National Character Area profile:

72: Mease/Sence Lowlands

Supporting documents

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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.

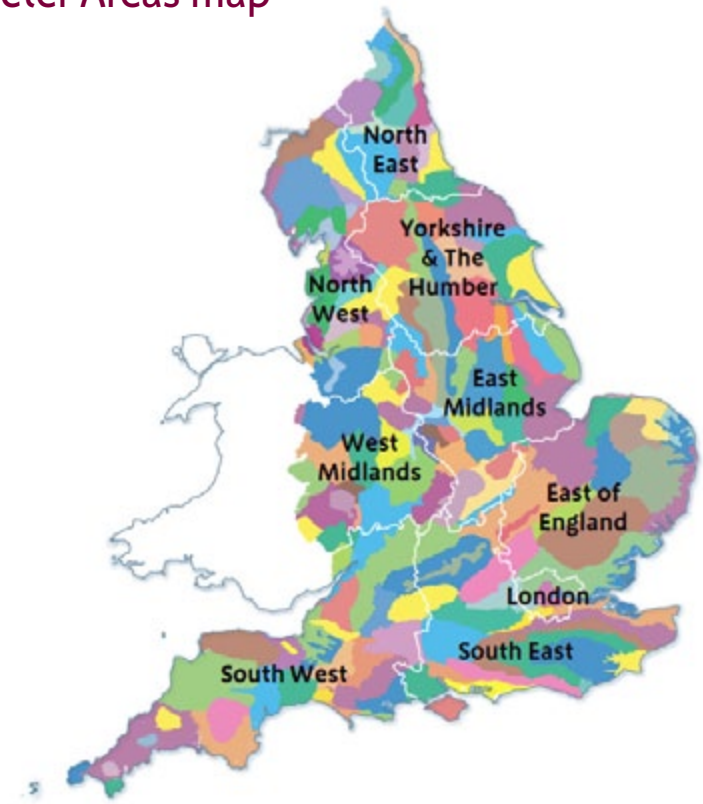
NCA profiles are guidance documents which can help communities to inform theirdecision-making about the places that they live in and care for. The informationthey contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage 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

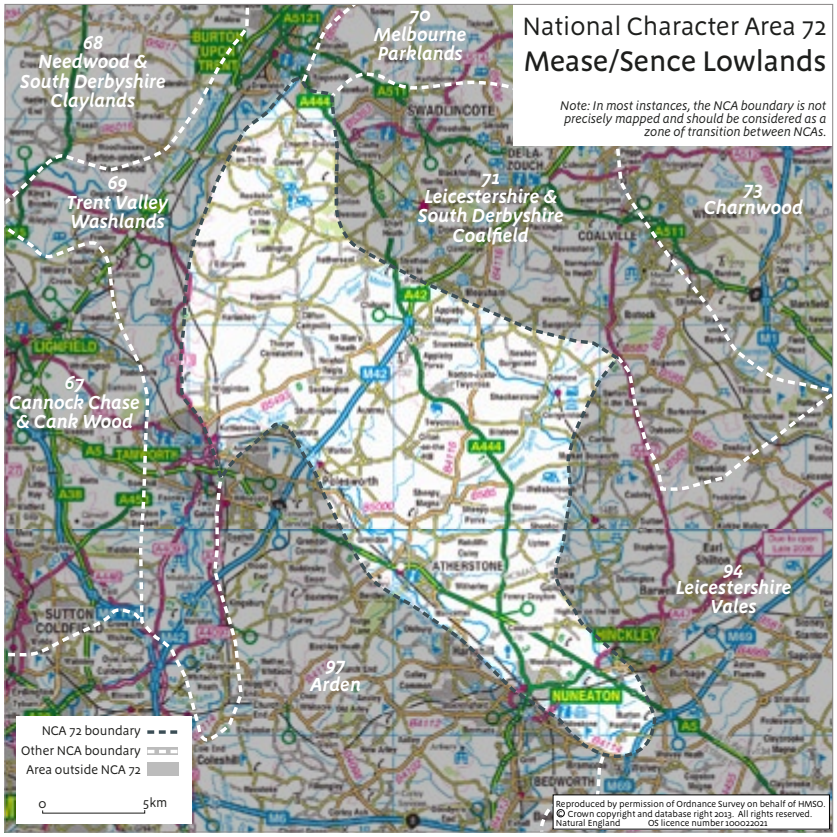
The Mease/Sence Lowlands are a gently rolling agricultural landscape centred around the rivers Mease, Sence and Anker. The area extends across: Derbyshire in the north, Warwickshire in the south, Leicestershire in the east and Staffordshire in the west. With its towns lying on the fringes of the National Character Area (NCA), only a very small percentage of it is urban. These lowlands retain a rural, remote character, with small villages, red brick farmsteads and occasional historic parkland and country houses. The National Forest extends into the area north of the River Mease.

The NCA contains one Special Area of Conservation (SAC) – the River Mease, which is also a Site of Special Scientific Interest (SSSI) – and has 139 ha of nationally designated SSSI, including the Ashby Canal SSSI. Important habitats include neutral grasslands, wet meadows, parkland, wet woodlands, rivers and streams, all of which support characteristic and rare species of international importance, including the white-clawed crayfish, the spined loach and the bullhead fish.

The historic character of this area is important, in particular its ancient woodlands, veteran trees, landscaped parklands and areas of archaeological interest, including ridge and furrow.

With 30 per cent Grade 2 agricultural land, this is a rich and productive agricultural area. Most of the land is in agricultural use, primarily for wheat. There is much potential for an increase in appropriate woodland planting as part of the National Forest initiative, which is increasing recreation opportunities, woodland cover and biomass potential for the future.

Future challenges for this NCA include working to mitigate the pressures of any future developments and managing the area with the aim of making it resilient to issues such as climate change, tree diseases and non-native invasive plants.



Click map to enlarge; click again to reduce.

Statements of Environmental Opportunity

- **SEO 1:** Protect and appropriately manage this important network of natural and manmade rivers, streams, ponds, canals and other wetland habitats for its internationally important populations of white-clawed crayfish, spined loach and bullhead fish and their contribution to sense of place, water quality and climate regulation.

- **SEO 2:** Manage and conserve the woodland habitat of the landscape and plan to expand appropriately scaled woodland cover, particularly in The National Forest, to increase people's access and enjoyment and to secure opportunities to enhance biomass and biodiversity and manage the impact of climate change.

- **SEO 3:** Protect and appropriately manage the historic character, settlement pattern and features of this landscape, in particular its ancient woodlands, veteran trees, landscaped parklands and areas of archaeological interest, including ridge and furrow.

- **SEO 4:** Protect the overall strong rural, open and tranquil character of this well-ordered lowland agricultural landscape; increase the opportunity to encourage sustainable food production; and enhance access to and enjoyment of the wider countryside for both residents and visitors.

Algal growth from sewage enrichment. River Mease SAC.

Description

Physical and functional links to other National Character Areas

The south-western half of the Mease/Sence Lowlands National Character Area (NCA) lies within the west Midlands; the remainder falls within the east Midlands. The northern tip of the NCA lies within The National Forest, the boundary of which also extends into the adjacent NCAs of the Trent Valley Washlands and the Leicestershire and South Derbyshire Coalfield.

Geologically, outcrops of Triassic Sandstone extend across the area southwards and westwards from the edge of the Leicestershire and South Derbyshire Coalfield NCA. The River Mease and its tributaries flow from the adjoining Leicestershire and South Derbyshire Coalfield NCA through this NCA to join the River Anker, River Tame and River Trent immediately to the west in the adjacent Trent Valley Washlands and Arden NCAs. The area's swift-flowing streams drain from high ground in Charnwood into the western reach of the River Sence. The Sence flows eastwards into the adjoining Leicestershire Vales NCA and drains westwards into the neighbouring Trent Basin, then into the Humber Estuary and into the North Sea.

Due to the undulating landform, distant views into adjacent NCAs are limited. Where the flatter areas of the lowlands open out to the west there are views into the adjoining Trent Valley Washlands.

The M42, M69 and A5 are key strategic routes that link the area east–west to adjacent NCAs. The A444 passes through the NCA from north to south. The Coventry Canal and Ashby Canal also create links to the east and west.

The disused canal once served the coalfield but more recently has experienced some restoration.

Key characteristics

- This is a gently rolling landscape with rounded clay ridges and shallow valleys, with a more undulating landform in the north-west. This is a well-ordered agricultural landscape of open views, with a relatively tranquil character.
- Triassic Mercia Mudstones underlie this area and give rise to productive clay soils; outcrops of sandstone extend across the area southwards and westwards from the edge of the adjacent coalfield.
- Woodland cover is generally limited to scattered hedgerow trees, coverts and spinneys, and occasional groups of trees along rivers and streams. Larger-scale planting associated with The National Forest in the north of the NCA has significantly increased woodland cover and strengthened the wooded character of the landscape.
- The majority of the farmland has a strongly rectilinear pattern of low hedgerows and scattered hedgerow trees. On steeper ground and heavier clays, hedgerows are more substantial and hedgerow trees more frequent.
- Extensive, open areas of arable cultivation predominate. On steeper ground and heavier clays the land is less intensively farmed, and arable and pasture are mixed. Beef and dairy farming are also common.
- The main river courses of the Mease and Sence are generally very open; they are nationally important for nature conservation and support internationally rare species, including the white-clawed crayfish, spined loach and bullhead fish. Willow and alder riparian vegetation is a feature along minor streams.
- Important habitats include neutral grasslands, wet meadows, parkland, wet woodlands, rivers and streams, all of which support characteristic and rare species.
- The Ashby Canal and Coventry Canal are landscape features that are important for nature conservation and recreation. They act as reminders of our cultural heritage.
- Landscaped parklands and fine country house estates, spired churches and historic farmsteads, areas of remnant ridge and furrow and deserted settlements contribute to the time depth and sense of history of the area.
- with wide verges and straight enclosure roads. Red brick buildings and spired churches are often prominent landscape features. Isolated large 19th-century red brick farmsteads are also notable.
- Larger modern urban development is present on the fringes of the NCA in Nuneaton, Hinckley and Burton-upon-Trent. Straight motorways and main roads cut through the area north–south and east–west.

The River Sence, south of Sheepy Magna.

The white-clawed crayfish a rare, internationaly important species.

Mease/Sence Lowlands today

The Mease/Sence Lowlands NCA has an overall strong rolling rural character, although the clay ridges and shallow valleys become virtually flat around the rivers Mease and Sence. The land to the north-west, which drains directly into the River Trent, generally has a more undulating landform.

