of villages, with nationally important survival of ridge and furrow reflecting the former extent of the open field system. As the population shrank in the 14th to early 16th centuries, and monastic lands were added to the estates of the wealthy and the profitability of wool production continued, the great landscape parks and country houses such as Althorp, Canons Ashby, Cottesbrooke and Holdenby were laid out, some by major designers such as Repton and Brown. The strong landlordship that often went with such parks is reflected in the distinctive common architecture of the planned estate villages and lodges. The Elizabethan and Jacobean houses, notably Holdenby, Althorp and Canons Ashby, are particularly associated with the court life of those periods, the poems of Edmund Spenser and the masques of Ben Jonson.

Tenant and freehold graziers tended to maintain or improve village farmsteads, reflected in the many surviving fine stone-built farmhouses, often with threshing barns attached, of the 16th to early 18th centuries. Many of the surviving historic houses within the villages were originally farmhouses, changing function in the 18th and 19th centuries as new, larger steadings with large barns and cattle courts were built on the fringes of settlements and in newly enclosed fields and the remaining open land was enclosed. While there are areas of irregular earlier enclosure, especially in the north, the predominant enclosure pattern in the NCA is regular Parliamentary enclosure dating from the 18th to 19th centuries.

In the 20th century, the main changes to a substantially remote, rural area were the massive loss of elm trees to Dutch elm disease during the 1970s; the building of major road routes including the M1, M40 and A14 which cross it; the widespread expansion of arable cultivation and the building of modern farm buildings, loss of permanent pasture, improvement of remaining grassland and consequent rationalisation of field boundaries, and loss of boundary trees and ridge and furrow, particularly in the southern half of the NCA; the construction of reservoirs around the edge of the area; and, more recently, the construction of telecommunications masts and large numbers of wind turbines, some within the NCA for example round Yelvertoft, but mostly in the surrounding areas.

In recent times, there has been significant development pressure in towns in surrounding NCAs such as Northampton, Rugby and Kettering as well as within the NCA in Banbury and Daventry, with much commuter-related development in nearby villages with good road and rail links to local towns and to cities such as Birmingham and London. The development and upgrading of the strategic transport road and rail routes which cross the area and subsequent associated warehouse, industrial and 'out-of-town' shopping and housing developments along these transport corridors have had a significant urbanising impact on the landscape and reduced levels of tranquillity in these areas.

The Oxford Canal, once a busy industrial waterway is now a well-used recreation resource.

Ecosystem services

The Northamptonshire Uplands NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the Northamptonshire Uplands NCA is contained in the 'Analysis' section of this document.

Many of the villages shelter within extensive amenity tree planting.

Provisioning services (food, fibre and water supply)

- **Food provision:** The area is predominantly agricultural in character, with a mix of pasture and arable crops on predominantly Grade 3 quality agricultural land. The area is important regionally for food production and the farmed landscape has changed as market conditions have changed. There has been a shift in cropping patterns in recent years, with a loss of dairy farms, a decline in mixed farms and significant reductions in grazing livestock numbers and also in glasshouse production. Arable, however, has increased significantly, especially the area growing stockfeed, reflecting an increase in intensity of remaining stock production. Recently, some miscanthus has been planted for biomass production, which, if it increases significantly, may affect the area available for food production. There are pressures on water and soil quality and issues with diffuse pollution and soil erosion in places.

- **Water availability:** Water resources from the Nene, Cherwell, Ouse and Avon are heavily exploited and are considered to be restricted, ranging from 'no water available' to 'over-abstracted', and measures are in place to monitor abstraction rates. The many reservoirs and rivers form an important part of the water supply network to surrounding large towns and to the Grand Union and Oxford canals. The planned major expansions of nearby towns – both inside and around the NCA, including Northampton, Rugby, Daventry and Banbury – will place additional pressure on local water supplies. Increasing future demand from agriculture for irrigation or stock watering could also increase pressure on supply. Climate change may have an impact on water resources, with low rainfall and drought leading to water shortages, reduced water quality and exacerbating low summer flows in rivers, and could lead to an exacerbation of diffuse pollution.

