National Character Area profile:

# 113. North Kent Plain

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.

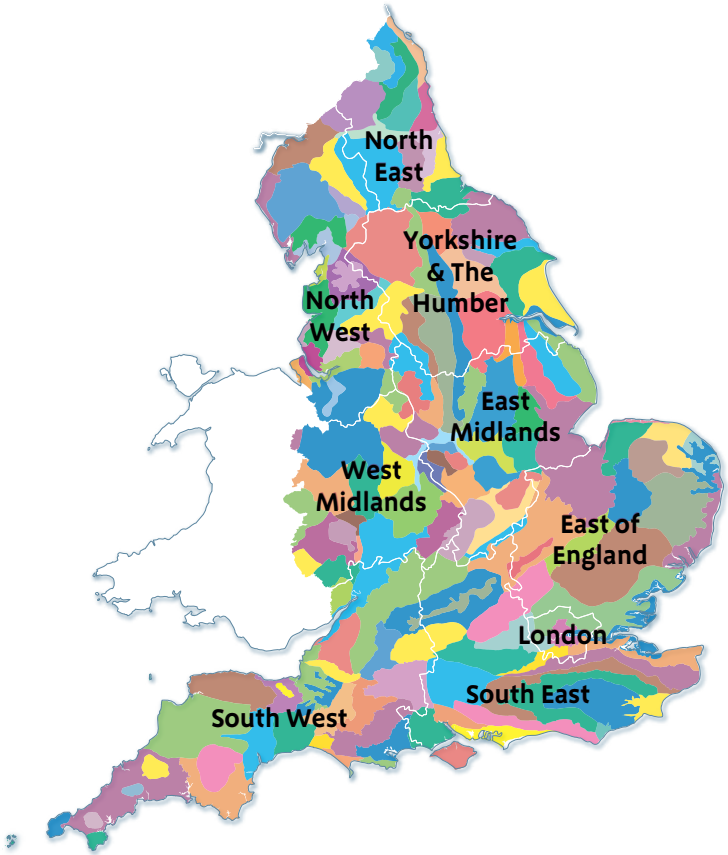
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and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

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

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

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

## National Character Areas map




[1] The Natural Choice: Securing the Value of Nature, Defra (2011; URL: www.official-documents.gov.uk/document/cm80/8082/8082.pdf)

[2] Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf)

[3] European Landscape Convention, Council of Europe (2000; URL: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm)

# Summary

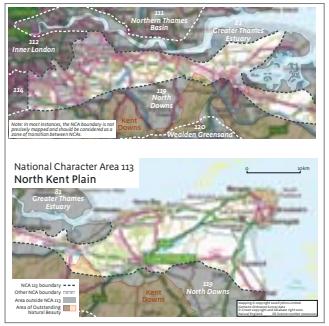
The North Kent Plain National Character Area (NCA) is the strip of land between the Thames Estuary to the north and the chalk of the Kent Downs to the south. The area is open, low and gently undulating. It is a very productive agricultural area with predominantly high-quality, fertile loam soils characterised by arable use. Traditional orchards, soft fruits and other horticultural crops exist in central and eastern areas giving rise to the use of the title 'Garden of England'. There is an extensive area of ancient woodland around Blean, plus significant ancient woodlands further west. However, it is generally an open landscape: characteristic shelterbelts occur within the fruit-growing areas, but the agricultural land is mostly devoid of hedgerows.

The NCA meets the sea between Whitstable and Deal, changing from a north-facing to an east- or south-facing shore. There is a great diversity of coastal habitats, including chalk cliffs around Thanet, and soft cliffs between Herne Bay and Reculver – and also at Pegwell Bay. There are also areas of intertidal sand and mud, salt marshes (especially at Pegwell Bay), sand dunes (notably Sandwich Bay), shingle beaches (at Minnis Bay and near Deal), brackish lagoons and maritime grasslands on cliff-tops and sea walls.

The area has a strong urban influence, with several built-up areas, including coastal towns and these occupy a substantial part of the area with significant development around London and the Medway towns, which has a strong influence in the west of the NCA. Canterbury is world-renowned, and was designated as a World Heritage Site in 1988. The Site includes Canterbury Cathedral and Precincts, St Augustine's Abbey and St Martin's church. These are all considered milestones in the religious history of England, and are also architecturally significant[4].

A small proportion of the area (2.4 per cent) falls within the Kent Downs Area of Outstanding Natural Beauty (AONB). International and European designated sites are associated in the main with coastal habitats, with four Special Protection Areas (SPAs), two Special Areas of Conservation (SACs) and four Ramsar sites identified along the coast, falling either wholly or partially within the NCA. There are three inland sites: Stodmarsh SAC, SPA and Ramsar; Blean Woods SAC; and Queendown Warren SAC. The River Stour is the main catchment in the NCA, with its tributaries and associated wetlands being an important feature in the east. The Medway dissects the NCA in the west, dominated by the urban conurbations of Chatham and Gillingham, with its strong historic military associations.

This NCA is important for food production and associated services (such as soil and water regulation and management) that help to protect the area's natural assets. In addition, flood protection is an important consideration along the rivers and coastline. The NCA has significant opportunities for tourism and recreation. Green infrastructure opportunities are important for securing benefits to local communities, especially through the provision of accessible natural green space in urban areas. Development pressures (and the associated infrastructure) are likely to present significant challenges as the area responds to an increasing population and the demands of economic development and a changing climate. In response to these challenges, it will be important to maximise the opportunities for society and the natural environment in a balanced and co-ordinated manner.




**Click map to enlarge; click again to reduce.**

[4] Canterbury World Heritage Site, Statement of Outstanding Universal Value (SOUV), English Heritage

## Statements of Environmental Opportunity:

- **SEO 1**: Maintain the historic character and long tradition of a farmed landscape, creating habitats to establish more resilient and coherent ecological networks within the farmed and peri-urban areas, benefitting biodiversity and geodiversity, and helping to regulate water and soil quality. Protect traditional practices including the longstanding associations of the fruit belt, maintaining a strong sense of place and reinforcing Kent's reputation as the Garden of England.

- **SEO 2**: Plan for and manage the effects of coastal change, by allowing the operation of natural coastal processes and improving the sustainability of current management practices, to maintain and enhance the local landscape character and the area's biodiversity assets. This can lead to habitat creation, flood-risk reduction to built-up areas, and opportunities for recreational activity.

- **SEO 3**: Protect the distinct wooded areas of the landscape, particularly through the management of nationally important, ancient semi-natural woodlands, increasing the area of broadleaved woodland where appropriate, while increasing the connectivity of the mosaic of associated habitats notably wooded heath and semi-improved grassland while enhancing the recreational resource.

- **SEO 4**: Protect and enhance the strong character and heritage of the urban areas. Plan for the creation of significant new areas of green space and green corridors to provide a framework for new and existing development in urban areas and along major transport routes.

**Blean Woods is one of the few areas in Britain that supports the heath fritillary butterfly.**

# Description

## Physical and functional links to other National Character Areas

The North Downs are to the south of this National Character Area (NCA) and form a distinctive backdrop, with the boundary delineated between the Chalk and the Eocene deposits (although some Chalk also outcrops at Thanet). The underlying Chalk aquifer (an important source of groundwater abstraction) creates a functional link to surrounding NCAs. To the north is the alluvial Greater Thames Estuary. The area's western boundary is defined by Inner London and the Thames Basin Lowlands.

The River Darent drains from springs in the Wealden Greensand through the North Downs, and then runs through the western part of the NCA and north into the Thames. The Medway and Stour rivers drain north through the North Downs into the NCA, the Medway running north into the sea via the Greater Thames Estuary and the Stour flowing east directly into the North Sea.

Coastal processes of sedimentation and erosion provide a functional link between this NCA and, for example, the Greater Thames Estuary NCA to the west and the North Downs NCA to the south: as such, management of the coastal frontages cannot be considered in isolation. There are differences in the coastal processes on either side of the North Foreland: the moderately strong tidal streams ensure that the sand deposits are quite mobile.

The North Kent Plain NCA is an important transport corridor, with major rail and road links connecting Kent's coastal towns with London. These (and the area's proximity to the capital) have resulted in numerous economic, cultural and functional links with the City of London.

## Distinct areas

- Thanet

**Chalk cliffs at Pegwell Bay are of geological and biodiversity interest. The diverse coastline in this NCA provides good recreational opportunities.**

## Key characteristics

- An open, low and gently undulating landscape, characterised by high-quality, fertile, loamy soils dominated by agricultural land uses.
- The area's geology is dominated by Palaeogene clays and sands, underlain by the Chalk.
- Geologically a chalk outlier – and historically an island separated from the mainland by a sea channel – Thanet forms a discrete and distinct area that is characterised by its unity of land use, arising from the high-quality fertile soils developed in thin drift deposits over chalk.
- A diverse coastline (both in nature and orientation), made up of cliffs, intertidal sand and mud, salt marshes, sand dunes and shingle beaches. Much of the coastal hinterland has been built on, and the coast itself has been modified through the construction of sea walls, harbours and piers.
- Large arable/horticultural fields with regular patterns and rectangular shapes predominating, and a sparse hedgerow pattern.
- Orchards and horticultural crops characterise central and eastern areas, and are often enclosed by poplar or alder shelterbelts and scattered small woodlands.
- Woodland occurs on the higher ground around Blean and in smaller blocks to the west, much of it ancient and of high nature conservation interest.
- The Stour and its tributaries are important features of the eastern part of the NCA, draining eastwards into the North Sea, with associated wetland habitats including areas of grazing marsh, reedbeds, lagoons and gravel pits. The River Medway cuts through the NCA as it flows into the Thames Estuary.
- Other semi-natural habitats include fragments of neutral, calcareous and acid grassland, and also heathland.
- The area has rich evidence of human activity from the Palaeolithic period. Key heritage assets include Roman sites at Canterbury, Reculver and Richborough; the Historic Dockyard at Chatham; military remains along the coast; and historic parks and buildings.
- Large settlements and urban infrastructure (including lines of pylons) are often visually dominant in the landscape, with significant development around Greater London and the Medway Towns, as well as around towns further east and along the coast. Major rail and road links connect the towns with London.