The area is largely underlain by the Triassic Mercia Mudstone and Bromsgrove Sandstone formations, which, where they out-crop, give rise to productive reddish, loamy soils. Glacial till, some glacial outwash deposits and lacustrine clays deposited in lakes during the Pleistocene give rise to poorly drained clayey soils. Terrace gravels are associated with the river valleys, while their flood plains are underlain by alluvium.

Most of the land is in agricultural use and is predominantly arable. Dairy and beef farming are common on areas of permanent pastures found where clayey soils or steeper land impede arable farming. The extensive areas of open arable cultivation are divided by low hedges, with scattered hedgerow trees. Field sizes vary; the regular forms testifying to late 18th- and 19th-century enclosure and reorganisation and more irregular patterns and boundaries with more substantial hedgerow trees, to the piecemeal enclosure of open fields and pockets of more ancient medieval enclosure. Occasional field ponds are distinctive features.

Woodland is sparse and tree cover is generally confined to copses and spinneys on the clay ridges and occasional groups of trees on stream sides. The woodlands are mainly deciduous, and hedgerow trees are often mature ash and oak. Willow and alder are frequently found along the streams and next to field ponds, but main river courses are very open.

The villages are often located on the crests of low ridges and their church spires form prominent features.

Some 12 per cent of The National Forest falls within the NCA, where blocks of predominantly broadleaved woodland are strengthening the wooded character of this mainly agricultural landscape; established plantations include Rosliston Forestry Centre and Grangewood. The National Forest was established, with great public support, in 1995 to regenerate the area after mining and to show the benefits of woodlands near to where people live and work. The overall aim is to blend new and maturing woodland within a wide variety of landscapes. Much of the tree cover comes from the large parklands at Gopsall Park, Market Bosworth, Thorpe Constantine and Shenton.

The rivers Sence, Anker and Mease drain the South Derbyshire coalfield westwards into the rivers Tame and Soar. Smaller streams drain towards the north-west directly into the Trent and have carved out more undulating landforms. The rivers Mease (Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI)), Sence and Anker are important nature conservation and landscape features.

The rivers and streams provide valuable semi-natural habitats, as do the standing waters of the Coventry Canal and Ashby Canal SSSI. Nationally important species include water vole and otter. Birds associated with wetland habitats include snipe, while farmland birds in the NCA include lapwing, grey partridge and tree sparrow.

This NCA has some valuable local recreational resources such as the Ashby and Coventry canals, which are popular with walkers and anglers, and The National Forest, which is a wider regional recreation resource. The area has relatively few honeypot sites, although Twycross Zoo attracts around 500,000 visitors a year.

The settlement pattern is dominated by villages with low densities of dispersed settlement and large towns towards the peripheries. The market town of Atherstone and the larger urban areas of Hinckley, Nuneaton, Tamworth and Burton- upon-Trent lie on the fringes of the NCA. The villages are often located on the crests of low ridges, and their church spires form prominent features. This is especially characteristic around Snarestone, from where it is possible to see seven church spires. The villages are well connected by small rural roads, often with wide grass verges. A number of straight Roman roads are features, such as the A5. Red brick cottages and houses with slate or pantile roofs are characteristic, with occasional earlier timber-framed houses and farmsteads. Only towards the edge of the area, such as near Burton-upon-Trent, have the villages acquired a significant amount of post-war development.

The area retains a largely remote, rural and tranquil character, interrupted only in places by overhead lines and by road corridors such as the M42, A444, A5 and M69, which pass through the area.

The landscape through time

The Triassic sandstones (Bromsgrove Sandstone Formation) and mudstones (Mercia Mudstone Group) that underlie the NCA were formed between 237 and 203 million years ago under arid conditions in a location about 30 degrees north of the equator. The Bromsgrove Sandstone represents a fluvial plain containing northerly flowing rivers. Faulting and subsidence led to the formation of deep basins in the west and east of the NCA, into which the mudstones of the Mercia Mudstone Group were deposited. These were formed in playas and sabkhas.

During the late Pleistocene (between approximately 300,000 and 200,000 years ago), superficial deposits in the form of glacial tills, lake sediments and sands and gravels rested on the Bromsgrove Sandstone and Mercia Mudstone. These reflect the presence then of ice sheets, braided streams and rivers containing meltwater, as well as glacially damned lakes. Gravels that formed on terraces attest to the development of the modern river systems after the ice sheets had retreated from the area.

There is scattered evidence of Neolithic and bronze-age occupation from finds and sites which appears to relate to activity spreading out from the Trent and Tame valleys. Occupation and clearance of the area took place throughout the Iron Age and the Roman period.

By the time of Domesday Book, the landscape was one of fairly evenly dispersed nucleated villages, usually on the slightly higher ground overlooking their open fields, with only a few larger centres. A low level of dispersed settlement also took place during this period and this pattern still dominates. During an earlier period the settlement pattern had probably been predominantly dispersed across the landscape. The placename evidence reflected by the many '–ton' names, with few woodland names and only the occasional heath names, indicates that there was a substantial, but scattered, settlement pattern from early in the Anglo-Saxon period. Placenames ending in '–by', for example Ingleby and Appleby, indicate later Scandinavian influence in the area.

The area had been substantially cleared of woodland by the 11th century, a process probably in train from the later prehistoric period. The majority of the historical woodland is broadleaf plantation, created in blocks in the enclosure landscape of the early 19th century, often serving to shelter the farmsteads of the period, or to provide coverts and shooting cover for the estates.

A history of mixed farming, biased towards livestock, led to some early enclosure. Enclosure of the pastoral landscape began in the late medieval period.

In the 16th century, the Dissolution of the Monasteries and the developing land market led to the formation of large estates and, ultimately, to the landscape parks and country houses and estates, which form an important landscape component. At Gopsall, incomers were able to buy land to create new estates, parks and mansions.

The township fields of the medieval villages, many of which remained in existence well into the 18th century, have left their mark in a few places, preserved in the curving boundaries of piecemeal enclosure or as ridge and furrow under permanent pasture. Early piecemeal enclosure, of small-scale, irregular and well-hedged pastures, survives best around the isolated villages and along the narrow river margins. There are occasional moated sites and earthwork castles (for example Seckington), as well as some deserted villages, which are also visible as earthwork remains.

Areas of remnant ridge and furrow and deserted settlements contribute to the time depth and sense of history of the area.

The greater part of the area is now dominated by the patterns of general enclosure brought about in the late 18th and early 19th centuries, including

medium- and large-scale rectilinear field patterns, straight enclosure roads, well-spaced farmsteads and regular blocks of planted woodland. There is a low survival of early farmstead buildings; most of the existing historical farmsteads are those that were rebuilt in the early to mid-19th century.

There has been a dramatic loss of historic parkland from the many small country houses and manors in the area since the end of the 1920s. Although loss of parkland has slowed in recent years, many areas taken into arable, particularly in the village estate farmlands, are still gradually losing their parkland trees, often through cultivation damage, and what remains of their parkland character.

Early industrial development largely by-passed the area apart from the conspicuous Ashby and Coventry canals. The Ashby-de-la-Zouch Canal was completed in 1804, but it never reached Ashby. It ran for 48 km (30 miles) from the Coventry Canal at Marston Junction near Bedworth to Moira. The canal was originally planned as a link between the Oxford Canal near Coventry and the River Trent, but its northerly section was never built. The canal served the coalfield, carrying coal from local collieries to Coventry, and south – via the Oxford Canal – to Oxford and London. It later became disused but more recently has experienced some restoration.

Villages in more remote locations remain small, dominated by the village church and the later estate centres; others in more accessible locations expanded rapidly in the 19th and 20th centuries and now include quite large commuter populations.

Agricultural change has included the decline in hedgerows, with removal and frequent trimming of hedges in the more commercially farmed areas and the consequential loss of hedgerow trees. Changes to agricultural land use include the consolidation of farm holdings and the conversion of permanent pasture to arable.

Within The National Forest, opportunities for increasing tree cover have had a steady impact since the late 1990s. The impact of The National Forest can now be seen, with woodland becoming established and maturing, strengthening wooded character.

Significant post-war housing development has occurred towards the edge of the area, such as near Burton-upon-Trent, Tamworth and Nuneaton and also in Hinckley. Highways development also impacts on the area as a result of the M42, A444 and M69 corridors.

Ecosystem services

The Mease/Sence Lowlands 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 Mease/Sence Lowlands NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision:** This is a rich and productive agricultural area. Most of the land is in commercial agricultural use, primarily for wheat, with more limited beef and dairy production. Over a third of the farms are dedicated to cereal. Survey data from 2000 to 2009 shows a 17 per cent rise in the number of cereal farms, while general cropping and dairy farms have decreased by 56 per cent and 27 per cent respectively.

- **Biomass energy:** Energy crop planting in the appropriate location and of appropriate scale could enhance local landscape character. The existing woodland cover (5 per cent of the NCA) offers limited potential for the

provision of biomass. Woodland planting, as part of The National Forest, is increasing woodland cover and biomass potential for the future. The NCA has medium yield potential for short rotation coppice (SRC) but there is an area of low-potential SRC yield around Nuneaton. The potential miscanthus yield in the NCA is medium, although there are some areas of high yield around Nuneaton and Burton-upon-Trent.[4]

- **Water availability:** There are three main rivers in the NCA: the Mease; the Sence; and the Anker. The NCA features two canal systems: the Ashby Canal and the Coventry Canal. There are no major aquifers in the NCA. The River Mease is a small lowland river that is designated as an SAC. The River Mease has a 'water available' Catchment Abstraction Management Strategy (CAMS) status.[5] The River Anker is joined by the River Sence at Atherstone and flows in a north-westerly direction through the NCA. The River Anker and the River Sence currently have a 'water available' CAMS status.[6]

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

- **Climate regulation:** The soils over most of the NCA have a low carbon content (0–5 per cent), although there are small pockets of soil with a higher carbon content (5–10 per cent) that are likely to be associated with areas of flood plain grazing marsh and areas of woodland cover. Woodland planting in the NCA, as part of The National Forest, will be important for increasing carbon sequestration and storage in the future.

Most of the land in the Mease /Sence Lowlands is in agricultural use and is predominantly arable.

- **Regulating water quality:** The River Mease is a priority target area under the Catchment Sensitive Farming Project. The ecological status of the rivers Mease and Sence is moderate. The River Anker has a moderate ecological potential status. The ecological status of the Coventry Canal is good. The only river subject to surface water chemical testing is the River Anker, which currently has a good surface water chemical status. The groundwater chemical status in the majority of the NCA is poor. Water quality is particularly important for the River Mease SSSI and SAC to support its internationally important populations of white-clawed crayfish, spined loach and bullhead fish.