Regulating services (water purification, air quality maintenance and climate regulation)

- **Regulating soil erosion:** Around 60 per cent of soils are erosion prone and there are four Defra priority catchments in this NCA – which cover the Upper Cherwell, Upper Avon and River Leam, River Nene and Upper Great Ouse – where soil erosion and management are identified as key issues. Employing soil management measures will improve soil structure and reduce erosion in areas most at risk such as on the ridges and sloping valley sides, and in areas with low soil organic matter levels or compaction. Increasing areas of permanent grassland and wide buffer strips of grassland alongside watercourses in arable areas would reduce erosion risk, especially where such grassland is managed under extensive grazing regimes. An increase in semi-natural habitats would increase the area of land maintained under stable soil conditions, helping to bind soils together, aiding water penetration and reducing erosion, for example through restoring and extending woodland, hedgerows, wetlands and mires.

- **Regulating water quality:** Water quality in the area is in need of improvement, particularly the ecological status, which ranges from good to poor. Pressures include land use change, loss of permanent pasture and parkland, increase in arable production, intensification of agricultural production, and high levels of nitrogen and phosphorus. The planned expansion of settlements in the area could have implications for water quality, particularly from increased phosphate from sewage and road run-off, and there is a need to ensure that sustainable water management is adequately built into urban extensions to prevent deterioration of water quality. Wider application of best practice land management (catchment sensitive farming techniques) to areas both within and outside the current priority catchment areas would significantly improve water quality. The Upper Nene also lies within the Nene Valley NIA which seeks to improve water quality. Non-native species such as Himalayan balsam and Japanese knotweed pose a threat in some areas.

- **Regulating water flow:** The NCA contains the headwaters of four major rivers – the Avon, Ouse, Nene and Cherwell – some with a history of flooding, especially the Avon around Yelvertoft, the Nene around Weedon Bec and the Cherwell around Banbury. Strategic roads including the M1, M40 and A14 can be affected in these areas. Many soils in the NCA have impeded drainage and there is a very low level of woodland cover and a loss of permanent pasture, contributing to the potential for high levels of run-off. Flood storage areas on the flood plains could reduce risk to settlements downstream and the preferred approach to flood management is to investigate flood storage options, with environmental enhancements to improve the natural state of rivers and their habitats such as the planting of riparian woodland and the restoration of permanent grassland, parkland and hedgerows to intercept water and, with their higher carbon soils, reduce run-off and minimise soil erosion. Good soil management to avoid or reduce soil compaction and increase soil organic matter could aid water infiltration rates and reduce run-off. Plans for extensive new development, particularly in flood plains around Weedon Bec and Banbury, will have an impact on flood risk and need additional management.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** Sense of place is provided by the varied undulating hilly landform and many long, low ridgelines. A sense of inspiration is associated with the rural landscape and its visible historical associations, including the extensive ridge and furrow, open ridgelines affording long views and areas of ancient woodland. These senses are strongest in the characteristic designed parklands and estates that surround the many historic country houses. Distinctive, highly attractive, small, nucleated villages are predominantly constructed of ironstone, cob and brick and linked by straight, narrow enclosure roads with wide grassy verges, alongside strong rectilinear field patterns with tall, A-shaped hedgerows and many mature hedgerow trees. Woodland cover is sparse with coverts and spinneys associated with the area's strong hunting tradition. Navigable canals and reservoirs are an important visual component of the landscape. A small area of the NCA (less than 1 per cent) lies within the Cotswolds AONB, reflecting high levels of natural beauty in the area. Development is changing character in some areas and the open nature of the landscape means that it is vulnerable to large-scale development. Major road infrastructure developments and urban areas associated with Daventry, Banbury and the main road/rail corridors do not reflect the local vernacular character, which is becoming highly diluted in these areas. The extensive areas of parkland are characteristic in this NCA and many are at risk through neglect and lack of management of their designed landscapes and, in some cases, arable conversion.