## North Kent Plain today

Lying mainly on fine loam soils, the North Kent Plain is a productive agricultural area of England. With a generally low, gently undulating landform, the landscape is characterised by large, exposed arable and horticultural fields with regular patterns and rectangular shapes. These are predominantly devoid of hedgerows, and there is only limited shelter-belt planting around settlements, farmsteads, orchards and horticultural crops.

**Fertile soils supporting vegetable growing on Thanet.**

The west of the NCA is heavily urbanised, with large settlements and urban infrastructure dominant within the landscape. The proximity of the NCA to the coastal estuaries, marshes and heavy industry which characterise the area to the north has an influence on the NCA. Within and surrounding major towns, areas of green space provide a resource for local communities, including river corridors, woodlands and amenity greenspace. The Hoo Peninsula has a distinctive character and shelters the River Medway, forming a buffer and distinctive landscape setting for urban Medway. The wide ridge at the core of the peninsula is a solid backbone flanked by vast open grazing marshes to the west and the more secluded wetlands of Yantlet Creek to the east which both sit within the Greater Thames Estuary NCA.

The built environment also exerts a strong influence on the open farmland character, with associated infrastructure such as pylons dominating in expansive vistas. Discrete but significant areas of woodland provide contrast on the higher ground around Blean and to the west including Chattenden and Shorne, while the River Stour and its numerous tributaries are important features of eastern areas as they drain eastwards into the North Sea. There are a variety of coastal habitats, with many internationally designated for their biodiversity interest. The coast is an important resource for tourism and recreation.

The area's geology is dominated by Palaeogene clays and sands, underlain by chalk that outcrops principally in Thanet which forms a discrete and distinct area of the NCA. The Thanet plateau is characterised by its unity of land use arising from the high-quality fertile loams. Open, with few trees, the area is dominated by wide views over an extensive land cover of cereals, root crops and other horticultural crops.

The extensive woodlands that comprise the Blean complex are designated as a Special Area of Conservation (SAC) for sub-Atlantic and medio-European oak or oak-hornbeam forests. This type of woodland is rare in the UK occurring only in the south of England[5]. The Blean complex is an important site for the rare heath fritillary butterfly, and supports a population of national significance. The woodlands further west are also of conservation value, while poplar and alder shelterbelts and small woodlands are characteristic in the east of the NCA. These are often associated with the locally distinctive land use of orchards and horticultural crops that characterise the area, and reinforce Kent's reputation as the Garden of England. Although the area is predominantly arable, surviving wetland habitats within the Stour valley support a diversity of wildlife and include areas of grazing marsh, reedbeds, lagoons and gravel pits.

Elsewhere, fragments of unimproved grassland support a range of uncommon plants, including those associated with woodland on clay and sandy soils, and chalk grassland in Dartford, Gravesend and Thanet. A fine example is found at Queendown Warren (designated as an SAC for its grassland community), which supports an assemblage of rare orchids. A range of semi-natural habitats are also found along the coast.

A number of sites within the NCA are internationally designated for habitats and species associated with coastal systems[6]: Sandwich Bay SAC for extensive dune systems, and the Thanet Coast SAC for chalk reefs and submerged (or partially submerged) sea caves. Thanet Coast and Sandwich Bay are also designated as a Ramsar site, reflecting the wetland invertebrates and winter populations of ruddy turnstone that they support. In addition, five Special Protection Area (SPA) designations fall either wholly or partially within the NCA, each relating to wintering, breeding or passage bird populations. Stodmarsh is a National Nature Reserve (NNR), designated as an SAC, SPA and Ramsar reflecting the bird and invertebrate interest.

Large settlements dominate within the landscape, notably in the west around Greater London and the Medway Towns; further east at Canterbury, Faversham and Sittingbourne; and along the hinterland. The rural settlement pattern predominantly consists of nucleated villages with low densities of dispersed settlement, while medieval prosperity is reflected in the buildings of small market towns such as Fordwich and Sandwich. Coastal towns such as Margate provide a reminder of past bustling British seaside resorts and still hold a traditional seaside appeal.

The NCA has a rich variety of heritage assets, both above and below ground. Notable are the Lower Palaeolithic skull pieces found at Swanscombe. Roman remains are found across the area and include the Saxon Shore forts at Richborough and Reculver, and the walled city and cathedral at Canterbury (a World Heritage Site). Watling Street Roman road is also a feature, still influencing road patterns. The lesser north–south pattern of minor roads is also notable and reflects the historic settlement pattern: many of these had their origins as Saxon drove roads, for the movement of pigs. Other historic elements within the landscape include iron-age, Anglo-Saxon and medieval sites, and the influence of arable farming on field patterns from at least the Iron Age – in addition to military remains along the coast, historic parks and gardens, and the historic naval dockyards of Chatham.

[5] SAC selection data, Joint Nature Conservation Committee (URL: http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0013697)

[6] At the time of publication, a proposed new SAC (Tankerton Slopes and Swalecliffe) was in progress for Fisher's estuarine moth

## The landscape through time

Beneath the exposed geology of the North Kent Plain are Carboniferous strata – hidden Coal Measures – consisting of fluvio-deltaic sediments interbedded with seams of coal. These are not exposed at the surface, but they influence the NCA's character, landscape, industry and historic environment. The cChalk above the Coal Measures was laid down in warm, shallow seawater, and then folded and raised above sea level by the effects of the Alpine Orogeny (mountain-building episode), and subsequently eroded. As sea levels raised, the shallow marine and estuarine sands and clays of the Thanet Formation and Lambeth Group Woolwich, Reading and Blackheath Beds, were deposited over the Chalk. As the sea deepened further, the London Clay was laid down. Further environmental changes have now raised these strata above the current sea level. The Chalk now outcrops in Thanet (originally an island separated from mainland Kent by the Wantsum Channel) and, to a lesser extent, it is also exposed in sea cliffs and inland quarries near the Medway Towns and Gravesend. Swanscombe Skull SSSI contains some of the earliest human bones found in the UK.

Although this area was not glaciated during the ice ages, severe erosion of the Chalk and Tertiary strata created superficial deposits of chalk and flint rubble (known as Head deposits), windblown sand, loess and various river gravels associated with the changing course of the Stour and other rivers. These have resulted in a predominance of highly fertile and easily worked soils, making it one of the most productive agricultural areas in Kent.

Arable farming has been important in the area since at least the Iron Age, with a high proportion of arable land – especially to the west and on Thanet. The area experienced only minor contraction in the extent of arable in the 15th century, when many other arable areas saw a shift to pastoral farming due to the proximity of the London market. For the same reason, fruit growing has been a major feature of the area since the 13th century, and increasing from the 17th century with the establishment of larger orchards. Market gardening was brought to the area around Sandwich by Dutch émigrés, and is now a characteristic feature of this area and of Thanet. The River Medway has had a major influence on the area, with its long maritime history. The brick-earth of north Kent is, as the name suggests, excellent for brick-making; this was an important industry, especially in the housing boom years of the early 19th century.

Grazing marshes once occupied almost all of the low-lying land of the lower Stour valley and Wantsum Channel, and south to Deal. Most have been drained and converted to arable farmland since the 1940s, although fragments of wetland habitat survive and the area as a whole attracts large bird populations. Other wetland habitats within the Stour valley have developed through coal-mining subsidence and gravel extraction. The area had been largely cleared of woodland by the 11th century: it is now confined to small blocks and copses – often on higher ground – and shelterbelts of poplars that protect orchards and soft fruit. The only significant areas of ancient woodland are confined to pockets of higher ground with acidic clay soils, such as around Shorne, Chattenden and, in particular, the Blean.

Coastal processes have played a significant role in the development of the NCA. This is well illustrated by the closure of the Wantsum Channel, a former tidal channel between North and East Kent which separated Thanet from the mainland until some 500 years ago. In 1953, the area was hit by extreme floods, due to a storm surge. This was devastating and was the trigger for most of the coastal erosion and flood defence works around the coastline. The proximity of the Thames Estuary has influenced the character of the NCA, with the Medway and Thames rivers both serving as major transport routes and supporting a range of industrial activities.

Rural settlement consists of a mixture of both small nucleated villages and dispersed farmsteads at low densities, villages being more of a feature to the east. Significant expansion of settlement has occurred in the area during the 20th century: these settlements originally grew up around farming and fishing communities, before they later (from the 16th century) became important naval ports and commercial centres. More recently, they have become holiday resorts and commuter towns. The Roman-origin cathedral city of Canterbury (chosen as the seat of the first English archbishop in 603) is an important feature in the landscape, as are medieval towns. Urban areas exert a strong influence on the character of large parts of the area. The western end incorporates parts of outer London, plus commuter towns such as Orpington, Bromley and Dartford, which developed from the late 19th century. Further west, the NCA boundary cuts through Rochester and incorporates the towns of Chatham, Gillingham, Sittingbourne and Faversham. On the Isle of Thanet, Margate, Broadstairs and Ramsgate developed as resorts over the 19th century. Former colliery sites and villages at the south-eastern end of the NCA contrast with the usual Kent landscape.

Historically large areas of the NCA were owned by the Church, which continued to manage large estates after the dissolution of the monasteries in the 16th century. By national standards, the area has large numbers of medieval houses and barns – especially across the fruit belt – which testify to a class of prosperous farmers that developed on these estates from the 15th century. Fewer arable-based farms developed to the east of the Stour, and elsewhere the diverse economy sustained the development of middling-scale farms[7]. Coastal military defences protecting the eastern approach to London have been established from the later medieval period right through to the mid 20th century, and survive as a sequence around the internationally significant Chatham naval dockyards and their related defences.