[4] For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website (URL: www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx)

[5] *Tame, Anker and Mease Catchment Abstraction Management Strategy*, Environment Agency (March 2008). [6] Ibid.

- **Regulating water flow:** This NCA sits within the River Trent catchment (the Catchment Flood Management Plan for this catchment was published in 2010[7]). The Environment Agency flood map indicates that for much of the NCA, flooding is not generally a major issue; however, it does show areas of high localised flood risk associated with the rivers Mease, Sence and Anker. Notably, the River Anker has historically caused flooding in and around Nuneaton.

- **Regulating soil erosion:** The majority of the soils in the NCA (covering 65 per cent) are at risk of soil erosion. The dominant soil is the slightly acid loamy and clayey soil with impeded drainage (covering 59 per cent). This soil is easily compacted by machinery or livestock if accessed when wet, increasing the risks of soil erosion by surface water run-off, especially on steeper slopes. Erosion is exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** This NCA is a gently rolling, distinctly open and predominately arable lowland landscape, with the shallow river valleys of the Sence and Mease. It is strongly rural and sparsely populated, with a strong rectilinear field pattern. On the steeper ground and heavier clays the land is less intensively farmed, and arable and pasture are mixed. Here hedgerows are more substantial, hedgerow trees are more frequent and there is some permanent pasture, with copses and spinneys on ridgelines. This generally open landscape contrasts with the area of The National Forest within the NCA, where woodland creation is taking place. The National Forest mixes farm woodlands with woods planted for nature conservation. The numerous large estates, wooded parklands and country houses contribute strongly to the NCA's sense of place.

- **Sense of history**: History is evident in the settlement pattern of dispersed small, nucleated villages on low ridges constructed in characteristic red brick with slate or pantile roofs, linked by straight enclosure roads. There are occasional timber-framed buildings, isolated 19th-century red brick farmsteads, and villages with a considerable amount of post-war development. There is a strong pattern of rectilinear fields, with ridge-and-furrow earthworks evident, especially around isolated villages and along narrow river margins. Occasional deserted settlements and a pagan burial site at Ingleby are also important historical features. Other aspects of history are the parklands associated with Gopsall Park, Market Bosworth, Thorpe Constantine and Shenton, with their ancient parkland trees. Prominent landmarks are the spired churches and the manor and country houses, as well as the Ashby Canal, with its marina at Snarestone.

- **Tranquillity:** The NCA has experienced a decline in tranquillity, with undisturbed areas having decreased from 66 per cent in the 1960s to 42 per cent in 2007,[8] largely as a result of the increased traffic on the main roads in the NCA, not least the M42, M1 and A42. Features in the landscape that are particularly important in conveying a sense of tranquillity are the prominent streams and rivers and the associated pastoral character of stream sides on steeper slopes and around villages.

- **Recreation:** The NCA offers a network of rights of way totalling 418 km at a density of 1.3 km per km2, and includes National Cycle Network routes 52 and 63 and links to circular walks associated with the Leicestershire Round and the Ivanhoe Way long-distance footpaths, as well as open access land covering 46 ha or nearly 0.2 per cent of the NCA. Some 12 per cent of The National Forest falls within the NCA, which includes recreational and educational facilities such as the 'Spires and Stiles' walk. There is public

[7] Information from URL: www.environment-agency.gov.uk/research/planning/114350.aspx

[8] Intrusion Map, Campaign to Protect Rural England (2007)

access along the Ashby Canal towpath and at its marina at Snarestone. There are a number of country parks, and popular visitor destinations such as Twycross Zoo.

- **Biodiversity:** The 604 ha (2 per cent of the NCA) of priority habitats include 346 ha of flood plain grazing marsh in the western part of the NCA, 92 ha of fens and 85 ha of wet woodlands. The NCA contains one SAC (the River Mease) and has 139 ha of nationally designated SSSI, including the Ashby Canal SSSI. Important habitats include neutral grasslands, wet meadows, parkland, wet woodlands, rivers and streams, all of which support characteristic and rare species, including the internationally important white-clawed crayfish.

Villages in more remote locations, such as Ratcliffe Culey dominated by the church, remain small.

Statements of Environmental Opportunity

SEO 1: Protect and appropriately manage this important network of natural and manmade rivers, streams, ponds, canals and other wetland habitats for its internationally important populations of white-clawed crayfish, spined loach and bullhead fish and their contribution to sense of place, water quality and climate regulation.

For example, by:

- Appropriately managing the River Mease Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC) to support and protect its internationally important populations of white-clawed crayfish, spined loach and bullhead fish. Extend agreements with farmers to minimise effects of diffuse pollution from commercial agriculture by promoting the use of buffer strips and soil management, particularly along the River Mease, to help improve water quality.
- Promoting the Catchment Sensitive Farming Project to farmers and landowners.
- Managing the Ashby Canal SSSI and other standing water in favourable condition. Seeking opportunities to extend and enhance areas of wetland habitat such as wet meadows and wet woodland, particularly in flood plains and along rivers and streams, and managing in favourable condition for declining species such as water vole and otter.
- Reconnecting rivers and streams to their flood plains, and restoring and enhancing flood plain habitats such as wet grassland.
- Appropriately managing the rivers Mease, Sence and Anker to protect the main water sources within the area, and maintaining and protecting the Ashby and Coventry canals as supplementary water sources.
- Promoting watercourse corridors as a strategic resource for recreation by extending informal, small-scale public access where appropriate, for example along the Ashby Canal.
- Promoting watercourses as a strategic resource for raising awareness and understanding of geomorphology.
- Promoting the traditional practice of pollarding riparian trees (mainly willows).
- Increasing riparian vegetation along watercourse banks such as the banks of the rivers Mease, Sence and Anker and along the Ashby and Coventry canals.
- Re-establishing and restoring characteristic field ponds to enhance sense of place and improve biodiversity.
- Promoting the developer contribution scheme, which will enable development to proceed in the catchment of the River Mease SAC while ensuring that such development does not contribute to deterioration in water quality. The scheme will pay for projects to offset the phosphate contribution made by the new development.
- Take into account the archaeological potential of the river valleys in all management activities and conserving and enhancing the historic structures and buildings associated with the Ashby and Coventry canals.

SEO 2: Manage and conserve the woodland habitat of the landscape and plan to expand appropriately scaled woodland cover, particularly in The National Forest, to increase people's access and enjoyment and to secure opportunities to enhance biomass and biodiversity and manage the impact of climate change.

For example, by:

- Maintaining existing tree and woodland character and managing in favourable condition the existing tree and woodland cover, especially ancient woodland and its veteran trees.
- Conserving and managing historic parklands, including the establishment of new generations of trees that are sensitive to their historic character, and also appropriately managing ancient and veteran trees and retaining deadwood fauna and flora.
- Within the National Forest area, planning to increase woodland cover in accordance with the National Forest landscape design guidance for woodland creation and the connectivity modelling. Elsewhere, exploring the opportunities for small- to medium-scale woodland creation along valley bottoms, natural regeneration and further broadleaved tree planting.
- Looking to plant energy crops close to existing areas of woodland to increase biomass production while maintaining the overall open character of the landscape and open views from woodland through to the wider countryside. Bringing unmanaged areas of woodland back into management to increase biomass production from existing areas of woodland. Planting short rotation coppice in The National Forest where woodland planting is already occurring, yet maintaining appropriate open habitats to encourage birds and associated species. Exploring the potential for growing miscanthus around Nuneaton and Burton-upon- Trent where the potential yield is high.
- Working with landowners, including The National Forest Company, to offer opportunities to people to enjoy and experience the woodlands by providing increased public access to the sites, with improved interpretation for visitors.
- Working with The National Forest Company and other partners to increase woodland that will enhance tranquillity levels, screen new development to reduce intrusion, and improve soil quality and prevent soil erosion.

SEO 3: Protect and appropriately manage the historic character, settlement pattern and features of this landscape, in particular its ancient woodlands, veteran trees, landscaped parklands and areas of archaeological interest, including ridge and furrow.

For example, by:

- Conserving historic features by working with farmers and other landowners to minimise damaging cultivation practices, for example to prevent arable ploughing within areas of ridge and furrow such as at Market Bosworth Hall and Gopsall Park near Twycross.
- Using Countryside Stewardship to restore parklands by re-creating unimproved pasture from more recent arable cultivation, planting replacement trees of appropriate species and conserving veteran parkland trees by protecting from damage. Maintain parkland by planting replacement trees.
- Promoting access to and increasing interpretation about the large estates, wooded parklands and country houses, which contribute strongly to sense of place.
- Extending and linking important semi-natural habitat, in particular hedgerows, woodland and wood pasture, parkland and wet woodland, and wet grassland, bring it into favourable condition through positive management.
- Ensuring that views of the many tall, characteristic church spires are retained as focal points in the landscape.
- Protecting the character of villages and considering the visual impact of any new development. Following existing design guidance such as Village Design Statements or putting such guidance in place to ensure the appropriate use of vernacular styles and building materials that minimise impact on the local landscape. Recognising that village and town design statements as well as conservation area appraisals can also be important local planning tools.
- Managing and restoring the historic network of field boundaries including hedgerows, hedgerow trees, drystone walls and drainage ditches in keeping with local styles and management traditions, to make biodiversity stepping stones and corridors, enhance historic landscape value and facilitate their key function to reduce surface water flows and soil erosion.

SEO 4: Protect the overall strong rural, open and tranquil character of this well-ordered lowland agricultural landscape; increase the opportunity to encourage sustainable food production; and enhance access to and enjoyment of the wider countryside for both residents and visitors.

For example, by:

- Conserving the enclosed small-scale field pattern by protecting and enhancing the hedgerow network and hedgerow trees.
- Managing arable cropping patterns to encourage rarer arable plants and farmland birds and mammals and creating grass margins around arable fields.
- Improving soil management to support sustainable agriculture.
- Increasing grazing and sward diversity to increase the laying down of organic matter and managing sites with a view to allowing wild flowers to flower and seed.
- Conserving 'remote' areas from development by working with others to ensure traditional settlement patterns and maintaining relative high levels of tranquillity beyond the M42/A42 and A444 corridors.
- Managing the expansion of the transport network, ensuring that improvements are carefully planned to provide positive environmental and landscape enhancements.
- Ensuring that improvements to rural roads reflect local character, retain hedgerow enclosure and wide grass verges to improve habitat networks and avoid bringing a degree of standardisation and signage clutter to the countryside.
- Putting in place early design and planting measures to create natural buffer zones around new and existing development which helps to integrate and soften the impact of built development, strengthen sense of place and respect intrinsic landscape character.
- From the outset of planning and design of new development, ensuring that adequate provision of urban green space and a network of multi-functional green infrastructure are incorporated into, through and around new development proposals.
- Creating natural links to the wider countryside to encourage the spread of species, thus enhancing adaptation to climate change, while offering improved access routes to residents and visitors. Following the transportation and water corridors in particular and offering better connectivity to the public rights of way network including National Cycle Network routes 52 and 63 will enable links to circular walks associated with the Leicestershire Round and the Ivanhoe Way and The National Forest long-distance footpath.
- Promoting and adding to recreational opportunities within The National Forest.
- Raising the profile of the Coventry Canal and the Ashby Canal towpaths and the marina at Snarestone as venues for green tourism.