- **Sense of history:** Sense of history is particularly strong and evident especially in the abundant and prominent ridge and furrow field systems and deserted settlements which are of national importance. There are many archaeological sites, covering all periods of occupation from the Palaeolithic to the Second World War. Scheduled Ancient Monuments include iron-age hill forts, Roman villas, medieval settlements, ridge

Canons Ashby, one of the fine country houses charateristic of the area.

and furrow, and open field systems. Large numbers of non-scheduled archaeological sites reflect the long history of settlement and good state of preservation of early features under permanent, unploughed grassland in parkland landscapes of the 18th and 19th and earlier centuries. The many manor houses such as Althorp, Canons Ashby and Cottesbrooke as well as their extensive parklands (some laid out by important designers such as Repton and Brown) are key features, many of national importance. Other important landmarks include Naseby, Edgcote and Cropredy battlefields, the Grand Union and Oxford canals, the high numbers of Listed Buildings and the large stone churches, reflecting the past wool-based wealth of the area. Most archaeological sites are small, with little or no public access, and the majority of the nationally important ridge and furrow and settlement sites have no formal protection. The main threats are from ploughing and neglect. There has been significant loss of ridge and furrow and other features through cultivation, reducing the ability to read the history of the area in the landscape and a significant loss of hedgerows and hedgerow trees and field amalgamation due to the demands of modern agricultural practice.

- **Tranquillity:** Despite a dramatic decline in tranquillity and an increase in disturbance overall, many parts of the NCA still retain a strong feeling of remoteness and tranquillity. The remaining areas of parkland and their historic country houses, the ridge and furrow and other historic features, the remaining rural areas of pastoral farmland, the canals, rivers and reservoirs, woodland and semi-natural habitats all play an important role in delivering health and wellbeing benefits to people in the NCA and surrounding area and should be conserved and enhanced. The sparse settlement pattern, narrow country lanes with their wide verges, distinctive small, attractive villages and far-reaching views are also often associated with feelings of escapism, spiritual refreshment and inspiration and should be conserved.

- **Recreation:** Rights of way crisscross the rolling landscape, including many long-distance routes offering panoramic views across the NCA and surrounding areas. There is very little publicly accessible land, but the many country houses, gardens and parks which are open to the public are popular recreation destinations, as are Pitsford Reservoir and other reservoirs, the navigable canals and country parks. Ongoing development pressure in the area will lead to further demand and pressure to increase recreation use of the area. There is scope to accommodate this, though careful green infrastructure planning, links and management would be needed to avoid conflicts between users or adverse effects on remaining areas of high tranquillity, biodiversity, archaeological or historic importance, or on soil or water quality. There are also opportunities to increase people's understanding and enjoyment of the special qualities of the area, particularly its strong sense of history.

- **Biodiversity:** There are nationally important sites for winter wildfowl, woodland, parkland and lowland acid, neutral and flood plain meadows present in the NCA as well as areas of importance for farmland birds and arable plants. While current areas important for biodiversity are small in extent, these remaining areas take on an increased significance for permeability in the countryside.

Statements of Environmental Opportunity

SEO 1: Protect, manage and promote the historic and archaeological features, designed landscapes and field patterns – including the parkland, battlefield sites, canals, ridge and furrow and settlement sites, and distinctive high hedgerows with their many trees – to ensure that these key features for sense of place and history are conserved, people's enjoyment and understanding is increased, and recreation opportunities are enhanced.

For example, by:

- Protecting and conserving and, where appropriate, restoring designated historic assets – including Scheduled Ancient Monuments, Registered Parks and Gardens, registered battlefield sites and Listed Buildings, especially those which are considered 'at risk' – and encouraging sensitive management of the outstanding features, including the nationally important open field systems, ridge and furrow and deserted medieval settlements and shrunken ends of villages, protecting archaeological assets from damaging activities such as ploughing, animal burrowing and tree growth, and developing a co-ordinated approach to their management by conservation organisations and farming and landowning interests.
- Protecting, conserving, restoring and enhancing the extensive non-designated historic parklands, their settings, their veteran and ancient trees, and rare fauna and flora, including lichens, invertebrates and bats, to protect their heritage, landscape and biodiversity interest, encouraging the development of comprehensive management plans which respect the historic integrity of parkland design and features, as well as taking into account the needs of their biodiversity, archaeology and modern farming practice.
- Encouraging the surveying, protection, conservation, appropriate management and interpretation of non-designated historic sites, including those on the Historic Environment Record, as well as field patterns and boundaries; and researching and raising awareness of the history and time-depth of the area, improving protection and management of the area's heritage and people's enjoyment and understanding of historic assets which contribute to the strong senses of place and history.
- Conserving small-scale vernacular features which no longer serve their original purpose, such as water troughs and ponds, but which reflect the past cultural history of the area and contribute to the strong senses of place and history.
- Maintaining field patterns, hedgerows and limestone and ironstone drystone walls (where they are in good condition) and restoring or re-creating both hedgerows and walls using local ironstone and limestone and the Midlands style of hedge-laying, and maintaining the distinctive A-shaped, high, thick hedgerows with their many standard trees, where condition has declined or where they have been replaced by fencing, to maintain and increase habitat connectivity and the cultural influence of farming patterns in the landscape.
- Providing easily accessible sites of archaeological, historical and cultural interest for both educational and public use and encouraging appropriate interpretation of the qualities of the landscape and the importance of its historic buildings, parkland, battlefield sites and archaeological features, to improve understanding and enjoyment of the historic environment.

SEO 2: Conserve, enhance, expand and restore the semi-natural and farmed features of the area – including the mix of agricultural production, particularly the pasture and meadows, patches of semi-natural habitats, and veteran and ancient trees – to enhance biodiversity and landscape character and to safeguard the continued sustainable provision of food.

For example, by:

- Expanding, restoring and managing the remaining semi-natural habitats – especially remnant hay meadows, species-rich pasture and meadows, parkland, acid and calcareous grassland, purple moor-grass, lowland heath, reedbeds, flood plain grazing marsh, hedgerow and woodland habitats – through appropriate grazing and management, to increase diversity of habitat mosaics and encourage a wide structural diversity and a variety of flowering plants that can provide both feeding and breeding sites for pollinators and pest regulators and increase connectivity through creating corridors, buffers and stepping stones of habitats important for insects and other biodiversity.
- Encouraging sustainable farming methods which produce a wide range of crops, safeguarding food supplies into the future and ensuring the future viability of farms in the area without compromising delivery of other ecosystem services such as water and soil quality, soil erosion and biodiversity.
- Seeking to balance efficient farming production with conservation of the historic environment and biodiversity, promoting farming systems which also maintain and restore the farmed landscape and range of habitats, field boundaries, areas of parkland and woodlands, encouraging retention of remaining permanent pasture, reversion of arable to pasture, (particularly in ex-parkland sites), managing grazing of grassland habitats and neighbouring areas at levels that will encourage good ecological condition and extending the influence of remaining high-quality patches of unimproved grassland by developing links to increase connectivity, improve habitat condition, encourage species diversity, protect soil quality and carbon storage, and increase resilience to climate change.
- Encouraging re-introduction of previously declining traditional cattle breeds such as Hereford and Dairy Shorthorn to diversify the grazing regime, maintain the genetic diversity of agricultural animals against future threats and conserve the agricultural heritage of the area; and encouraging the promotion of local brand meats to try to increase the viability of traditional breeds.
- Encouraging the agricultural practice of hay-making to maintain and enhance the remaining species-rich meadows, and encourage restoration of hay-making to suitable meadows to increase biodiversity and connectivity of the remnant hay meadows and to encourage a variety of flowering plants that can provide both feeding and breeding sites for pollinators and pest regulators which contribute to food provision services.
- Conserving and managing ancient and veteran trees in both parkland and hedgerows to benefit invertebrate fauna and encourage selection

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and management of future veteran and ancient trees from the current mature stock, to ensure continuity of this rare resource.