The intensification of agriculture has had an impact on the farmed landscape through arable expansion and the loss of traditional orchards. Changes in horticultural methods are also notable, for example the use of polytunnels. The impact of 20th century development is significant and includes pylons, landfill sites, mineral workings, transport networks (including the M2 and the Channel Tunnel rail link) and extensive urban expansion. The impact of development is exacerbated by the expansive and open nature of the low-lying landscape.

[7] English Heritage, 2012, Draft Farmsteads and Landscapes Statement: North Kent Plain

## Ecosystem services

The North Kent Plain 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 North Kent Plain NCA is contained in the 'Analysis' section of this document.

### Provisioning services (food, fibre and water supply)

- **Food provision**: The area features a productive agricultural landscape with highly fertile, deep, rich loams, which are easily worked. There is a large proportion of Grade 1 agricultural land, which produces significant amounts of arable crops (mainly cereals, as well as oilseeds and cash roots) and notably fruit and other horticultural crops, lending Kent the moniker 'the Garden of England'.

- **Water availability**: The majority of the NCA is underlain by either principal or secondary aquifers. Abstraction from aquifers is used for public water supply and, to a lesser extent, for other uses including industry and agriculture. Surface water abstractions also occur, mainly for agricultural and amenity purposes. Much of the NCA has a poor quantitative water status, with much of the ground and surface water resource either over-abstracted or over-licensed[8].

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

- **Regulating water quality**: This service is currently low in parts of the North Kent Plain. Areas fall within nitrate vulnerable zones (NVZs) and the River Stour is a Defra priority catchment, and both support water quality regulation. There is potential for improvement of water quality – especially where it is failing to meet the standards of the Water Framework Directive. Urban run-off, point-source discharges and diffuse pollution all affect the water quality of the area's rivers and estuaries.

- **Regulating water flow**: Localised fluvial and tidal flood risk occurs in several locations within the NCA. Flood defences occur at Dartford and along the NCA's main body of coast between Whitstable and Deal, as well as along the River Medway. Catchment Flood Management Plans and Shoreline Management Plans set out an approach to managing the fluvial and tidal flood risk[9].

[8] North Kent & Stour Catchment Abstraction Management Strategies, 2008 (Environment Agency), accessed from: http://www.environment-agency.gov.uk/research/planning/33374.aspx

[9] *North Kent Rivers Catchment Flood Management Plan*, Environment Agency (2009); *River Stour Catchment Flood Management Plan*, Environment Agency (2009); *Medway Estuary and Swale Shoreline Management Plan*, Halcrow Group Limited(2010); *Isle of Grain to South Foreland Shoreline Management Plan*, Environment Agency (2008); *River Stour Catchment Flood Management Plan*, Environment Agency (2007; *North Kent Rivers Catchment Flood Management Plan*, Environment Agency (2009) (URL: www.environment-agency.gov.uk/research/planning/33586.aspx)

- **Regulating coastal flooding and erosion**: The Shoreline Management Plan identifies preferred policies of allowing cliff retreat on the undefended chalk cliff frontages, which will benefit the natural cliff habitats. Maintaining accessible geological exposures will also be important. Any loss of cliff-top unimproved grasslands will need to be compensated for. Low-lying soils, coastal features and habitats are all liable to be lost to 'coastal squeeze'. Opportunities should be sought to protect these habitats. Compensation habitats may need to be created where appropriate, and where natural regeneration is not possible or practical, aim to ensure no further net loss of nationally important estuarine or coastal habitats.

### Cultural services (inspiration, education and wellbeing)

- **Recreation**: This NCA has significant recreational opportunities for both residents and tourists, with extensive areas of quality green space linked by a network of local recreational paths and strategic routes such as the North Downs Way. Local visitors are attracted to this part of Kent, as are visitors from London, given the capital's proximity and transport connections to the NCA. Visitors are drawn to the area's popular seaside towns and beaches. Further significant recreational opportunities are offered by the Blean woodland complex north-west of Canterbury. Green infrastructure in and around surrounding towns provides an important resource for existing residents.

- **Sense of place / Inspiration**: A sense of place is provided by expansive views over the open and extensive gently undulating agricultural landscape, with its predominance of orchards and other horticultural land uses that give rise to central areas being known as the Garden of England. The historical importance of arable agriculture is marked by large-scale fields, which developed from the Iron Age onwards, as well as courtyard farmsteads, with large barns dating from the medieval period. Orchards and industrial-scale oast houses (mostly from the 19th century) testify to the importance of fruit and hops across the area. Canterbury is a World Heritage Site and the cathedral is a central landmark in the city. Medway has strong associations with naval history and with Charles Dickens, who resided in the area and used it as the setting for many of his novels. Senses of inspiration and escapism are further likely to be associated with the ancient woodland, the chalk cliffs and other undeveloped stretches of coastline. Places like Margate, Ramsgate and Broadstairs (and other coastal towns) have a distinctive character as seaside resorts.

- **Sense of history**: This is provided by the rich variation of heritage assets dating from the prehistoric periods – as well as knowledge that the area has been a major transport corridor and one of the most intensively cultivated areas of England for over 2,000 years. Roman remains are found throughout the area, notably the Saxon Shore forts at Richborough and Reculver, and also at Canterbury, which is of significant historical interest (its prominent cathedral is associated with Chaucer's pilgrims). History is sensed through the varied field and route-way patterns in the countryside, and by the several large urban areas,. Some of these have medieval cores, while others date from the early modern period, but all have clearly visible successions of later development. Along the shores are military remains as well as historic dockyards – again, with evidence of many phases of development.

- **Biodiversity**: The NCA has a number of SPA, SAC, Ramsar, SSSI and local site designations (refer to the 'Key facts and data' section of this document), supporting a range of rare habitats and species. Five NNRs offer accessible green space and access to some of England's finest habitats for local communities to enjoy.

- **Geodiversity**: There are seven nationally designated geological sites, four mixed-interest sites and 15 local sites, providing an important resource for education and research. The geodiversity has influenced the NCA's landscape, industry and historic environment. Some of the earliest human bones ever found in the UK are located at Swanscombe Skull SSSI and NNR.

**Wetland habitats in the Stour Valley at Stodmarsh National Nature Reserve.**

# Statements of Environmental Opportunity

**SEO 1: Maintain the historic character and long tradition of a farmed landscape, creating habitats to establish more resilient and coherent ecological networks within the farmed and peri-urban areas, benefitting biodiversity and geodiversity, and helping to regulate water and soil quality. Protect traditional practices including the longstanding associations of the fruit belt, maintaining a strong sense of place and reinforcing Kent's reputation as the Garden of England.**

**For example, by:**

- Conserving the dispersed rural settlement pattern of small nucleated villages on higher ground and surrounding fields, set among a historic network of narrow lanes.
- Supporting the maintenance of a diverse farmed landscape, incorporating horticulture. Safeguarding high-quality agricultural land and encouraging land management practices which protect soil assets and the benefits they provide.
- Where they exist, maintaining and managing traditional orchards – for their heritage value, genetic diversity and local distinctiveness. Managing the poplar and alder shelterbelts that enclose orchards and horticultural crops around Canterbury and Faversham, to benefit biodiversity and the landscape.
- Conserving and enhancing tranquillity within the National Character Area (NCA) and, where appropriate, planting broadleaved woodland to screen development while simultaneously linking habitats, improving ecological connectivity and resilience, and providing a source of local community green space.
- Restoring hedgerow boundaries, especially where they will help to impede cross-land flows within the Stour priority catchment and the catchments of the Darent / Cray and Medway. This will aid improvements in water quality, as well as restoring the character of native hedgerows and traditional field patterns – especially where lost in peri-urban areas.
- Adopting a landscape-scale approach to strengthening ecological networks. In particular, creating arable field margins and conservation headlands to help support important wintering and breeding populations of farmland birds, while increasing the habitat available for pollinators and rare arable plants. There will also be benefits for water quality and the regulation of soil erosion.
- Working in partnership and across sectors to improve the quality of surface water and groundwater within the NCA – especially water that currently fails to meet Water Framework Directive (WFD) objectives for good ecological status (surface water) or good status (groundwater).

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- Managing ditches to retain historic field boundaries within the Chislet Marshes/Ash Levels/Stodmarsh areas, benefitting biodiversity by maintaining an important refuge for water voles and rare snails.

- Conserving and managing the historic assets of the area – both above and below ground. Seeking to improve management, to protect archaeological remains (notably Roman). Conserving the historic parklands and their key habitats (such as veteran trees), supporting succession planting programmes, informed by the assessment of the historic design and significance of the parkland. Further, conserving vernacular and traditional built features such as historic farmsteads and oast houses, military remains and other historic urban features. Where appropriate, improving access to the historical assets of the NCA for research and tourism, and to connect communities with their local heritage.

**An open, low and gently undulating landscape characterised by high-quality, fertile, loamy soils dominated by agricultural land uses.**

**SEO 2: Plan for and manage the effects of coastal change, by allowing the operation of natural coastal processes and improving the sustainability of current management practices, to maintain and enhance the local landscape character and the area's biodiversity assets. This can lead to habitat creation, flood-risk reduction to built-up areas, and opportunities for recreational activity.**

**For example, by:**

- Maintaining opportunities for the natural regeneration of coastal features (including chalk cliffs, intertidal sand, mudflats and salt marsh) within the context of the policies identified by the Shoreline Management Plan, to help alleviate coastal erosion risk and adapt to the impacts of climate change. Maintaining important coastal geological exposures and geomorphological features will also benefit geodiversity. Research indicates that intertidal habitats such as mudflats and salt marshes, can play an important role in regulating climate change through carbon storage.
- Identifying further opportunities to create compensation habitats for those lost to 'coastal squeeze', aiming to ensure no net loss of habitat, benefitting biodiversity and the regulation of coastal erosion and flooding.
- Achieving good condition and expanding cliff-top calcareous grassland on the Thanet Chalk, benefiting biodiversity and enhancing adaptation to climate change, with new areas targeted to replace those lost to cliff retreat.
- Protecting the historic environment along the coast, notably the Roman Saxon Shore forts at Richborough and Reculver, as well as the military remains including the naval dockyards at Chatham. Seeking to enhance the educational and recreational opportunities associated with these historic features.
- Identifying opportunities to improve coastal access, strengthening the existing network and extending it (where appropriate) to link routes with urban centres, historic features and other paths. This will provide a high-quality recreational resource for both residents and tourists. Further, identifying opportunities to encourage sustainable tourism, particularly for its socio-economic benefits.