Supporting document 1: Key facts and data

Total area: 32,353 ha

1. Landscape and nature conservation designations

There are no landscape designations within this NCA.

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	Percentage of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	River Mease SAC	16	<1
National	National Nature Reserve (NNR)	n/a	0	0
National	Site of Special Scientific Interest (SSSI)	A total of 6 sites wholly or partly within the NCA	139	<1

Source: Natural England (2011)

Please note: (i) Designated areas may overlap (ii) all figures are cut to Mean High Water Line, designations that span coastal areas/views below this line will not be included.

Both the SAC and the NNR are within the SSSI area. The NNR lies within the SAC.

There are 72 Local sites in Mease & Sence Lowlands covering 72 ha which is 2 per cent of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
- Details of Local Nature Reserves (LNR) can be searched: http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp
- Maps showing locations of Statutory sites can be found at: http://magic.defra.gov.uk – select 'Designations/Land-Based Designations/ Statutory'

1.2 Condition of designated sites

A breakdown of SSSI condition as of March 2011 is as follows:

SSSI condition category	Area (ha)	Percentage of SSSI in category condition
Unfavourable declining	0	0
Favourable	27	21
Unfavourable no change	21	16
Unfavourable recovering	80	63

Source: Natural England (March 2011)

Details of SSSI condition can be searched at:
http://www.sssi.naturalengland.org.uk/Special/sssi/reportIndex.cfm

2. Landform, geology and soils

2.1 Elevation

Elevation ranges from 44 m above sea level to a maximum of 149 m. The average elevation of the landscape is 84 m above sea level.

Source: Natural England (2010)

2.2 Landform and process

The low land is found along the river corridors with the bands of sandstone underlying the highest central areas.

Source: Mease/Sence Lowlands Countryside Character Area Description

2.3 Bedrock geology

Triassic Mercia Mudstones, which give rise to productive clay soils. Outcrops of sandstone.

Source: Mease/Sence Lowlands Countryside Character Area Description

2.4 Superficial deposits

Extensive sand and gravel terrace deposits and clay, silt and sand deposits. The geology is complex with mudstone and clay partially overlaid by glacial till in the east. Alluvial (river) deposits provide rich fertile soils. Extraction of sand and gravel has been extensive.

Source: Mease/Sence Lowlands Countryside Character Area Description

2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	0
National	Mixed Interest SSSI	0
Local	Local Geological Sites	7

Source: Natural England (2011)

2.6 Soils and Agricultural Land Classification

Triassic Mercia Mudstones underlie this area and give rise to productive clay soils. Outcrops of sandstone extend across the area southwards and westwards, giving well drained fertile sandy soils. The area has fertile soils along the river corridors owing to the conditions produced by the alluvial and glacial drift deposits. Arable farming predominates across the area as a result of the fertile soils- mainly Grade 2 and Grade 3 agricultural land. On steeper ground and where clays are heavier pasture farming is common. Heavy clay soils supporting oak/ash woodland.

Source: Mease/Sence Lowlands Countryside Character Area Description; Natural England (2010)

The main grades of agricultural land in the NCA are broken down as follows (as a proportion of total land area):

Agricultural Land Classification	Area (ha)	Percentage of NCA
Grade 1	0	0
Grade 2	9,794	30
Grade 3	19,741	61
Grade 4	1,287	4
Grade 5	0	0
Non-agricultural	281	1
Urban	1,250	4

Source: Natural England (2010)

Maps showing locations of sites can be found at: http://magic.defra.gov.uk – select 'Landscape' (shows ALC and 27 types of soils).

3. Key waterbodies and catchments

3.1 Major rivers/canals

The following major rivers/canals (by length) have been identified in this NCA.

Name	Length in NCA (km)
River Anker	33
River Mease	17
River Sence	12
Ashby-de-la-Zouch Canal	18
Coventry Canal	17

Source: Natural England (2010)

Please note: other significant rivers (by volume) may also occur. These are not listed where the length within the NCA is short.

The rivers and their tributaries are a significant feature in the area with broad floodplains existing in places to the west. The River Mease and its tributaries flow from the adjacent coalfields flowing to the River Anker, River Tame and River Trent immediately to the west. The River Sence flows eastwards into the River Soar.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 32,353 ha, 100 per cent of NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

Maps are available from the Environment Agency showing current and projected future status of water bodies http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e

4. Trees and woodlands

4.1 Total woodland cover

This NCA contains 1,591 ha of woodland (where woodlands are over 2 ha in size) covering 5 per cent of the NCA, including 123 ha of ancient woodland.

Source: Natural England (2010)

4.2 Distribution and size of woodland and trees in the landscape

Woodlands are small and intermittent and are commonly spinneys, copses and game coverts. Woodlands are small and intermittent and are commonly spinneys, copses and game coverts. Oak/ash woodland on is found on heavier clay soils and is generally in blocks of less than 50 ha. The National Forest covers a part of the NCA. Within the National Forest existing woodlands have been extended in places. Young woodland with mixed native woodland species and some conifers is becoming established on previously cultivated / grassland areas. Ancient woodlands, particularly the clay valleys, include oak, ash, field maple. These are generally less than 50 ha in size. A number of parkland areas contain significant proportions of woodland and contain important veteran trees including ancient oaks. Willows and alders are found along water courses of minor streams.

Source: Mease/Sence Lowlands Countryside Character Area Description; Countryside Quality Counts (2003)

4.3 Woodland types

A statistical breakdown of the area and type of woodland found across the NCA is detailed below.

Area and proportion of different woodland types in the NCA (over 2 ha):

Woodland type	Area (ha)	Percentage of NCA
Broadleaved	1,269	4
Coniferous	83	<1
Mixed	39	<1
Other	200	<1

Source: Forestry Commission (2011)

Area and proportion of ancient woodland and planted ancient woodland sites (PAWS) within the NCA.

Woodland type	Area (ha)	Percentage of NCA
Ancient semi-natural woodland	99	<1
Ancient re-planted woodland (PAWS)	25	<1

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Low, predominantly hawthorn hedgerows, often with hedgerow trees are the main boundary types.

Source: Mease/Sence Lowlands Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

The field pattern is rectilinear across the area, reflecting a process of enclosure by agreement. Field size tends to decrease towards the west with some very small square and rectilinear fields, intermixed with medium-sized fields with curving boundaries.

Source: Mease/Sence Lowlands Countryside Character Area description; Countryside Quality Counts (2003)

6. Agriculture

The following data has been taken from the Agricultural Census linked to this NCA.

6.1 Farm type

The landscape's mixed farming character is supported by figures on farm type: 101 cereal farms (34 per cent) and 35 dairy holdings (12 per cent).Farms classified as 'other' total 55, or 18 per cent of total agricultural holdings. Survey data from 2000 to 2009 show a 17 per cent rise in the number of cereal farms, while general cropping and dairy farms have decreased by 56 per cent and 27 per cent respectively.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Farms over 100 ha are the most common farm size, accounting for 90 units, covering more than 74 per cent of the total farmed area. Holdings between 5 and 20 ha are the second most common farm size with 64 units, but cover less than 3 per cent of the farmed area. Trends show no change in the number of smallholdings of less than 5 ha or in farms above 100 ha between 2000 and 2009. However, 36 mid-range holdings have ceased to trade between 2000 and 2009.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

2009: Total farm area = 25,059 ha; owned land = 58 per cent
2000: Total farm area = 26,480 ha; owned land = 59 per cent

95 per cent of farms are owner-occupied, covering 69 per cent of the total area of farmland. Trends over the last ten years show a general increase in the number of owner-occupied farms, matched by a similar decrease in the number of tenanted farms between 2004 and 2007.

Source: Agricultural Census, Defra (2010)

6.4 Land use

The most common land use is cereal crops, totalling 9,901 ha or 40 per cent of the farmed area. Grassland covers 8,871 ha (35 per cent) – the second most prevalent land use. Other arable crops (particularly forage) and horticulture (particularly top fruit), make up the agricultural mosaic. Between 2000 and 2009 there was an 18 per cent (2,124 ha) decrease in the area farmed for cereal crops. Other trends include an 87per cent increase in the area of oilseed crops (up by 1,539 ha).

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Cattle are the most numerous livestock within this landscape (a total of 18,900 animals) compared to a total of 16,100 sheep and 3,000 pigs. There was an overall decline in the number of sheep (7,800 or 33 per cent), cattle (2,400 or 11 per cent) and pigs (952 or 24 per cent) between 2000 and 2009.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

The figures suggest that the largest number of holdings are managed by owner farmers (465), followed by those with a full-time manager/ farmer (25).Trends over the last decade show an decrease in part-time farmers/managers and farm workers, and a decrease in full-time categories. Numbers of casual labour also decreased during the 2000-2009 period.

Source: Agricultural Census, Defra (2010)

Please note: (i) Some of the Census data are estimated by Defra so may not present a precise assessment of agriculture within this area (ii) Data refers to commercial holdings only (iii) Data includes land outside of the NCA where it belongs to holdings whose centre point is recorded as being within the NCA.

7. Key habitats and species

7.1 Habitat distribution/coverage

Some pockets of ancient semi-natural woodland, including oak-ash Parkland with veteran trees. There are remnant areas of species-rich grassland supporting numerous scarce and rare plant and invertebrate species. Valued wetland habitat communities are found in the Anker/Trent floodplain grazing marsh with rare and scarce plant species such as at Alvecote Pools SSSI. The River Mease is a SSSI and SAC and is rich in plant and animal life. Ashby Canal is designated SSSI.

Source: Trent Valley and Rises Natural Area Profile

7.2 Priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at; www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/englandsbiodiversitystrategy2011.aspx.

The NCA contains the following areas of mapped priority habitats (as mapped by National Inventories). Footnotes denote local/expert interpretation. This will be used to inform future national inventory updates.