- Surveying the road verges of the National Character Area (NCA) to map the location of species-rich verges and to establish whether current verge management is appropriate; and encouraging appropriate management regimes of such verges to ensure that these local features are retained in the landscape, contributing to the semi-natural grassland resource, and maintaining and enhancing species diversity and insect populations.
- Managing arable cropping patterns and arable cultivation, encouraging winter stubbles and wide field margins to encourage priority species such as rare arable plants and the full range of farmland birds and mammals and, where possible, seeking a reduction in the use of pesticides, herbicides and nutrients, to enhance biodiversity and reduce diffuse pollution.
- Encouraging biomass production including miscanthus and short rotation coppice in areas of high yield potential which do not suffer from soil erosion or conflict with food production, important sites for biodiversity, archaeology, historic landscape or views from the ridgelines and avoiding planting biomass crops in fields which are crossed by rights of way or adjacent to popular routes to avoid conflicts with recreation and enjoyment of the countryside.
- Encouraging good hedgerow management in areas of biomass planting, protecting and restoring the traditional Midlands hedgerow style with its high, A-shape and many hedgerow trees in order to mitigate the landscape impacts of biomass crops.
- Encouraging best practice and minimisation of the use of pesticides and herbicides where possible, to minimise impact on pollinators and reduce impacts on water quality, encouraging management of arable land to maximise use of natural pest control methods through beetle banks, grass margins and headlands in fields.
- Developing interpretation of the key features and assets of the area, particularly its geology, farming practices, habitats and biodiversity and providing easily accessible and 'access for all' sites of wildlife, historical and geological interest for both educational and public use.
- Encouraging volunteers to undertake tasks such as surveying and conserving the wildlife, historical, cultural and geological interest to increase knowledge and understanding.

Narrow lanes with wide grassy verges bordered by high, thick hedges occur throughout the area.

SEO 3: Conserve, manage and enhance the river catchments and reservoirs, improving water quality and flow management and benefiting biodiversity and recreation through managing soils, diffuse pollution and run-off, reconnecting flood plains and extending natural habitats.

For example, by:

- Enhancing and managing the quality of the watercourses, to maintain them as distinctive features in the landscape and enhance their riparian habitats and wildlife interest, restoring, expanding and linking riparian semi-natural habitats such as wet woodland, valley mires, reedbeds and grazing marsh along watercourses in the valleys; and reconnecting rivers with their flood plain watermeadows to slow run-off and improve water storage capacity, while reducing flood risk and soil erosion, and improving water quality, climate regulation, habitat networks, resilience to climate change and recreation opportunities.
- Promoting sustainable use of local water resources and use of water efficiency measures by commercial, agricultural and domestic users to reduce consumption where possible, especially in new developments, ensuring that any further abstraction is carefully monitored and controlled to avoid having an impact on water flow in the rivers.
- Managing river and reservoir banks, flood plains and riparian habitats to ensure a robust cover of semi-natural vegetation, and ensuring river engineering works are carried out in an ecologically sensitive manner to naturally filter the water, reduce soil erosion and sedimentation, and reduce poaching by stock through wide buffer strips, fencing, broadleaved woodland and scrub and controlling invasive non-native species which threaten the stability of river banks.
- Working with land managers and authorities in nearby NCAs to address water flow issues at a catchment scale, including implementation of the River Nene Catchment Flood Management Plan[4].
- Encouraging implementation of the vision and objectives of the Nene Valley Nature Improvement Area, including tackling water resource and flow issues and encouraging uptake of advice and grants available through the Catchment Sensitive Farming Schemes targeted on the area to manage watercourses to prevent diffuse water pollution, allow water tables to rise where appropriate, and to promote good soil management in the priority catchments.
- Encouraging best practice in soil management, adopting Defra's Code of Good Practice (2009) and the Environment Agency's 'Think Soils' initiative (2008), to ensure continued sustainable food production which does not compromise other ecosystem services.
- Ensuring that farm infrastructure is able to reduce rates of point and diffuse pollution generated in and around the farms through improved, roofed silage, slurry and manure storage, grey water separation, rainwater storage, improvements to storm overflows and good handling facilities.
- Reducing soil erosion through provision of livestock drinking troughs, sediment ponds and traps, swales with check dams, piped culverts in ditches, resurfacing of gateways, livestock and machinery tracks, watercourse

[4] River Nene Catchment Flood Management Plan, Summary Report, Environment Agency (December 2009)

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crossings, gate relocation and hard bases for drinkers and feeders, while ensuring their sensitive design in this high-quality landscape.