**SEO 3: Protect the distinct wooded areas of the landscape, particularly through the management of nationally important, ancient semi-natural woodlands, increasing the area of broadleaved woodland where appropriate, while increasing the connectivity of the mosaic of associated habitats; notably wooded heath and semi-improved grasslands and enhancing the recreational resource.**

**For example, by:**

- Maintaining and restoring active management of the internationally important Blean complex, north-west of Canterbury. This is one of the largest complexes of ancient semi-natural woodland in England. Expanding and connecting nature reserves across the area (including wooded heath, grassland and wetland areas) will further benefit wildlife and landscape character, as well as soil and climate regulation. Recreational opportunities, biomass production from traditionally-managed woodlands and enhanced adaptation to climate change will also result.
- Maintaining and restoring other localised ancient woodland blocks and small farm woodlands, conserving the integrity of woodlands and managing them as single units (by coppicing where appropriate) to derive the benefits described above.
- Thickening and expanding scattered shelterbelts, expanding around development to enhance their screening function (where appropriate).
- Seeking opportunities to revert plantations of conifers on ancient woodland sites to mixed native broadleaved species.
- Considering small-scale woodland creation where appropriate, for example where it buffers existing woodlands and/or contributes to habitat networks. Seeking to optimise the multiple benefits (social, economic and environmental) that woodlands and trees can provide as part of green infrastructure in urban areas.

**SEO 4: Protect and enhance the strong character and heritage of the urban areas. Plan for the creation of significant new areas of green space and green corridors to provide a framework for new and existing development in urban areas and along major transport routes.**

**For example, by:**

- Creating or safeguarding extensive areas of multi-functional green space – within and surrounding both towns and identified new development areas. These areas should include attractive new wetlands that form part of sustainable urban drainage systems and link into the heart of urban areas as part of green infrastructure planning.
- Targeted planting of areas of broadleaved woodland, building the urban and peri-urban green infrastructure around towns where appropriate – particularly Dartford, Gravesend and Medway, but also Bromley and Bexley. These woodlands may provide a screening function and a further recreational resource, as well as a local source of wood fuel (where managed through coppicing). In addition, conserving the existing urban treescape and seeking opportunities for urban tree planting, helping to regulate climate change.
- Creating community allotments and potentially developing large community orchards on the edge of urban areas.
- Supporting the design of landscapes associated with new development and green infrastructure within Greater London.
- Conserving Canterbury's historic character and setting, retaining long views to the cathedral (a World Heritage Site), and maintaining a strong sense of place and history.
- Protecting, celebrating and promoting the heritage of the urban areas to the west of the NCA, including the strong maritime and military associations of the Medway and its significant role in the area's industrial past, present and future. Engaging communities with their local history and strengthening the physical links with the important historic landscapes that surround them.
- Seeking to maintain and enhance areas of open countryside in the heavily urbanised west of the NCA, to preserve the distinct settlement pattern.
- Restoring and appropriately managing disused mineral workings and landfill sites, integrating them into the landscape through the extensive creation of semi-natural habitats (benefitting landscape and biodiversity), while retaining exposures of geological importance and providing a recreational resource.
- Maintaining important inland geology exposed in pits and quarries, for example the dry mineral workings at Swanscombe, helping to promote an appreciation and understanding of the geodiversity of the NCA, and connecting communities with their local heritage.
- Ensuring that development and its associated infrastructure does not intrude on the special qualities of the Kent Downs Area of Outstanding Natural Beauty (AONB) to the south and landscape character within the AONB and its setting should be conserved, restored, reinforced or created as appropriate to reflect the ambitions of the Kent Downs AONB Management Plan.

## Additional opportunities

**1. Plan for a landscape-scale restoration of the fragmented wetland landscape of the Stour valley and its tributaries, while further managing the NCA's rivers and other wetland habitats, bringing about multiple benefits including climate regulation, biodiversity and improved water quality.**

**For example, by:**

- Adopting a landscape-scale approach to restore, create and re-link remaining wetland habitats (including flood plain and coastal grazing marsh, reedbeds, fens and wet woodland) throughout the Lower Stour Wetlands Biodiversity Opportunity Area (including the Stodmarsh Special Area of Conservation) and the area identified under the Wetland Vision. This will create a robust wildlife network that significantly enhances adaptation to climate change, benefitting landscape and biodiversity while also storing flood waters to aid flood alleviation, improving water quality and increasing carbon storage.

- Restoring natural river morphology where it is of particular benefit to biodiversity to do so, bringing rivers back into continuity with their flood plains and recreating backwaters as a refuge for aquatic species in times of drought. Allowing the seasonal inundation of identified flood plain pastures and wetland habitats, as identified in the River Stour Catchment Flood Management Plan, while also enhancing green infrastructure and footpath access in urban areas (for example around the Cray, Ravensbourne and Darent rivers).

- Creating wide grassland buffer strips to either side of watercourses and running across arable slopes, to provide a buffer to soil erosion and nutrient run-off (especially within the catchment of the Stour, as well as the Cray, Darent and Medway rivers), further aiding a reduction in soil erosion and an improvement in water quality. Encouraging land management practices which enhance soils (such as increasing the levels of organic matter) and improve resilience to climate change.

- Where appropriate, encouraging the fencing of watercourses and alternative drinking provision for livestock – to reduce faecal matter entering rivers. This will reduce the levels of faecal bacteria reaching the WFD-protected Stour Estuary and having a negative impact on the shellfish waters and on the quality of the shellfish flesh. Buffer strips will also aid the reduction of run-off from muck applications, and will hence help to reduce bacteria from faecal matter reaching the rivers – with consequent improvements for water quality.

## Additional opportunities

**2. Plan for a large-scale improvement in access and recreation provision within the Thames Gateway area, and seek opportunities for access improvements throughout the landscape.**

**For example, by:**

- Creating extensive areas of quality green space as part of the Green Grid, providing a continuous network of linked and accessible green space extending from east London to the east of Sittingbourne.
- Creating key recreational nodes for informal recreation, serving a wide range of needs linked to the rights of way network and providing a safe and inviting recreational environment for families.
- Providing sustainable transport links between urban centres and recreation provision in both the wider NCA and the AONB to the south, focusing on a reduction in car-dependency.
- Creating a cohesive network of permissive access throughout the landscape, linking especially to towns and villages, as well as to the North Downs Way, coastal routes and other areas of interest (such as the Blean complex), promoting sustainable access for a wide range of users.

# Supporting document 1: Key facts and data

Total area: 84,832 ha

## 1. Landscape and nature conservation designations

The North Kent Plain NCA includes 2,002 ha of the Kent Downs Area of Outstanding Natural Beauty (AONB), which is 2% of the NCA area.

**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 | Ramsar | Thanet Coast & Sandwich Bay; Stodmarsh Thames Estuary & Marshes; The Swale, Medway Estuary & Marshes | 1,467 | 2 |
| European | Special Protection Area (SPA) | Thanet Coast & Sandwich Bay SPA; Stodmarsh SPA; Thames Estuary & Marshes SPA; The Swale SPA; Medway Estuary & Marshes SPA | 1,094 | 1 |
| European | Special Area of Conservation (SAC) | Sandwich Bay SAC; Stodmarsh SAC; Blean Complex SAC; Thanet Coast SAC Queendown Warren SAC. | 1,700 | 2 |
| National | National Nature Reserve (NNR) | Blean Woods Stodmarsh NNR; Sandwich & Pegwell Bay NNR, High Halstow NNR Swanscombe Skull Site NNR | 986 | 1 |
| | Site of Special Scientific Interest (SSSI) | A total of 34 sites wholly or partly within the NCA | 4,499 | 5 |

**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.*

There are 150 Local sites in the North Kent Plain NCA covering 7,232 ha which is 9% 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 at: 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

| SSSI condition category | Area (ha) | Percentage of SSSI in category condition |
|---|---|---|
| Unfavourable declining | 177 | 4 |
| Favourable | 2,762 | 61 |
| Unfavourable no change | 161 | 4 |
| Unfavourable recovering | 1,398 | 31 |

**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

The area is essentially open, low and gently undulating land. The highest point is 137m, the lowest point is 0.20m below sea level.

**Source: Natural England 2011, North Kent Plain Countryside Character Area description**

### 2.2 Landform and process

The landform of the North Kent Plain was largely created when earth movements resulting from the Alpine Orogeny (mountain-building episode) folded and uplifted the bedrock. Subsequent erosion and some further deposition has taken place since then; although the area was not glaciated during the ice ages, severe erosion took place in the harsh climate at that time and materials were reworked and redeposited. At the coast accretion of sediment is a feature of the area.

**Source: North Kent Plain Countryside Character area description, North Kent Plain Natural Area Profile, British Geological Survey mapping and geodiversity pages from www.naturalengland.org.uk**

### 2.3 Bedrock geology

Coal measures and chalk underlie the North Kent Plain. The Chalk outcrops in Thanet and, to a lesser extent, near the Medway towns and Gravesend. It is exposed in sea cliffs and inland quarries but is often overlain by clay with flint soils. The chalk is overlain by Palaeogene sands and mudstones. Following a marine transgression some 55 Ma, the London Clay - shallow marine sediments was laid down. Overlying the London Clay are the Bagshot, Barton and Bracklesham Beds. These sands and clays were deposited on a large coastal plain.