Priority habitat	Area (ha)	Percentage of NCA
Broadleaved mixed & yew woodland (broad habitat)	477	1.5
Coastal and floodplain grazing marsh	333	1
Fens	81	<1
Lowland Meadows	25	<1
Reedbeds	8	<1

Source: Natural England (2011)

Maps showing locations of priority habitats are available at:

- http://magic.defra.gov.uk – Select 'Habitats and Species/Habitats'

7.3 Key species and assemblages of species

- Maps showing locations of some key species are available at: http://magic.defra.gov.uk – Select 'Habitats and Species/Habitats'
- Maps showing locations of S41 species are available at http://data.nbn.org.uk/

8. Settlement and development patterns

8.1 Settlement pattern

Most settlement in the area is in the form of small, nucleated villages and scattered farmhouses with the larger settlements of Atherstone, Netherseal, Higham-on-the-Hill dotted through the area. There is increased urban development in the western part of the area towards Nuneaton and also north at Burton-upon-Trent and south at Hinckley.

Source: Mease/Sence Lowlands Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main settlements

Atherstone is the only town wholly within the NCA (population 8,293). Nuneaton falls partly within the south of the NCA. Burton-upon-Trent falls partly within the north of the NCA. The total estimated population for this NCA (derived from ONS 2001 census data) is: 70,213.

Source: Mease/Sence Lowlands Countryside Character Area description; Countryside Quality Counts (2003)

8.3 Local vernacular and building materials

Red brick is the traditional building form. Occasional estate homes are built with imported stone.

Source: Mease/Sence Lowlands Countryside Character Area description; Countryside Quality Counts (2003)

9. Key historic sites and features

9.1 Origin of historic features

Evidence of Roman settlement is present in the area, including at Atherstone (Manduessedum). Ancient paths, drove roads and trackways, including the Watling Street, Fenn Lane are also notable features.

Source: Countryside Quality Counts Draft Historic Profile, Countryside Character Area description

9.2 Designated historic assets

This NCA has the following historic designations:

- 1 Registered Parks and Gardens covering 119 ha.
- 0 Registered Battlefield/s.
- 20 Scheduled Monuments.
- 419 Listed Buildings.

Source: Natural England (2010)

More information is available at the following address:
http://www.english-heritage.org.uk/caring/heritage-at-risk/

http://www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/

10. Recreation and access

10.1 Public access

- 2 per cent of the NCA, 700 ha, is classified as being publically accessible.
- There are 411km of public rights of way at a density of 1.3 km per km2.
- There are 0 National Trails within the NCA.

Sources: Natural England (2010)

The table below shows the breakdown of land which is publically accessible in perpetuity:

Access designation	Area (ha)	Percentage of NCA
National Trust (Accessible all year)	0	0
Common Land	42	<1
Country Parks	47	<1
CROW Access Land (Section 4 and 16)	102	<1
CROW Section 15	17	<1
Village Greens	2	<1
Doorstep Greens	1	<1
Forestry Commission Walkers Welcome Grants	7	<1
Local Nature Reserves (LNR)	6	<1
Millennium Greens	3	<1
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	5	<1
Woods for People	596	2

Sources: Natural England (2011)

Please note: Common Land refers to land included in the 1965 commons register; CROW = Countryside and Rights of Way Act 2000; OC and RCL = Open Country and Registered Common Land.

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) it appears that the lowest scores for tranquillity are associated with the fringes of Nuneaton/Tamworth in the west, Hinckley in the South and the bordering settlements of Burton on Trent to the north. The highest scores for tranquillity are found on the more remote higher ground of these Lowlands.

A breakdown of tranquillity values for this NCA are detailed in the table below:

Tranquillity	Score
Highest Value within NCA	29
Lowest Value within NCA	-72
Mean Value within NCA	-9

Sources: CPRE (2006)

- More information is available at the following address:
  http://www.cpre.org.uk/resources/countryside/tranquil-places

More information is available at the following address:
http://www.cpre.org.uk/what-we-do/countryside/tranquil-places/in-depth/item/1688-how-we-mapped-tranquillity

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that most of the NCA suffers considerable intrusion. A breakdown of intrusion values for this NCA is detailed in the table below.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	31	46	54	23
Undisturbed	66	51	42	-25
Urban	3	3	5	2

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are the significant 73.2 per cent increase in disturbed or intruded land. The majority of the NCA is classified as 'disturbed'. A minority of the NCA is 'urban' land, with a large proportion 'undisturbed' land associated with rural and more wooded areas.

More information is available at the following address:
http://www.cpre.org.uk/resources/countryside/tranquil-places

12. Data sources

- British Geological Survey (2006)
- Natural Area Profiles, Natural England (published by English Nature 1993-1998)
- Countryside Character Descriptions, Natural England (regional volumes published by Countryside Commission/Countryside Agency 1998/1999)
- Joint Character Area GIS boundaries, Natural England (data created 2001)
- National Parks and AONBs GIS boundaries, Natural England (2006)
- Heritage Coast Boundaries, Natural England (2006)
- Agricultural Census June Survey, Defra (2000,2009)
- National Inventory of Woodland & Trees, Forestry Commission (2003)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)*
- Ancient Woodland Inventory, Natural England (2003)
- BAP Priority Habitats GIS data, Natural England (March 2011)
- Special Areas of Conservation data, Natural England (data accessed in March 2011)
- Special Protection Areas data, Natural England (data accessed in March 2011)
- Ramsar sites data, Natural England (data accessed in March 2011)
- Sites of Special Scientific Interest, Natural England (data accessed in March 2011)
- Detailed River Network, Environment Agency (2008)
- Source protection zones, Environment Agency (2005)
- Registered Common Land GIS data, Natural England (2004)
- Open Country GIS data, Natural England (2004)
- Public Rights of Way Density, Defra (2011)
- National Trails, Natural England (2006)
- National Tranquillity Mapping data, CPRE (2007)
- Intrusion map data, CPRE (2007)
- Registered Battlefields, English Heritage (2005)
- Record of Scheduled Monuments, English Heritage (2006)
- Registered Parks and Gardens, English Heritage (2006)
- World Heritage Sites, English Heritage (2006)
- Incorporates Historic Landscape Characterisation and work for preliminary Historic Farmstead Character Statements (English Heritage/Countryside Agency 2006)Detailed River Network, Environment Agency (2008)

Please note all figures contained within the report have been rounded to the nearest unit. For this reason proportion figures will not (in all) cases add up to 100%. The convention <1 has been used to denote values less than a whole unit.

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- Woodland planting is taking place arising from The National Forest initiative which has the potential to have a significant influence on local landscape character. Some planting in The National Forest has occurred adjacent to existing mature woodland which is helping to increase wooded character and habitat value.
- Young woodland with mixed native woodland species and some conifers is becoming established on previously cultivated / grassland areas.
- Ancient woodlands, particularly in the clay valleys, include oak, ash, and field maple are generally less than 50 ha in size.
- A number of parkland areas contain significant proportions of woodland but these areas are gradually being lost.

Boundary features

- While the landscape has a generally intact and well maintained appearance some areas have previously suffered from a loss of hedgerows and hedgerow trees resulting in larger fields and a sense of exposure.

Agriculture

- The area supports a range of agricultural enterprises but arable farming is dominant. Changes in agricultural practices are impacting on the landscape character with semi-natural areas reducing in area and becoming more fragmented.
- There has been an on-going reduction in permanent pasture resulting from the increase in arable land use.
- There was an overall decline in the number of sheep, cattle and pigs between 2000 and 2009.
- Trends show no change in the number of smallholdings of less than 5 ha or in farms above 100 ha between 2000 and 2009. However, 36 mid-range holdings have ceased to trade between 2000 and 2009.

Settlement and development

- While the overall settlement pattern of dispersed rural settlements and nucleated villages has largely been maintained, villages are increasingly under pressure from development especially where they are closer to Burton-upon-Trent, Hinckley, Tamworth and Nuneaton, where development has increased as a result of being identified as an area for receiving major growth.
- Although parts of the area retain a quiet rural character, the use of the major routes crossing the area such as the M42 /A42 is significant and impacts upon tranquillity.
- In some locations energy crops in particular miscanthus and short rotation coppice are being cultivated to meet renewable energy targets. There is an associated requirement for storage and processing facilities which along with new agricultural buildings could reduce the sense of remoteness and cause visual intrusion.

The majority of the farmland has a strongly rectilinear pattern of low hedgerows and scattered hedgerow trees.

- Although the East Midlands Airport is not situated in the National Character Area (NCA) the area experiences associated aircraft activity which can affect the tranquillity of the quieter more remote areas.

Semi-natural habitat

- There are occasional patches of unimproved pasture in fields around villages and along stream sides, as well as on the many wide roadside verges throughout the area.
- The wildlife value of existing grassland ecosystems continues to be placed under threat from agricultural improvement including cultivation and habitat fragmentation.
- There has been significant uptake of Environmental Stewardship agreements for the creation and restoration of ponds since 1999 and there is a need to ensure these characteristic traditional field ponds continue to play a vital role in the overall ecology of the landscape.
- The area's many rivers, streams, ponds and canals are important for nature conservation. In particular the River Mease SAC and the Ashby Canal SSSI have international and national designations for nature conservation.

Historic features

- According to Countryside Quality Counts results 2007, the overall historic features of the area have been weakened particularly associated with the loss of designed landscape parkland in less remote areas particularly around urban fringes and principal transport routes.
- The loss of historic parkland from the many small country houses and manors, particularly in the village estate parklands, since 1918 has been dramatic (nearly 73 per cent).
- Although loss of parkland has slowed in recent years, many areas taken into arable, particularly in the village estate farmlands, are still gradually losing their parkland trees and what remains of their parkland character , for example where cultivation has damaged the parkland trees.

Rivers

- Rivers, streams and canals form important linear features and are intrinsic to local landscape character. The River Mease SSSI and SAC is of international importance. Previous land use change, commercial agricultural and high levels of phosphorous from sewage treatment works, surface water runoff from roads and agricultural land have had a negative impact on water quality and consequentially biodiversity.

- Himalayan balsam, a non-native invasive plant which colonises the river banks, out-competes native riverside plant species which can in turn make riparian margins much more susceptible to erosion increasing the amount of sediment entering the watercourses.

Drivers of change

Climate change

- Periods of heavy rain that may alter streamside habitats.
- Species migration and loss of small or isolated habitats.
- Increased demand for renewable energy installations and cropping.
- Summer droughts which may lead to over-abstraction from local rivers.
- Agricultural change with the potential for new crops.

Other key drivers

- As a result of development pressure to accommodate growth around the area there will be a need to protect village character and manage the expansion of larger settlements to ensure development is appropriate in terms of design and scale. Tree and small-scale woodland planting can help minimise adverse impacts and high quality, innovative architectural solutions that take inspiration from local distinctiveness and character can further help to reduce negative impacts associated with accommodating new development.