- Managing non-riparian woodland, parkland and hedgerows and creating new native woodland to increase water infiltration, slow flows, reduce soil erosion, act as wind breaks, improve soil quality through increased organic matter and soil fauna, and bind soil in proximity, avoiding sites of biodiversity or archaeological interest.
- Promoting extensive grazing of pasture where possible, protecting wet soils from heavy grazing, poaching and compaction, applying light applications of farmyard manure rather than artificial fertilisers to encourage build-up of soil organic matter to increase carbon storage/retention and drought tolerance of crops; and encouraging techniques such as direct drilling, inclusion of break crops and retention of winter stubble to protect soil.
- Working with the farming community to promote good nutrient and pesticide management, managing applications of pesticides, slurry and manure to maximise uptake and reduce run-off where possible, by avoiding manure spreading in winter on frozen, hard ground or very wet ground, or when there is no grass growth, and use of biobeds.
- Seeking to plan cultivation timings carefully and, where possible, minimising machinery and stock movements in wet conditions and avoiding using heavy machinery on wet soils to avoid damage to and compaction of topsoils and improve water infiltration, reducing surface run-off, increasing resilience to drought and encouraging the use of minimum tillage techniques such as direct drilling to reduce soil exposure and break-up.

The Northamptonshire Uplands near Newnham showing an example of the extensive ridge and furrow which orrurs frequently on permanent pasture throughout the area.

SEO 4: Conserve, maintain and promote local building styles and materials and plan strategic growth, infrastructure development and mineral extraction to ensure they protect remaining areas of high tranquillity, strengthen local sense of place and biodiversity, and increase adaptation for climate change through multifunctional green infrastructure networks, building on existing resources such as canals, rivers and access routes, creating strong ecological and recreation networks.

For example, by:

- Protecting the remaining areas with a strong sense of rural remoteness and tranquillity, their gently rolling, rounded hills with their many long, low ridgelines, the great variety of landform and the many wide, far-reaching views into and out from the NCA, from tall, vertical or large-scale developments.
- In the part of the NCA which lies in the Cotswolds Area of Outstanding Natural Beauty (AONB), conserving and enhancing natural beauty and supporting forms of quiet open-air recreation that do not conflict with the purpose of designation and which value the high-quality landscape and natural environment in this area; and encouraging use of the finer-grained information in the Cotswolds AONB Management Plan and the Cotswolds AONB Landscape Strategy and Guidelines, ensuring that landscape opportunities are maximised in ways which do not conflict with the purpose of designation.
- Maintaining the integrity of historic settlement patterns, houses and historic farm building types and layouts, encouraging use of best practice and traditional techniques and materials in the conservation, maintenance, restoration and repair of listed and other historic buildings, including the use of ironstone, cob and brick with thatch, pantile or clay tile roofs.
- Encouraging sympathetic conversions of historic buildings and new developments in the towns of Banbury and Daventry and in nearby villages which respect the particular character, vernacular styles and materials of each.
- Retaining the distinctive, quiet, rural character of the farmland, villages and farms where it still persists, through maintaining the nucleated settlement pattern and rural lanes, restricting development primarily to the main settlements and ensuring it is appropriate in scale and reflects local vernacular styles and materials.
- Planning a strong landscape framework as a context to potential development expansion around Daventry, Banbury and the main transport corridors, ensuring that new development and infrastructure does not have a negative impact on landscape character; considering the visual impact of modern development, particularly urban intrusion and loss of tranquillity; and managing improvements to minor roads to maintain the existing character of the rural road network with its narrow lanes and wide grassy verges.
- Protecting areas of existing green infrastructure in developed areas, especially parks and urban tree planting, and encouraging their restoration, expansion and replacement.