**Source: North Kent Plain Countryside Character area description, North Kent Plain Natural Area Profile, British Geological Survey maps, the geodiversity pages of www.naturalengland.org.uk**

## 2.4 Superficial deposits

Marine and river alluvium was laid down in the low ground separating the Isle of Thanet from the mainland and along the Stour valley. Fine silty brickeath deposits resulting from dust, wind-blown under cold dry conditions during the ice ages, form an extensive but irregular mantle. The youngest sediments are sands and gravels including marine dune sand and shingle and remnants of plateau gravels and river terrace materials.

**Source: North Kent Plain Countryside Character area description, North Kent Plain Natural Area Profile, British Geological Survey maps, the geodiversity pages of www.naturalengland.org.uk**

## 2.5 Designated geological sites

| Tier | Designation | Number |
|---|---|---|
| National | Geological Site of Special Scientific Interest (SSSI) | 7 |
| National | Mixed Interest SSSIs | 4 |
| Local | Local Geological Sites | 15 |

**Source: Natural England (2011)**

**Local sites are non statutory designations*

- Details of individual Sites of Special Scientific Interest can be searched at: **http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm**

## 2.6 Soils and Agricultural Land Classification

The soils of the North Kent Plain NCA are, for the most part, highly fertile and easily worked. The area contains a large proportion of the Grade 1 agricultural land in the county. Large parts of the NCA are on fertile, freely – draining loams, there are also areas of heavier clays, and less fertile sandy soils.

**Source: North Kent Plain Natural Area Profile**

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 | 22,113 | 26 |
| Grade 2 | 14,949 | 18 |
| Grade 3 | 13,608 | 16 |
| Grade 4 | 2,749 | 3 |
| Grade 5 | 450 | <1 |
| Non-agricultural | 6,734 | 8 |
| Urban | 23,671 | 28 |

**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) |
|---|---|
| Great Stour | 9 |
| Little Stour | 10 |

**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 Darent drains from springs in the Wealden Greensand and passes through the western part of the NCA north into the Thames. The River Medway drains north through the North Downs into the NCA running north into the sea via the Greater Thames Estuary.

### 3.2 Water quality

The total area of Nitrate Vulnerable Zone is 39,048 ha, 46% 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 at:

http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e

## 4. Trees and woodlands

### 4.1 Total woodland cover

The NCA contains 8,699 ha of woodland (10% of the total area), of which 4,651 ha is ancient woodland.

**Source: Natural England (2010)**

### 4.2 Distribution and size of woodland and trees in the landscape

Overall, across the NCA as a whole, woodland is not a prominent feature of the landscape. However, there are discreet and significant areas of woodland confined to pockets of higher ground such as those around Blean and to the west of the area around Shorne and Chattenden. The Blean wood complex supports the largest area of continuous woodland in Kent and is designated as an SAC for it is one of only two localities in the United Kingdom of sub atlantic and medio-european oak or oak-hornbeam forests of the Carpinion betuli. Poplar and alder shelterbelts are characteristic in the eastern part of the NCA.

**Source: North Kent Plain Countryside Character Area description**

http://jncc.defra.gov.uk/protectedsites/sacselection/n2kforms/UK0013697.pdf

### 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 | 7,599 | 9 |
| Coniferous | 750 | 1 |
| Mixed | 51 | <1 |
| Other | 299 | <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 | 3,504 | 4 |
| Planted ancient woodland sites (PAWS) | 1,147 | 1 |

**Source: Forestry Commission (2011)**

## 5. Boundary features and patterns

### 5.1 Boundary features

Poplar and alder shelter belts form a distinctive boundary feature, historically associated with fruit growing areas. Fields in the NCA are often defined by changes in crop type, rather than by hedgerows, with exposed fields common. Although not prominent throughout the NCA, ditches occur in localised areas in the east, notably downstream of Stodmarsh in the Stour Valley.

**Source: North Kent Plain Countryside Character Area description; Countryside Quality Counts (2003)**

### 5.2 Field patterns

Fields of regular patterns and rectangular shapes are typical of the area.

**Source: North Kent Plain 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

Horticulture is still the most prevalent type of farm, despite a drop from 185 to 118 between 2000 and 2009. The number of cereal farms has increased slightly from 85 to 95, though general cropping (124 in 2000 and 91 in 2009) and grazing farm numbers (74 in 2000 and 66 in 2009) have fallen.

**Source: Agricultural Census, Defra (2010)**

### 6.2 Farm size

Farm numbers dropped from 584 to 505 between 2000 and 2009 with all size bands showing a reduction in numbers, though farms of over 100 ha have decreased by only 2. The largest decrease was in farms of <5ha which reduced from 104 to 73.

**Source: Agricultural Census, Defra (2010)**

### 6.3 Farm ownership

2009: Total farm area = 41,360 ha; owned land = 24,891 ha
2000: Total farm area = 41,665 ha; owned land = 25,601 ha

**Source: Agricultural Census, Defra (2010)**

### 6.4 Land use

Cereals are the predominant land use accounting for 34% of a total farmed area of 41,360ha. This is followed by grass and uncropped land at 26%. There are smaller areas of oilseeds (11%), fruit (9%) other arable crops (5%) vegetables (5%) and cash roots (2%).

**Source: Agricultural Census, Defra (2010)**

### 6.5 Livestock numbers

2009: cattle 4,759, sheep 21,798, pigs 2,807
2000: cattle 5,534, sheep 35,613, 4,355

**Source: Agricultural Census, Defra (2010)**

### 6.6 Farm labour

Full and part-time farm labour reduced between 2000 and 2009 with the greatest percentage loss being of part time workers which have declined by 211 (from a 2000 total of 484). Casual/gang labour however has increased by nearly 1,000 to a figure of 2,717 in 2009.

**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

Wetland habitats within the Stour valley in the east of the NCA support a diversity of wildlife and include areas of grazing marsh, reedbeds, lagoons and gravel pits. Stodmarsh National Nature Reserve has the largest reedbed in the South East of England, which supports a range of specialised birds and insects.There are also small areas of unimproved grassland including chalk grassland in Dartford, Gravesend and Thanet and, on the more sandy soils, fragments of acid grassland. Heathland is also found at Dartford Heath. A range of habitats are found along the coast and include chalk cliffs, soft cliffs, intertidal sand and mud, saltmarsh, sand dunes (notably Sandwich Bay), shingle beaches and maritime grasslands. Woodland is confined to pockets of higher ground such as around Shorne, Chattenden and Blean (see woodland section). Wooded heath and grassland form a significant part of the Blean complex.

**Source: Natural Area Profile, North Kent Plain Countryside Character description, North Kent Coast Maritime Natural area**

### 7.2 Biodiversity Action Plan (BAP) 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;

http://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 |
|---|---|---|
| Floodplain grazing marsh | 1,307* | 2 |
| Coastal sand dunes | 472* | 1 |
| Lowland heathland | 77* | <1 |
| Maritime cliff and slope | 93* | <1 |
| Fens | 40* | <1 |
| Lowland meadows | 33* | <1 |
| Lowland calcareous grassland | 27* | <1 |
| Reedbeds | 14* | <1 |
| Mudflats | 6* | <1 |
| Coastal vegetated shingle | 2* | <1 |
| Saline lagoons | 1* | <1 |

**Source: Natural England (2011)**

This data does not take account of the updated Kent Habitat Survey which will be available in 2013.* Please also note that there are known errors in this national dataset. Please refer to the Kent Habitat Survey 2003 (to be superceded in 2013) for a breakdown of habitat type for the North Kent Plain NCA.

- 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

The rural settlement pattern predominantly consists of nucleated villages with low densities of dispersed settlement. Significant urban centres, notably in the West around Greater London and the Medway towns, plus further east at Sittingbourne, Faversham and Canterbury. The coastline of Thanet is also heavily developed particularly around Margate, Broadstairs and Ramsgate. Medieval prosperity is reflected in the buildings of small market towns such as Wingham and Fordwich. The North Kent Plain is a major transport corridor with main roads connecting settlements.

**Source: North Kent Plain Countryside Character Area description; Countryside Quality Counts (2003)**

### 8.2 Main settlements

The main settlements wholly or partially within the North Kent Plain are, Orpington, Swanley, Dartford, Gravesend the cathedral cities of Rochester and Canterbury and towns of Gillingham, Sittingbourne, Chatham and Faversham. Coastal towns include Margate, Broadstairs, Ramsgate and Deal along the Thanet.

**Source: Countryside Quality counts draft historic profile, Countryside Character Area description; Countryside Quality Counts (2003)**

### 8.3 Local vernacular and building materials

High concentrations of pre-1750 farmstead buildings. Aisled barns. Timber frame and weatherboard with brick and plain tile roofs. Oast houses associated with the hop industry found on some farms.

**Source: North Kent Plain draft historic profile, Countryside Character Area description; Countryside Quality Counts (2003)**
http://www.farmsteadstoolkit.co.uk/downloads/jca/JCA%20113.pdf

## 9. Key historic sites and features

### 9.1 Origin of historic features

There is evidence across the North Kent Plain from a range of periods including Paleolithic remains, Bronze Age Barrows and an Iron Age hillfort. There are distinctive Roman remains throughout the area, notably the Roman Saxon shore forts at Richborough and Reculver that mark where the Wantsum channel once separated the Isle of Thanet from the mainland and notably at Rochester and Canterbury, the latter has significant historical interest with the World Heritage site of Canterbury Cathedral, St Augustine's Abbey and St Martin's church, designated in 1988 for its continued significance in the development of Christianity in England, as well as the architectural value of the buildings themselves. Many surviving historical features reflect the area's important role in maritime defence since earliest times. There is an important sequence of coastal defences ranging from the Roman forts, 16th century castles, WWII defences and Chatham naval dockyard and its related defences of international significance.

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

### 9.2 Designated historic assets

This NCA contains the following numbers of designated heritage assets:

- 18 Registered Parks and Gardens covering 630 ha.
- 1 World Heritage Site.
- 167 Scheduled Monuments.
- 5,255 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

- 5.8% of the NCA 4306 ha is classified as being publically accessible.