- Development and housing could also have an impact on the Mease SAC as demand for water increases. Diffuse sources of pollution (from urban and agriculture) will also have to be carefully managed to reduce impact on water quality.

- Highway improvements and increased usage of major transport routes and the potential expansion of East Midlands airport have the potential for visual disturbance and to reduce the tranquillity of the landscape. The aim should be to manage the expansion of the transport network to ensure improvements are carefully planned to provide positive environmental and landscape enhancements. In more rural areas road improvements should reflect local character and avoid bringing a degree of standardisation to the countryside.

- The National Forest is a significant driver for change in the northern part of the NCA. Increased woodland coverage is already being experienced although much is yet to mature. The opportunity exists to continue to enhance biodiversity value, woodland age structure and provide important strategic green infrastructure resource for the area and beyond.

- Managing the increased risk of non-native invasive plants such as Himalayan balsam.

- Due to the growing percentage of woodland cover in the area the risk increases for the spread of disease for example chalara dieback of ash trees.

Supporting document 3: Analysis supporting Statements of Environmental Opportunity

The following analysis section focuses on a selection of the key provisioning, regulating and cultural ecosystem goods and services for this NCA. These are underpinned by supporting services such as photosynthesis, nutrient cycling, soil formation and evapo-transpiration. Supporting services perform an essential role in ensuring the availability of all ecosystem services.

Biodiversity and geodiversity are crucial in supporting the full range of ecosystem services provided by this landscape. Wildlife and geologically-rich landscapes are also of cultural value and are included in this section of the analysis. This analysis shows the projected impact of Statements of Environmental Opportunity on the value of nominated ecosystem services within this landscape.

The River Mease Special Area for Conservation.

Statement of Environmental Opportunity	Ecosystem service																		
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / Inspiration	Sense of history	Tranquillity	Recreation	Biodiversity	Geodiversity
SEO 1: Protect and appropriately manage this important network of natural and manmade rivers, streams, ponds, canals and other wetland habitats for its internationally important populations of white-clawed crayfish, spined loach and bullhead fish and their contribution to sense of place, water quality and climate regulation.	↔ *	↗ **	↗ **	○ ***	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **		↗ **	↔ *	↗ **	↗ **	↑ **	
SEO 2: Manage and conserve the woodland habitat of the landscape and plan to expand appropriately scaled woodland cover, particularly in The National Forest, to increase people's access and enjoyment and to secure opportunities to enhance biomass and biodiversity and manage the impact of climate change.	○ *	↑ **	↗ *	○ ***	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ *	↗ *		↑ **	↔ *	↗ **	↑ ***	↑ ***	↔ ***
SEO 3: Protect and appropriately manage the historic character, settlement pattern and features of this landscape, in particular its ancient woodlands, veteran trees, landscaped parklands and areas of archaeological interest, including ridge and furrow.	↔ *	↗ **	↗ *	○ ***	↔ *	↗ *	↗ *	↗ *	↗ **	↗ **	↗ *	↗ *		↑ ***	↑ ***	↗ ***	↗ **	↑ **	↔ *
SEO 4: Protect the overall strong rural, open and tranquil character of this well-ordered lowland agricultural landscape; increase the opportunity to encourage sustainable food production; and enhance access to and enjoyment of the wider countryside for both residents and visitors.	↗ ***	↔ **	↗ **	○ *	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ **	↗ *			↑ ***	↗ ***	↑ ***	↑ ***	↗ *

Note: Arrows shown in the table above indicate anticipated impact on service delivery ↑=Increase ↗=Slight Increase ↔=No change ↘=Slight Decrease ↓=Decrease.
Asterisks denote confidence in projection (*low **medium***high) ○ =symbol denotes where insufficient information on the likely impact is available .

Dark plum =National Importance; Mid plum =Regional Importance; Light plum =Local Importance

Landscape attributes

Landscape attribute	Justification for selection
A gently rolling strongly rural agricultural and largely tranquil landscape of low hills with flat river valleys.	■ The rural area is divided occasionally by low hills and sandstone ridges. ■ From within the area there are views over the well-ordered landscape of open farmland and valleys. ■ Elevated areas are often capped by villages and church spires emphasising their visual prominence. ■ The slight rise in landform topped by small woodlands varies between feeling remote and being self-contained. ■ The undulating landform and the sediments it is formed of, provide evidence of the history of development of this landscape. ■ A well-ordered landscape of open views and quiet remote rural character with significant areas of tranquillity between small villages and farmsteads but it is experiencing increasing pressure to accommodate development associated with the expansion of Burton, Nuneaton, Hinckley and Tamworth, which with increased road usage along major routes cutting across the NCA, is disturbing tranquillity.
Woodland cover generally limited to landscaped parklands, coverts, spinneys and scattered hedge-row trees. In the north of the area, The National Forest initiative is increasing woodland planting.	■ The area is generally not well wooded covering only 5 per cent of the NCA but this is increasing particularly within The National Forest in the north of this NCA. ■ Woodland cover is mainly confined to small copses and spinneys on the clay ridges giving the character of an open landscape with some woodland. ■ Ancient woodland with oak and ash supports important indicator species. ■ Landscaped parklands are an important feature of the NCA which have been dramatically decreasing and associated veteran trees have declined. Wooded areas on estates are also associated with historic parkland and have often been associated with shooting on such estates. ■ The fields are generally open with low hedges and hedgerow trees, and woodland edges and copses. ■ A variety of woodlands support breeding birds and mammal communities.

Landscape attribute	Justification for selection
A highly productive commercial agricultural landscape, predominantly of arable crops with some permanent pasture.	■ The area has fertile soils on the mudstones and much of the area is arable, with higher ground in particular favouring permanent pasture. ■ The area has a history of livestock farming but there has been a move away from pasture to arable, with the permanent pasture limited to less productive soils. ■ The farmed landscape provides a variety of habitat types; neutral grassland, hedges, hedgerow trees and streams and farm ponds. ■ The fields are generally open with low hedges and hedgerow trees, and woodland edges and copses. ■ Woodland is primarily found on the less productive soils but areas of arable have been planted within The National Forest.
Historic field patterns, landscape designed parklands and fine examples of country houses, spired churches, small nucleated villages on higher ground with dispersed red-brick farmsteads, enclosed rural lanes with wide verges, areas of ridge and furrow and deserted settlements and a range of other historic and archaeological features, including the Ashby and Coventry canals.	■ The parklands are an important feature of the NCA and have been dramatically decreasing and associated veteran trees have declined. Wooded areas on estates are also associated with the historic parkland. ■ With increased urban development associated with larger settlements on the periphery, the importance of maintaining the rural settlement pattern increases, contributing to the area's sense of place. ■ The red brick and Staffordshire tiles and pantiles provide a strong local vernacular to buildings. ■ The narrow winding lanes linking small nucleated villages and remnant ridge and furrow are particularly significant in contributing to historic character. ■ Hedgerows enclose a regular field pattern. There is evidence of parliamentary enclosure and some early enclosures.
The area includes a network of several rivers and streams and wetland habitats. The Ashby Canal and Coventry Canal are also important features of standing water.	■ The many rivers and streams strongly contribute to a traditionally characteristic riverine landscape that is also important for supporting associated wetland habitat. They include the rivers Anker, Sence and Mease and a small section of the Trent. ■ The River Mease is an important designated nature conservation site of SAC and SSSI importance for habitats and includes protected species such as otters and water voles and internationally important populations of white-clawed crayfish, spined loach and bullhead fish. ■ Wet flood plain grazing marsh is very important along the Trent accounting for 346 ha. ■ These wetland habitats support some important plants species and are important for breeding birds. ■ Alder and willow are features of wooded areas along watercourses.

Landscape opportunities

- Protect the overall quiet rural open character of much of this lowland landscape including views of historic church spires which are strong visual features in the landscape. Protect the traditional red brick vernacular and the settlement pattern of the small nucleated villages, and the winding roads with wide grass verges that connect them.

- Protect from damage and appropriately manage the area's historic landscape features such as its ancient oak ash woodland, the Ashby Canal and the Coventry Canal, the landscaped parkland estates and their veteran trees and fine country houses, areas of ridge and furrow, deserted settlements and characteristic hedgerow boundaries.

- Protect the rivers Mease, Sence and Anker with their associated streams and tributaries as important landscape and nature conservation features. Protect and appropriately manage their wet woodlands and other associated wetland habitats that are characteristic of this lowland landscape.

- Plan to accommodate development pressure from the expansion of Tamworth, Atherstone, Nuneaton, Hinckley and Burton-upon-Trent by designing a network of multi-functional green infrastructure which respects the surrounding landscape character of these areas and which provides for links out into the wider countryside and increased opportunities for people, nature and wildlife.

- Plan for improved management of parkland areas and their associated features and habitats. Ensure local landscape character is respected and enhanced. Maintain and restore habitats in accordance with biodiversity action plans and heritage conservation management plans.

- Manage arable cropping patterns to encourage rarer arable plants and farmland birds/mammals following appropriate management under Environmental and Countryside Stewardship agreements.

- Manage watercourses to enhance wildlife value, while restoring associated wetland habitats and grazing flood plains. Manage willow trees along watercourses appropriately through pollarding to increase their longevity.

- Manage through Environmental and Countryside Stewardship, the restoration of hedgerows and replace hedgerow trees, forming a predominantly regular field pattern.

- Manage and conserve all ancient semi-natural and broadleaved woodland, taking appropriate opportunities to increase small-scale woodland coverage where this enhances landscape character and maintains wider open views which are characteristic of this area.

Ecosystem service analysis

The following section shows the analysis used to determine key Ecosystem Service opportunities within the area. These opportunities have been combined with the analysis of landscape opportunities to create Statements of Environmental Opportunity.

Please note that the following analysis is based upon available data and current understanding of ecosystem services. It does not represent a comprehensive local assessment. Quality and quantity of data for each service is variable locally and many of the services listed are not yet fully researched or understood. Therefore analysis and opportunities may change upon publication of further evidence and better understanding of the inter-relationship between services at a local level.