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- Encouraging green infrastructure planning and provision and urban tree planting in new development which link with surrounding rural areas and recreation provision, reducing the heat island effect, and which reflect and reinforce existing landscape character and integrate new development into the area without challenging the existing strong pattern of settlement and enclosure, or the vernacular styles and materials.
- Encouraging multifunctional restoration and enhancement of gravel extraction sites along the Nene Valley and planning to restore new extraction sites once extraction is complete, to conservation end uses; and creating new wetland habitats and providing access and recreational opportunities.
- Encouraging new development and extensions, where proved necessary, and repair work to existing historic buildings that reflect the local building styles, materials and detailing, and maintain heritage significance, and ensuring that on-farm developments respect the original form, style and materials of adjacent farmsteads, retaining and encouraging sympathetic restoration or conversion of redundant buildings which respects their particular local character, vernacular styles and materials.
- Protecting the remaining strong senses of remoteness and tranquillity in areas away from the main settlements and transport corridors, by controlling development and use of night-time lighting, especially on the higher ground.
- Managing and replanting the areas of mature amenity tree planting which shelter many of the villages, using a wide range of species to build in resistance to new tree diseases and to ensure retention of this distinctive local feature.
- Controlling lighting in new developments and conversions, for example by using down-lighters, timers and sensors, to minimise light pollution.
- Avoiding inappropriate development in flood risk areas and minimising run-off from new development, promoting use of sustainable drainage systems (SuDS) in urban areas to help mitigate the impact of flooding; designing new off-mains developments in rural areas to include sustainable drainage systems to improve water infiltration and protect the aquifers; and promoting best practice to prevent effluent leakage from existing septic tanks.
- Maintaining and expanding public access, including the many long-distance walking routes, encouraging provision of new areas of open access, seeking opportunities to improve and expand the rights of way network, and creating additional multi-user paths.
- Encouraging recreational activities which respect the special qualities of the area and finding ways to manage access, visitor pressure and demand, to prevent conflict between different users or adverse effects on the natural or historic environment.

Additional opportunity

1: Conserve, enhance, expand, connect and manage the many, often visually prominent, small, broadleaved woodlands and coverts, areas of wood pasture, sheltering planting around settlements and parkland to enhance biodiversity and landscape character, provide timber and wood products, and assist with regulation of water quality, soil quality and soil erosion.

For example, by:

- Restoring and encouraging management of the existing small, broadleaved and remaining ancient woods, parkland, wood pasture and areas of amenity tree planting around villages, for local timber use and wood fuel, to restore structural diversity, increase woodland connectivity and biodiversity, reduce soil erosion, improve water quality and landscape interest, encourage woodland species of birds and retain the benefits to climate regulation of high soil carbon and active carbon sequestration associated with woodland.
- Re-introducing active coppice management where this will enhance woodland habitat and wildlife interest, strengthening hedgerow networks, particularly where hedgerows connect areas of woodland, and encouraging the planting of a wide range of tree species to increase resilience to climate change and new diseases.
- Encouraging new small-scale planting and expansion of existing broadleaved woodland for timber production and to enhance landscape and biodiversity, in appropriate locations where it can be accommodated without compromising key features of the area such as the views from the ridgelines, the open landscape character with prominent scattered small hill-top woods, parkland, archaeological features or priority habitats while respecting the shape and scale of existing woodlands.
- Encouraging sympathetic management of the existing coniferous blocks through thinning, selective felling and reshaping, to develop open glades and softer edges which follow the landform, and increase the proportion of broadleaved species and enhance the ground flora.
- Encouraging planting and management for local timber production of the hedgerow and waterside trees to maintain a well-wooded appearance on enclosed land and along rivers.
- Encouraging the creation of new woodland and tree planting in association with new developments to break up their impact on the landscape, reflecting the existing sheltering planting patterns around some villages in the area, which contribute strongly to their sense of place.
- Encouraging the use of a wide range of tree species in new planting to maximise resilience to climate change and novel diseases, and to reduce reliance on oak and ash.
- Encouraging landowners, farmers, authorities and interest groups to survey and monitor for tree disease and to seek to identify and propagate locally resistant strains of ash and oak.
- Encouraging local and regional markets for biomass and wood fuel to support sustainable woodland management.