- There are 1,440 km of Public Rights of Way at a density of 1.7 km per km$^2$.
- There is 1 National Trail within the NCA; The North Downs Way 11.89 km.

**Sources: Natural England (2010)**

**Viewpoint from Windmill Hill in Gravesend, looking towards the Thames.**

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) | 55 | <1 |
| Common Land | 258 | <1 |
| Country Parks | 416 | <1 |
| CROW Access Land (Section 4 and 16) | 561 | <1 |
| CROW Section 15 | 615 | 1 |
| Village Greens | 25 | <1 |
| Doorstep Greens | 18 | <1 |
| Forestry Commission Walkers Welcome Grants | 2,767 | 3 |
| Local Nature Reserves (LNRs) | 461 | <1 |
| Millennium Greens | 0 | 0 |
| Accessible National Nature Reserves (NNRs) | 1,072 | 1 |
| Agri-environment Scheme Access | 7 | <1 |
| Woods for People | 3,114 | 4 |

**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) the lowest scores for tranquility are found in the west of the NCA and the Thanet coast between Whitstable and Herne Bay and around Chatham, Sittingbourne, Faversham and Canterbury. Areas of greatest tranquility are found in the east and are associated with the Blean woodlands, wetland habitats of the Stour Valley and undeveloped areas of the coast.

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

| Tranquillity | Score |
|---|---|
| Highest value within NCA | 34 |
| Lowest value within NCA | -92 |
| Mean value within NCA | -22 |

**Sources: CPRE (2006)**

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

### 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 large areas of the NCA are considered 'disturbed' with major transport corridors and urban development occurring throughout the NCA. A breakdown of intrusion values for this NCA are detailed in the table below.

| Intrusion category | 1960s (%) | 1990s (%) | 2007 (%) | Percentage change (1960s-2007) |
|---|---|---|---|---|
| Disturbed | 43 | 61 | 60 | 17 |
| Undisturbed | 34 | 16 | 12 | 22 |
| Urban | 22 | 23 | 28 | 6 |

**Sources: CPRE (2007)**

Notable trends from the 1960s to 2007 are a decline in the amount of undisturbed land with just 11.7% of the NCA assessed as 'undisturbed'[10], a drop from 34% in the 1960s

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

[10] CPRE Intrusion Map (2007)

## 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)

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 character was largely found to have been maintained between 1993 and 2003, with previous widespread loss generally halted, although loss of traditional orchards and hop gardens is still ongoing.
- Widespread loss and damage to hedges and hedgerow trees due to agricultural intensification, notably Thanet and the North Kent fruit belt, this loss has been less significant in the last 10 years.
- Ancient woodland is confined to pockets of higher ground around Shorne, Chattenden and Blean; there has been no reduction in their extent in the last decade although development pressures have led to the loss of ancient woodland in the Cobham area as a result of HS1 and widening of the A2.
- Major woodland creation in the Blean by the Woodland Trust (Victory Wood) in 2004 has restored an area of woodland on what was previously arable land.
- Dutch elm disease has further affected hedgerow structure, especially in the eastern half of the NCA although known populations of mature elms are still found in Thanet

### Boundary features

- Just 2 per cent of field boundaries within the NCA were covered by an agri-environment scheme between 1999 and 2003 based on an estimated boundary length of 3,121 km. The introduction of Environmental Stewardship (ES) in 2005 has led to an increase in the length of boundary features managed under schemes. As of March 2011, 243 km (8 per cent of estimated boundary length) of hedgerow were managed under ES along with 104 km under ditch management.
- The density of hedgerows increases nearer to the dip slope of the North Downs, but because of widespread loss and damage to hedges due to agricultural intensification, the open character of the landscape means that further losses in the last decade have been minimal.

### Agriculture

- Recent agricultural statistics from 2000 to 2009 show a decrease in the land area of cereals, cash roots, vegetables, hardy nursery stock and grass and uncropped land but an increase in oilseeds and a small increase in fruit production. There has been a notable loss in the variety of crops grown at the individual farm scale. Mono-cropping /block cropping have increased which in conjunction with larger field areas has diluted the traditional smaller patchwork cropping pattern.

- Horticulture is still the most prevalent farm type, despite a drop from 185 to 118 holdings between 2000 and 2009.

### Settlement and development

- There is evidence of development throughout the NCA, notably in the west near London and Medway Towns, plus further east at Sittingbourne and Canterbury and along the coastal hinterland at Thanet, Whitstable and Herne Bay. Particularly since 2000, the character of the area has continued to be transformed by development pressure.

- The development of the Channel Tunnel High Speed Rail Link and widening of the M2 motorway have been major forces for change in the area, and have led to loss of high quality agricultural land, some woodland and SSSI land.

- Industrial and commercial developments including associated pylons and masts have impacted significantly on character, especially in flat, open landscapes such as Thanet and the North Kent fruit belt.

### Semi-natural habitat

- Uptake of agri-environment schemes was above the national average after 2000, with the character of semi-natural habitats largely maintained.

- Since the start of Environmental Stewardship Schemes in 2005, pockets of semi-natural grassland habitats and significant areas of grazing marsh are under management but with some potential still to be realised.

- Most SSSIs are in favourable condition (61 per cent) or, if unfavourable, are mainly recovering (31 per cent).

### Historic features

- Extensive ploughing has caused damage to buried archaeological sites. Thanet, the North Kent fruit belt and the western urban fringe and Hoo peninsula are most affected.

- A number of scheduled and non-scheduled archaeological features have been secured under sensitive management options through Environmental Stewardship in the last 10 years.

### Coast and rivers

- Continuing sea level rise means that coastal erosion remains a possibility and it will continue to affect coastal processes and habitats.
- Rising sea levels are putting pressure on existing flood defences.
- Pressure for new housing is resulting in further urbanisation of the coast.
- The first Kent offshore wind farm was commissioned in 2005 and is visible from the coastline.
- The Countryside Quality Counts study stated that in 1995 the biological and chemical river water quality was most frequently classed as good and very good respectively. However, more recently river water quality has failed to meet either good chemical and/or ecological status in some instances (refer to analysis table). The River Stour has been identified by Defra as a priority catchment.

### Minerals

- The impact of mineral working, including some chalk and widespread gravel extraction in the river valleys remains an important issue with new sites proposed within the Kent Minerals and Waste Plan[11].

**The Medway with Upnor Castle in the background.**

[11] Kent Minerals and Waste Development Framework, Scheme 2010–2014 (December 2011)

## Drivers of change

### Climate change

- The UKCP09 climate change projections suggest that by 2050 we may see an increase of winter mean temperature of 2.2° C, an increase in summer mean temperature of 2.8° C and a change in precipitation distribution, with a decrease of 19% in summer and increase of 16% in the winter throughout the Southeast (central estimate under a medium emissions scenario, UKCP09). Potential effects include:
  - Alteration of woodlands (notably the Blean Complex SAC), including change in woodland composition as a result of hotter, drier summers, with competition from invasive species and loss of beech as a result of dieback Due to soil moisture stress and wind blow due to increased storminess[12]. Climate change may result in increased pressure from introduced pests and tree diseases.
  - Deterioration in wetland habitats due to summer drought (affecting wet woodland, fens, reedbeds, grazing marsh and wet meadows). This could have particular implications for the lower Stour Valley wetlands.
  - Effects on traditional orchards, including potential tree/crop loss due to drought stress and waterlogged soils, as well as reduced fruit crops due to warmer winters and tree loss to wind throw.
- Rising sea levels will put pressure on existing flood defences, this could lead to higher tidal defences being built, or opening up opportunities for more managed realignment and flood storage schemes, which could include the creation of new habitats.
  - Accelerated erosion of coastal cliffs, with associated loss of cliff-top grasslands.
  - Appearance of species and crops adapted to new climatic conditions, with a longer growing season potentially leading to double cropping.
  - An increase in flash flooding events.
  - Pressure upon the water supply due to summer drought exacerbated by increased demand for abstraction.

[12] Natural England Character Area Climate Change Project, Natural England (April 2009)

### Other key drivers

- The Thames Gateway and housing demand in Kent puts pressure on towns throughout the NCA (especially in the western urban fringe, Thanet and North Kent fruit belt). It will be important to safeguard high quality agricultural land and make the most of green infrastructure opportunities in development planning.

- The restoration of proposed and existing large waste disposal landfill sites and disused mineral workings will continue to be a significant force for change upon the character of the North Kent plain, especially in the western urban fringe. This may provide opportunities for improved recreation and creation of semi-natural habitats.

- There are particular opportunities for re-creation of wetland habitat in Wantsum, plus restoration of ditch network in Wantsum Channel and Lower Stour Marshes.

- The conservation and enhancement of the orchard landscape where characteristic, for example the North Kent fruit belt.

- There is likely to be increased pressure for food production in the future as a result of a national drive for greater self-sufficiency in food and the high quality agricultural land that characterises this NCA. Landscape impacts are likely from polytunnels and larger packhouse and glasshouse developments.

- A requirement for increasing renewable energy generation could have an impact on the NCA, including an increased pressure for the growth of biomass crops (Defra's maps show predominantly high potential Miscanthus yields and medium potential short rotation coppice yields throughout the area). This may also present opportunities for woodland management and woodland expansion, with traditional coppice used as a renewable energy source.

- The proposal for a Lower Thames Crossing could have an impact on the western part of the NCA.

- Increasing pressure on water resources is likely to have impacts on the NCA in the future. It will be important to work in partnership to tackle the challenges faced.

- Ongoing partnership working, seeking to deliver benefits for the natural environment and linking communities with their local heritage and wildlife.