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	Fertile soils Arable crops Dairy farms Topography	Triassic Mercia Mudstones underlie this area and gives rise to productive clay soils. Arable farming predominates across the area benefitting from the fertile soils- mainly Grade 2 (30 per cent) and Grade 3 (61 per cent) agricultural land. On steeper ground and where clays are heavier, pasture farming is common. There are around 34 per cent cereal farms and 12 per cent dairy holdings. Survey data from 2000 to 2009 show a 17 per cent rise in the number of cereal farms, while general cropping and dairy farms have decreased by 56 per cent and 27 per cent respectively.	Regional	Arable farming can provide multiple benefits in maintaining the level of food production and for potentially enhancing biodiversity and preserving the historic landscape character. Pressures include the reduction or loss of permanent pasture to arable and the potential effects of diffuse pollution on watercourses particularly along the River Mease.	Work with farmers to manage arable cropping patterns to encourage rarer arable plants, farmland birds and mammals and create grass margins around arable fields. Increase grazing and sward diversity to increase the laying down of organic matter and manage sites with a view to allowing wildflowers to flower and seed. Extend agri-environment agreements with farmers to minimise the effects of diffuse pollution from commercial agriculture by adopting buffer strip management particularly along the River Mease to help improve water quality and reduce total loss of pasture to arable.	**Food provision** **Biodiversity** **Pollination** **Sense of history** **Sense of place / inspiration** **Regulating water quality** **Regulating soil quality** **Regulating soil erosion**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Woodlands Parkland areas with woods and trees Soils	This NCA contains 1, 591 ha of woodland (where woodlands are over 2 ha in size) covering 5 per cent of the NCA, including 123 ha of ancient woodland. Woodlands are small and intermittent and are commonly spinneys, copses and game coverts. Oak/ash woodland is found on heavier clay soils and is generally in blocks of less than 50 ha. The National Forest covers a part of the NCA (5,892 hectares). 12 per cent of the total National Forest Area. A number of parkland areas contain significant proportions of woodland.	Regional	This area has a low overall hectarage of woodland so current timber provision is low. However, The National Forest initiative is increasing the management of mature woodland and increasing the area of new woodlands, mainly broadleaved so there will be a local source of woodfuel in the future and benefits for biodiversity, water quality, soil quality, and reducing soil erosion but also for recreation.	There is an opportunity to increase woodland cover in accordance with The National Forest landscape design guidance for woodland creation. Elsewhere there are opportunities for small to medium-scale woodland creation along valley bottoms. Supporting The National Forest incentives to increase appropriate woodland creation and restoration, and open up access routes in woodland to the public. Promoting sustainable woodland and soil management practices, such as coppicing, pollarding, and rotational wood fuel production, to increase carbon storage and sequestration and resilience of woodlands to climate change.	**Timber provision** **Recreation** **Climate regulation** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow** **Biomass energy**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability	Rivers Canals Open water bodies	There are three main rivers in the NCA, the Mease, Sence and Anker and two canal systems, the Ashby Canal and the Coventry Canal. There are no major aquifers in the NCA. The River Mease is a small lowland river which is designated as a Special Area of Conservation (SAC). The River Mease has a 'water available' Catchment Abstraction Management Strategy (CAMS) status[9]. The River Anker is joined by the River Sence at Atherstone and flows in a north-westerly direction through the NCA. The River Anker and the River Sence currently have a 'water available' CAMS Status	Local	All of the rivers have a 'water available' status. Threats to this status could include the potential growth and expansion of the surrounding towns. As more water becomes available wetland biodiversity may benefit and the riverine landscape character could be enhanced and improvements could be seen in water quality	Appropriately manage the rivers Mease, Sence and Anker to protect the main water sources within the area and maintain and protect the Ashby and Coventry canals as supplementary water and recreation sources Work in collaboration with riparian land owners and managers, potentially through the Catchment Sensitive Farming Scheme to manage watercourses to prevent diffuse pollution entering the water courses and allow water table levels to rise where appropriate. Seek opportunities to extend and enhance areas of riverine landscapes, wetland habitat such as wet meadows and wet woodland particularly in flood plains and along rivers and streams increasing the value of the habitats for rare species of wildlife such as water voles, toads and otters.	**Water availability** **Regulating water quality** **Biodiversity** **Recreation** **Sense of place / inspiration** **Regulating soil erosion**
Genetic diversity	Not significant in this NCA					

[9] *Tame, Anker and Mease Catchment Abstraction Management Strategy*, Environment Agency (March 2008).

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biomass energy	Fertile soils Woodland	The soils across the NCA offer a good commercial yield from arable cultivation so there is only medium yield potential for short rotation coppice and miscanthus. Existing woodland cover is 5 per cent of the NCA.	Local	Energy crop planting in appropriate location and scale could enhance local landscape character. The existing woodland cover offers limited potential for the provision of biomass. Woodland planting, as part of The National Forest will increase woodland cover and biomass potential for the future. The NCA has medium yield potential for short rotation coppice (SRC) but there is an area of low potential SRC yield around Nuneaton. The potential miscanthus yield in the NCA is medium although there are some areas of high yield around Nuneaton and around Burton-upon -Trent in the north of the NCA.	Seek opportunities to plant energy crops close to existing areas of woodland to increase biomass production while maintaining the overall open character of the landscape and open views from woodland through to the wider countryside. Bring unmanaged areas of woodland back into management to increase biomass production from existing areas of woodland. Plant short rotation coppice in The National Forest where woodland planting is already occurring. Explore the potential for growing miscanthus around Nuneaton and Burton-upon-Trent where the potential yield is higher. Ensure good soil management to increase biomass opportunities.	**Biomass energy** **Climate regulation** **Regulating soil erosion** **Regulating soil quality** **Biodiversity** **Timber provision**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	Soils Existing woodlands New woodland planting (including The National Forest Area) Wet woodland Grazing marsh Pasture	The mineral soils over most of the NCA have a low carbon content (0-5 per cent). There are two small pockets of soil with higher carbon content (5-10 per cent) which may be associated with the loamy and clayey flood plain soils with naturally high groundwater. Higher carbon may also be associated with areas of flood plain grazing marsh and areas of woodland cover in the NCA (5 per cent of the NCA).	Local	The majority of the soils in the NCA offer limited potential to improve climate regulation, therefore woodland is likely to be the most significant contributor here and woodland planting (as part of The National Forest) is occurring in the north. Carbon sequestration and storage in mineral soils can be raised by improving soil structure, steadily increasing organic matter inputs and by reducing the frequency / area of cultivation. Soil carbon and soil carbon storage will be higher under areas of woodland, wet woodland and pasture.	Increase woodland and maintain existing woodland in good condition to benefit carbon storage in soils. Increase woodland planting to provide carbon sequestration and increase woodland management such as coppicing and pollarding to increase both sequestration and resilience of woodlands to climate change. New woodland planting would be generally appropriate, making a contribution to increasing the overall woodland coverage in the area as well as carbon storage.	**Climate regulation** **Regulating soil quality** **Biodiversity** **Sense of place / inspiration**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	Semi-natural wetland Grazing marsh Hedgerows Native riverside plants Soils	Water quality in the rivers Mease and Sence is poor. The River Anker has a moderate ecological potential status. The only river subject to surface water chemical testing in the NCA is the River Anker, which currently has a good surface water chemical status. The groundwater chemical status in the majority of the NCA is poor. The River Mease is a priority area under the Catchment Sensitive Farming Project.	Regional	Water quality is particularly important for the River Mease SSSI and SAC to support its internationally important populations of white-clawed crayfish, spined loach and bullhead fish. Pressures affecting water quality include land use change, agricultural intensification and high levels of phosphorous from sewage treatment works and road runoff. Himalayan balsam, a non-native invasive plant which colonises the river banks, is also preventing more native riverside plant species to thrive which in turn increases the amount of fine sediment entering the channel through surface runoff. Slowing the pathway of runoff could have significant impacts on regulating soil erosion and subsequent sedimentation, biodiversity and soil quality.	Appropriately manage the River Mease SSSI and SAC to support and protect its internationally important populations of white-clawed crayfish, spined loach and bullhead fish. Promote the Catchment Sensitive Farming Scheme to farmers and landowners. Extend agreements with farmers to minimise the effects of diffuse pollution from commercial agriculture by adopting buffer strip management particularly along the River Mease to help improve water quality. Promote the developer contribution scheme that will enable development to proceed in the catchment of the River Mease Special Area of Conservation while ensuring that such development does not contribute to deterioration in water quality. **Continued over...**	**Regulating water quality** **Biodiversity** **Water availability** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow** **Sense of place / inspiration** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality continued					**Continued from previous...** The scheme will pay for projects to offset the phosphate contribution made by the new development. Manage the Ashby Canal SSSI and other standing water in favourable condition. Seek opportunities to extend and enhance areas of wetland habitat such as wet meadows and wet woodland particularly in flood plains and along rivers and streams and manage in favourable condition for declining species such as water vole and otter. Encourage farmers and landowners to manage and extend their hedgerows so that runoff is significantly slowed down, flooding reduced and a sense of place is reinforced.	

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water flow	Rivers, streams and ponds Flood plain pasture, grazing marsh and wetland habitats Riparian vegetation including wet woodland	The NCA lies within the Trent catchment (the management plan for this catchment was published in 2010[10]). The Environment Agency flood risk map indicates that for much of the NCA flooding is not generally a major issue, however it does show areas of high localised flood risk associated with the rivers Mease, Sence and Anker. The River Anker burst its banks, causing flooding in and around Nuneaton in 2007.	Regional	The suggested approach to flood risk management includes investigating land use changes which will reduce run-off rates. This may also lessen soil erosion from cultivated land. Also identifying locations where flood attenuation ponds or wetland areas could be developed with associated habitat improvement and potential sites for BAP habitat creation.	Increasing riparian vegetation along watercourse banks including the rivers Mease, Sence and Anker and along the Ashby and Coventry canals. Look for opportunities to create, extend and manage wetland areas Promote opportunities through schemes such as catchment sensitive farming to manage soils to reduce erosion.	**Regulating water flow** **Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Biodiversity** **Sense of place / inspiration**

[10] Information from URL: www.environment-agency.gov.uk/research/planning/114350.aspx