# 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.

**Orchards are a characteristic feature of the North Kent Plain.**

| Statement of Environmental Opportunity | Food provision | Timber provision | Biomass energy | Water availability | Genetic diversity | Climate regulation | Regulating soil erosion | Regulating soil quality | Regulating water quality | Regulating water flow | Pollination | Pest regulation | Regulating coastal erosion | Sense of place/inspiration | Sense of history | Tranquility | Recreation | Biodiversity | Geodiversity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ecosystem service | | | | | | | | | | | | | | | | | | |
| **SEO 1:** Maintain the historic character and long tradition of a farmed landscape, creating habitats to establish more resilient and coherent ecological networks within the farmed and peri-urban areas, benefitting biodiversity and geodiversity, and helping to regulate water and soil quality. Protect traditional practices including the longstanding associations of the fruit belt, maintaining a strong sense of place and reinforcing Kent's reputation as the Garden of England. | o | ↔ * | ↗ ** | ↑ | ↑ ** | ↗ * | ↑ ** | ↑ ** | ↑ * | ↗ * | ↑ ** | o | ↔ *** | ↑ *** | ↗ *** | ↗ * | ↔ * | ↑ ** | ↔ * |
| **SEO 2:** Plan for and manage the effects of coastal change, by allowing the operation of natural coastal processes and improving the sustainability of current management practices, to maintain and enhance the local landscape character and the area's biodiversity assets. This can lead to habitat creation, flood-risk reduction to built-up areas, and opportunities for recreational activity. | o | ↔ * | ↔ * | ↗ * | ↔ ** | ↑ * | ↔ * | ↔ * | ↔ * | ↔ * | ↗ ** | ↔ * | ↑ *** | ↑ *** | ↑ *** | ↗ * | ↑ ** | ↑ ** | ↑ ** |

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

Dark plum = national importance; mid plum = regional importance; light plum = local importance

| Statement of Environmental Opportunity | Ecosystem service | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Food provision | Timber provision | Biomass energy | Water availability | Genetic diversity | Climate regulation | Regulating soil erosion | Regulating soil quality | Regulating water quality | Regulating water flow | Pollination | Pest regulation | Regulating coastal erosion | Sense of place/inspiration | Sense of history | Tranquility | Recreation | Biodiversity | Geodiversity |
| **SEO 3:** Protect the distinct wooded areas of the landscape, particularly through the management of nationally important, ancient semi-natural woodlands, increasing the area of broadleaved woodland where appropriate, while increasing the connectivity of the mosaic of associated habitats notably wooded heath and semi-improved grassland while enhancing the recreational resource. | o | ↑ ** | ↑ *** | ↗ ** | ↔ ** | ↗ ** | ↗ ** | ↗ * | ↗ * | ↗ * | ↗ ** | ↔ * | ↔ *** | ↑ ** | ↗ * | ↑ *** | ↑ *** | ↑ *** | ↔ *** |
| **SEO 4:** Protect and enhance the strong character and heritage of the urban areas. Plan for the creation of significant new areas of green space and green corridors to provide a framework for new and existing development in urban areas and along major transport routes. | o | ↔ * | ↗ * | ↗ * | ↔ ** | ↗ * | ↔ ** | ↔ ** | ↑ ** | ↑ ** | ↗ * | ↔ * | ↔ ** | ↔ ** | ↗ * | ↗ * | ↑ * | ↑ *** | ↔ * |

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

Dark plum = national importance; mid plum = regional importance; light plum = local importance

## Landscape attributes

| Landscape attribute | Justification for selection |
|---|---|
| Low and gently undulating open landscape, with rolling landform more pronounced in the east. | ■ Gently undulating landscape with expansive views characterises the NCA.<br>■ Modern development (including lines of pylons) has a significant impact upon the open landscape. |
| High quality, fertile loam soils characterised by arable use, plus characteristic orchards and other horticultural crops in central and eastern areas. | ■ A productive agricultural landscape defines the NCA, with characteristic orchards and other horticultural crops reinforcing Kent's reputation as 'the Garden of England'.<br>■ Intensively cropped arable fields provide a diverse range of colours, textures and patterns in the landscape.<br>■ The wider arable landscape of the coastal and valley marshes supports large numbers of wintering birds.<br>■ Traditional orchards are still in decline and further threatened by climate change. |
| Geology dominated by Palaeogene clays and sands underlain by Chalk which outcrops principally in Thanet. | ■ Important Chalk and Tertiary exposures, including Thanet Coast SAC and dry mineral workings of high geological interest. Pieces of skull (Swanscombe man) have been found from gravel pits close to Ebbsfleet and these are some of the earliest fossil human remains found in the British Isles and a site which is considered one of the most important Pleistocene localities in Britain. Abbey Wood SSSI is particularly important for its fossils of Tertiary mammals.<br>■ Thanet is a unique outlier of chalk plateau, unified in agricultural character as a result of fertile loams. |
| Extensive area of ancient woodland around Blean, plus smaller ancient woodlands further west. | ■ The Blean is the largest ancient broadleaved woodland in southern Britain.<br>■ The woodlands in the west of the NCA provide important areas of green space and are key sites for biodiversity. They include Chattenden Woods, Shorne and Ashenbank Woods, Great Crabbles Wood, Darenth Wood, Northward Hill, and Crofton Woods. |
| Poplar and alder shelterbelts further east, notably around orchards. | ■ Distinctive features that help to characterise areas further east. |

| Landscape attribute | Justification for selection |
|---|---|
| The Stour and its tributaries draining eastwards into the North Sea, with associated wetland habitats including areas of grazing marsh, reed beds, lagoons and gravel pits. | ■ Grazing marshes once occupied most of the low-lying land of the lower Stour valley and Wantsum Channel, and south to Deal.<br>■ Remnant wetland habitats now fragmented, and include areas of international importance (Stodmarsh is designated as an SAC for its population of Desmoulin's whorlsnail, a Ramsar for internationally important wetland invertebrates and bird populations and an SPA for its waterfowl interest).<br>■ An area identified as having significant future wetland potential[13].<br>■ The Stour and its tributaries are important features of the eastern part of the NCA. |
| Rivers to the west, including the Medway, Darent and Cray | ■ Rivers further west are important features in the landscape and often represent green corridors and linear access within urban areas.<br>■ A section of the Medway Estuary flows through the NCA and is dominated by the urban conurbations of Chatham and Gillingham. It has a strong military and maritime history. |
| Coastal habitats, including chalk cliffs around Thanet, soft cliffs between Herne Bay and Reculver and at Pegwell Bay, intertidal sand and mud, saltmarsh (especially in Pegwell Bay), sand dunes (notably Sandwich Bay), shingle beaches (at Minnis Bay and near Deal), brackish lagoons and maritime grasslands on cliff-tops and sea walls. | ■ International designations: Thanet Coast SAC, Thanet Coast and Sandwich Bay SPA, Sandwich Bay SAC, Thanet Coast and Sandwich Bay Ramsar, The Swale SPA and Ramsar.<br>■ Significant implications for coastal habitats due to sea level rise.<br>■ The coastline provides an important resource for recreation and tourism.<br>■ The coast is now heavily protected where cliffs have been graded and sea walls built, which has led to a loss of coastal habitats. |
| Fragments of unimproved grassland supporting a range of uncommon plants, including those associated with woodland on clay and sandy soils and chalk grassland in Dartford, Gravesend and Thanet and south east of Chatham. | ■ Queendown Warren SAC, area of unimproved chalk grassland, now an uncommon habitat throughout England.<br>■ Wooded heaths and grassland form part of the Blean complex and targeted for restoration. Given the predominance of arable farming and urban development, these remaining sites are important habitats supporting a range of species. |

[13] *A 50-year Vision for Wetlands, England's Wetland Landscape: securing a future for nature, people and the historic environment,* Natural England (2008) (URL: www.wetlandvision.org.uk/userfiles/File/Wetland%20Vision%20Document%20Website%20Version.pdf)

| Landscape attribute | Justification for selection |
|---|---|
| Dispersed rural settlement pattern with surrounding fields defined by a dense network of narrow lanes, with medieval small market towns of Wingham and Fordwich and significant historical and cultural interest of Canterbury. | ■ Historic settlement patterns and towns represent an important surviving feature of the heavily developed NCA.<br>■ National and international cultural and historical renown of Canterbury, containing the World Heritage Site of Canterbury Cathedral and Precincts, St Augustine's Abbey and St Martin's Church. |
| Important historic assets are found throughout including Palaeolithic remains. Roman remains are a feature across the area, including at Canterbury, Reculver and Richborough. Other historic elements include the Historic Dockyards at Chatham, military remains, historic parks, buildings and archaeology. | ■ Richborough and Reculver are Roman Saxon Shore forts, reflecting the time when the Wantsum channel separated Thanet from the mainland.<br>■ Rich maritime and military heritage of urban areas to the west of the NCA linked to the River Medway and proximity to the Thames Estuary, including sites such as Chatham Historic Dockyard, Fort Amherst and Upnor Castle.<br>■ Much of the area's archaeology has been lost due to tillage of arable land. |
| Public rights of way and access including areas of green space in urban areas | ■ Recreation and access is supported by links to the North Downs Way National Trail and 1,440 km of public footpaths (equivalent to 1.7 km per km$^2$), including the Saxon Shore Way, Thanet Coastal Path, Medway Valley Walk, Darent Valley Path, Stour Valley Walk and Wantsum Walk, while 0.4 per cent of the NCA is open access land. Further significant recreational opportunities are offered by the Blean woodland complex northwest of Canterbury, as well as by recreational facilities provided along the coast and in urban areas. |
| Small areas of tranquillity (12 per cent of NCA is classified as undisturbed[14]), predominantly in the east along the coast and associated with the Blean woodlands. | ■ Surviving areas of tranquillity represent an important resource within the context of the heavily urbanised NCA. |

[14] CPRE Map of Tranquillity (2006)