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality	Soils Woodlands Hedgerows	The main soil types in this area include: ■ Slightly acid loamy and clayey soils with impeded drainage, covering over half of the NCA. ■ Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils covering a quarter of the NCA. ■ Freely draining slightly acid loamy soils less than 10 per cent. This NCA contains 1,591 ha of woodland (where woodlands are over 2 ha in size) covering 5 per of the NCA.	Local	The majority of the soil in this NCA has impeded drainage. Soils are easily damaged when wet and therefore it is important to minimise compaction and/or capping which will tend to exacerbate run-off problems. These soils may have limited potential for increasing organic matter levels by management interventions.	Increase woodland cover and hedgerows. Encourage best farming practices such as reduce machinery operations on more vulnerable soils during protracted wet periods, encourage permanent leys to improve soil structure, minimise cultivation, and steadily Increase cover of woodland and hedgerows. Measures to maintain good soil structure should be employed at a landscape scale including; growing cover crops to increase rates of organic matter within the soil, increasing the use of fallow cropping within arable rotations and retaining over winter stubble. The timing of agricultural operations is key to reducing current rates of erosion. Grazing regimes and the use of agricultural machinery should also respond to climatic conditions in order to reduce soil compaction.	**Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Biodiversity** **Water availability** **Food provision** **Timber provision**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion	Soils Woodlands Hedgerows Pasture	The majority of the soils in the NCA (covering 65 per cent) are at risk of soil erosion. The dominant soil in the NCA is the slightly acid loamy and clayey soils with impeded drainage (covering 59 per cent). This soil is easily compacted by machinery or livestock if accessed when wet, increasing the risks of soil erosion by surface water run-off, especially on steeper slopes. Erosion is exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted. There is the potential for wind erosion on some coarse-textured cultivated variants.	Local	It is important to retain the quality, structure and condition of the fertile soils in this NCA as this is key to the area's agricultural productivity. The soils are easily compacted by machinery if accessed when wet, increasing the risks of soil erosion by surface water run-off. The potential for soil erosion is exacerbated where soils are left exposed and where organic matter levels are low following certain cycles of arable cultivation.	Increase woodland and shelter belts, restore 'gappy' hedgerows in poor condition to act as wind breaks and bind the soil. Increase the condition of riparian habitats beside both small and major watercourses, reintroducing a strong network of habitats, including wet woodland and wet grassland. These riparian habitats will capture increased volumes of migrating sediments before it can enter into the rivers and streams. Create grass margins and consider planting short rotation coppice and miscanthus to provide wind cover in this open and exposed rural landscape.	**Regulating soil erosion** **Biodiversity** **Regulating water quality** **Water availability** **Regulating water flow** **Regulating soil quality** **Food provision** **Sense of place / inspiration** **Biomass energy**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Species-rich hedgerows Arable margins	The area is predominantly arable land and the enlargement of field parcels combined with a lack of active management led to a significant loss of hedgerows and field margins within the landscape.	Local	Hedgerows provide good corridors and habitats for pollinators. Pockets of species-rich hedgerows, managed to maintain a diverse range of flora which flower over a prolonged period of time provide the best sources and networks for pollinating invertebrates to move through and between food crops.	Increase sward diversity to increase the laying down of organic matter and manage sites with a view to allowing wildflowers to flower and seed. Manage hedgerows and verges to enhance and maintain a diverse range of flowering species, age and structure.	**Pollination** **Biodiversity** **Sense of place / inspiration** **Regulating soil erosion** **Regulating soil quality** **Climate regulation** **Food provision**
Pest regulation	Woodland Hedgerows Arable margins	Many of the most well established semi-natural habitats in this area support a variety of predatory species, such as beetles, which can contribute to the regulation of populations of pests. Ancient semi-natural woodland and wood pasture and parkland containing ancient and veteran trees.	Local	Fragmentation and poor connectivity in the network of habitats may limit the movement and effectiveness of predatory species.	Enhance and expand the network of semi-natural habitats that aid the movement of predatory species and bring benefits for pest regulation within food crops, as well as pollination and biodiversity.	**Pest regulation** **Pollination** **Biodiversity** **Food provision**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of place/ inspiration	Open views Streams, rivers and their flood plains and valleys and associated wetland habitats Field patterns Sense of tranquillity Parklands National Forest area Church spires	Evidence from Countryside Quality Counts data suggests while the landscape has a generally intact and well maintained appearance, some areas have suffered from a loss of hedgerow trees resulting in larger fields and a sense of exposure. Hedgerows have been lost as more land is being taken for arable cropping. The data also shows that the overall historic features of the area have been weakened particularly associated with landscape parkland loss and in less remote areas particularly around urban fringe and principal transport infrastructure.	Local	Management to maintain locally distinctive features and elements is also likely to increase sense of history. Conserving and enhancing the distinct landscape character is likely to benefit biodiversity by enhancing or expanding the range of habitats, such as woodlands and riverine habitats. Pressure on the distinctiveness of the area and sense of place comes from expanding urban areas at the periphery and increased infrastructure development.	Manage and protect the Mease and Sence rivers and their valleys which form the most distinctive natural features of this predominantly open, arable, lowland landscape. Preserve existing field patterns which are an enduring legacy of the enclosures of the 18th and 19th centuries. Protect, extend and manage The National Forest which is strengthening wooded character within the NCA. Promote the large estates, wooded parklands and country houses of the NCA which contribute so strongly to its sense of place. Manage the expansion of the transport network ensuring improvements are carefully planned to provide positive environmental and landscape enhancements.	**Sense of place/ inspiration** **Sense of history** **Biodiversity** **Recreation** **Tranquillity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Dispersed villages on low ridges Spired churches Manor houses 19th-century red brick farmhouses and timber-framed buildings Traditional field pattern Ridge and furrow Earthworks Canals	1 registered park and garden covering 119 ha, 20 scheduled monuments and 419 listed buildings	Local	According to Countryside Quality Counts results 2007, the overall historic features of the area have been weakened particularly associated with landscape parkland. Managing and enhancing these assets could increase recreation and sense of history and place.	Preserve the existing settlement pattern consisting of small, dispersed villages on low ridges. Maintain and protect historic buildings and landmarks which strongly reflect the traditional character of the area including spired churches, manor houses, 19th-century red brick farmhouses and timber-framed buildings in the more remote areas. Use traditional building materials for construction, extension and repair work. Preserve the existing field pattern which is evocative of the history of enclosures. Protect and maintain the ridge and furrow earthworks evident around isolated villages and narrow river margins with good soil and land management. Protect and promote important heritage sites.	**Sense of history** **Sense of place/ inspiration** **Recreation** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	Streams and rivers and the associated pastoral character of stream sides on steeper slopes and around villages	The NCA has experienced a decline in tranquillity with undisturbed areas having decreased from 66 per cent in the 1960s to 42 per cent in 2007 (CPRE Intrusion Map, 2007)	Local	The decline in tranquillity has resulted largely as a result of the increased traffic on the main roads of the NCA, not least the M42, M1 and A42. Characteristics of the landscape that are particularly important in conveying a sense of tranquillity are the prominence of streams and rivers and the associated pastoral character of stream sides on steeper slopes and around villages.	Conserve more remote areas from development by working to ensure traditional settlement patterns are retained and maintaining relative high levels of tranquillity beyond the M42/ A42 and A444 corridors. Manage the expansion of the transport network ensuring improvements are carefully planned to provide positive environmental and landscape enhancements.	**Tranquillity** **Biodiversity** **Sense of place/ inspiration** **Recreation** **Regulating water quality** **Regulating water flow** **Climate regulation**

[17] *Turning the Plough: Loss of a Landscape Legacy*, English Heritage (2005)

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation	Rights of way network National cycleway network routes Ivanhoe Way long distance footpath Parks Manor Houses Canals Rivers The National Forest Area Twycross Zoo	The NCA offers a network of rights of way totalling 411 km at a density of 1.3 km per km^2, and includes National Cycle Networks as well as open access land covering 700 ha or nearly 2 per cent of the NCA area. Part of the NCA lies within The National Forest, which has recreational and educational facilities There is public access along the Ashby Canal towpath and its marina at Snarestone. There are a number of parks and visitor destinations, such as Twycross Zoo.	Regional	Awareness of the recreational resources in the area is low. There is one well known site – Twycross Zoo. It is likely that recreational opportunity could be increased without significant effects on other services. However, increased recreation may have minor negative effects on tranquillity and biodiversity if not managed effectively.	Maintain and extend public access routes within the NCA, linking where possible with existing routes. Promote the use of the existing network of rights of way within the NCA and its links with the National Cycle Network. Raise awareness of circular routes associated with the Leicestershire Round and Ivanhoe Way long distance footpath. Promote and add to recreational opportunities within The National Forest. Raise the profile of the Coventry Canal and the Ashby Canal towpaths and the marina at Snarestone as venues for green tourism. Maintain the country parks and manor houses within the NCA and promote them as visitor attractions.	**Recreation** **Sense of place / inspiration** **Sense of history** **Biodiversity** **Regulating water quality** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity	River Mease SAC SSSI Ponds Neutral grasslands Wet meadows Parkland Wet woodlands Rivers and streams Hedgerows and hedgerow trees	The 604 ha (2 per cent of the NCA area) of priority habitats within the NCA include 346 ha flood plain grazing marsh in the western part of the NCA, 92 ha of fens and 85 ha of wet woodlands. The NCA contains 16 km of one SAC (the River Mease) and has 139 ha of nationally designated SSSI, including the Ashby Canal SSSI. There has been significant uptake of Environmental Stewardship agreements for creation and restoration of ponds since 1999.	National	Existing grassland continues to be under threat from agricultural improvement including cultivation and habitat fragmentation. The area's many rivers, streams, ponds and canals are important for nature conservation. In particular the River Mease and the Ashby Canal, where water quality is important, and which have international and national designations for nature importance.	Manage the River Mease SAC to support its internationally important populations of white-clawed crayfish, spined loach and bullhead fish. Manage the Ashby Canal SSSI and other designated sites in favourable condition. Extend the existing habitat network within the NCA by creating new areas of semi-natural grassland, wet meadows and wet woodland, particularly in the flood plains and along rivers and watercourses. Ensure characteristic traditional field ponds continue to be retained and enhanced. Manage and restore hedgerows and hedgerow trees that form the regular field pattern through Environmental and Countryside Stewardship.	**Biodiversity** **Sense of place / inspiration** **Regulating water quality** **Regulating soil erosion** **Recreation** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Local Geological Sites Soils	Seven Local Geological Sites. Three sites are in good condition, one is good declining, one is good steady, one is poor declining and one is poor declining/lost. The soilscape types in this area include: ■ Slightly acid loamy and clayey soils with impeded drainage covering over half of the NCA. ■ Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils covers a quarter of the NCA. ■ Freely draining slightly acid loamy soils less than 10 per cent of the NCA.	Local	There is relatively little recorded geological interest in this NCA, meaning that it is important to protect and enhance the features which are of geological interest. Only 3 out of 7 sites are in good condition so there is a need to improve the others. This could have additional benefits for biodiversity and recreation as well as soil and water quality. It is important to retain the quality, structure and condition of the fertile soils in this NCA as this is key to the area's agricultural productivity.	Protect and enhance the local geological sites and bring them into good condition Support the Local Geodiversity Action Plan particularly opportunities to increase access to and interpretation of geological exposures Support good soil and land management.	**Geodiversity** **Biodiversity** **Sense of place / inspiration** **Recreation** **Regulating water quality** **Regulating soil quality**

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Catalogue Code: NE421
ISBN: 978-1-78367-183-0

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