## Landscape opportunities

- Protect the open character of the gently undulating landscape and the remaining areas of tranquillity, along with the dispersed rural settlement pattern, defined by a dense network of narrow lanes.
- Protect the area's surviving historic environment that includes important Roman remains across the area and at Canterbury, Richborough and Reculver, as well as the significant military and maritime heritage assets in the west of the NCA, historic parks and traditional buildings including oast houses.
- Protect and manage the coastal habitats and features that include chalk cliffs (around Thanet), soft cliffs, intertidal sand and mud, saltmarsh (especially in Pegwell Bay), sand dunes (notably Sandwich Bay) and shingle beaches (at Minnis Bay and near Deal), including areas of international importance (Sandwich Bay and Thanet Coast SACs/SPA), promoting opportunities for natural regeneration / migration where appropriate or possible and/or creating compensation habitats in areas of managed realignment to ensure no net loss of habitats such as saltmarsh and mudflats.
- Manage and significantly enhance the area's existing broadleaved woodland cover, including the extensive internationally important ancient woodland that forms part of the Blean Complex SAC and the areas of ancient woodland that occur further west, including through the re-introduction of coppice management and the restoration of planted ancient woodland sites (PAWS), as well as restoration of small farm woodlands throughout and poplar and alder shelterbelts further east, creating robust wildlife networks better adapted to climate change whilst also enhancing landscape character.
- Manage and enhance the productive agricultural landscape, including the creation of arable field margins and conservation headlands that further help to support the area's farmland bird populations, as well as through the conservation of traditional orchards characteristic of the North Kent fruit belt and the Hoo peninsula.
- Plan for a landscape-scale restoration of the fragmented wetland landscape of the Stour valley and its tributaries, achieving condition and creating wetland habitats including floodplain and coastal grazing marsh, reedbeds, fens and wet woodland throughout the Lower Stour Wetlands Biodiversity Opportunity Area (including Stodmarsh SAC) and the area identified under the Wetland Vision, to create a robust wildlife network that significantly enhances adaptation to climate change as well as landscape.

- Plan for the restoration of numerous disused and active mineral workings and landfill sites integrating them into the landscape through beneficial after-uses, including the extensive creation of semi-natural habitats (benefiting landscape and biodiversity) whilst safeguarding high quality agricultural land and soil resources, and retaining and where possible, enhancing exposures of geological importance.

- Plan for the creation of significant new landscapes that provide a framework to new and existing development and its associated infrastructure, including major transport routes such as the high-speed Channel tunnel rail link, and including areas of broadleaved woodland (where appropriate) that help to provide a screening function and significantly benefit landscape as well as biodiversity.

**The famous Historic Dockyard at Chatham, now a popular visitor attraction.**

**Surviving traditional cherry orchard where management has been funded by Stewardship schemes.**

## 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 the 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** | Soils are mainly highly fertile deep, rich loams within the NCA containing a large proportion of the county's Grade 1 agricultural land.<br><br>Proximity to continental Europe provides a climate conducive to arable cropping and horticulture. | Food provision is an important service in the NCA and the fertile and easily worked soils make this one of the most productive agricultural areas in the south of England producing significant amounts of arable crops (mainly cereals as well as oilseeds and cash roots) and notably fruit and other horticultural crops. | Regional<br><br>National | An increase in arable/horticultural (intensification/cultivation) production should lead to an increase in production but could potentially lead to a decrease in value of other ecosystem services such as soil and water regulation if this is not achieved sustainably with a reduction in these other services threatening future yields.<br><br>Changes in agriculture as a result of climate change, such as increased production or growing of different crop types could have consequences for the natural environment, with increasing pressure on soils, water and habitats and possible impacts on the appearance of the landscape[15]. | There is an opportunity to manage the agricultural landscape in sustainable ways to improve soil and water regulation and improve long term viability of agriculture and yields, protecting the natural assets of the area.<br><br>There is also an opportunity to conserve remaining traditional orchards characteristic of North Kent fruit belt and Hoo peninsula, supporting local traditional fruit production and also benefitting genetic diversity.<br><br>There is also an opportunity to safeguard soils and high quality agricultural land when planning development. | **Food provision**<br><br>**Regulating soil erosion**<br><br>**Regulating water quality**<br><br>**Biodiversity**<br><br>**Genetic diversity** |

[15] *Assessing the Potential Consequences of Climate Change for England's Landscapes: North Kent,* Natural England http://publications.naturalengland.org.uk/publication/4980659898548224?category=5978088475197440

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Timber provision** | Existing woodland – coniferous and broadleaved. | There is potential for timber provision from the existing woodland resource | Local | Management of existing woodlands for timber products could have multiple benefits, including biodiversity and benefits for the local economy.<br><br>Given the high proportion of good quality agricultural land a significant increase in this service through woodland planting is unlikely and would impact on the open, expansive views which characterise the NCA. However, small scale woodland planting for timber products may be beneficial where appropriately sited and provide social, economic and environmental benefits. | There are opportunities to manage existing woodlands for timber products. This may require the stimulation of local markets, providing an incentive to woodland managers.<br><br>Currently conifer plantations occur on existing planted ancient woodland sites (PAWS). There is therefore an opportunity for reversion of conifer plantations back to broadleaved woodland. | **Biodiversity**<br><br>**Climate regulation** |

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Biomass energy** | Existing woodland | The woodlands of the NCA offer some biomass potential<br><br>The potential yield from miscanthus could be high, although it is medium around Dartford and Rochester towards Greater London.<br><br>There is medium potential for short rotation coppice yields, with patches of low potential towards London and around the coast where crops would be exposed to salt laden winds.[16] For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website. | Local | Bringing unmanaged woodlands under traditional coppice management will improve outputs from the existing woodland resource. This could have multiple benefits, including biodiversity gains, climate regulation, amenity improvements and benefits to the local economy.<br><br>There is some scope to accommodate new biomass crops but this would need to be balanced as any major expansion of for example short rotation coppice could affect sense of place if it became a major component of the open and expansive landscape. However, if sited appropriately it could deliver several ecosystem services such as flood flow management, water quality improvements by trapping sediment and nutrients, use for grey water treatment from sewage works and preventing run–off from road infrastructure. | There is an opportunity to bring unmanaged woodlands under management to provide local sources of biomass. Creating a supply and demand chain will help secure sustainable management and opportunities should be sought to link woodland managers with those who have a demand (existing or potential) for wood fuel products.<br><br>There are potential opportunities for both short rotation coppice and Miscanthus to be accommodated but these would need to be located appropriately within the landscape. | **Biomass energy**<br><br>**Biodiversity**<br><br>**Climate regulation** |

[16] Energy crop guidance and yield maps (URL: www.defra.gov.uk/foodfarm/growing/crops/industrial/energy/opportunities/se.htm)

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Water availability** | Rivers including Great Stour, Little Stour and Darent<br><br>Principal and secondary chalk aquifers | Chalk aquifers underlie the NCA with significant groundwater abstraction.<br><br>In Kent, 73% of the public water supply is taken from groundwater, notably from chalk aquifers[17].<br><br>The NCA has poor quantitative status throughout . According to the river basin management plan all of the groundwater bodies in this NCA are expected to have poor quantitative status in 2015[17].<br><br>The Catchment Abstraction Management Strategies indicate that much of the NCA is either over abstracted or over-licensed[17]. | Regional | Water resources in this NCA are already under pressure and population increase, development pressures and climate change will bring new challenges both to society and the environment[17].<br><br>Management of water abstraction will help to reduce the effects of low flows on wetland biodiversity and improve water quality.<br><br>Land management practices and restoration of wetland habitats are likely to improve infiltration and aid aquifer recharge.<br><br>The nature of agriculture in this NCA (fruits, arable crops) means that there is a demand for irrigation. Climate change may increase the challenges of meeting water demands and irrigation requirements in summer months[18]. | There is an opportunity for integrated water management throughout the NCA to slow runoff and increase infiltration to aquifers. (For example increasing soil organic matter, reducing soil compaction and re-creation of semi-natural habitats).<br><br>Opportunities for significant restoration and creation of wetland habitats adjacent to watercourses within the Stour will aid aquifer recharge. Naturally functioning floodplains will help regulate water availability and respond more effectively to extreme weather events which may occur as a result of climate change. | **Water availability**<br><br>**Regulating water quality**<br><br>**Biodiversity**<br><br>**Climate regulation** |

[17] *The State of Water in Kent*, Environment Agency (June 2012)
[18] *The Stour Catchment Abstraction Management Strategy*, Environment Agency (2003)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Climate regulation** | Woodlands<br><br>Intertidal habitats including mudflats<br><br>Wetland habitats | Climate regulation through soils is not significant as most are mineral soils that can be low in organic matter.<br><br>Distinct areas of woodland play a role in carbon sequestration and may also be important for carbon substitution.<br><br>Intertidal mud (although localised) is an important source of carbon sequestration. | Local | There is potential to increase the carbon sequestration and storage capacity of the soils by increasing organic matter and reducing the frequency/area of cultivation. This could lead to benefits to soil quality, water quality and biodiversity, as could restoration and expansion of wetland habitats which could also enhance the organic content of associated soils.<br><br>Ensuring no loss of intertidal habitats will be important to ensure no loss of natural carbon sequestration associated with these habitats.<br><br>In this urban NCA there is potential to encourage an increase in urban trees. This could be particularly beneficial in response to climate change, with urban trees providing summer shade and a cooling function.<br><br>Managed woodlands are also important for carbon substitution, through their use as a renewable energy. | Restore and expand wetland floodplain and coastal habitats throughout the Stour catchment and along the coast, to conserve and enhance the organic content of associated soils/mud that provide a store of carbon.<br><br>Where habitats are due to be lost to coastal squeeze, compensation habitats should be sought where natural regeneration is not possible or practical.<br><br>There is potential to increase organic matter levels through management intervention on arable land and reduction in inputs can also play a role. Improvements in soil structure will also help improve water quality.<br><br>Opportunity for creation of new woodland areas where appropriate and not in conflict with landscape or historic environment objectives, along with good management of existing woodlands which will have a role in carbon sequestration and substitution. | **Climate regulation**<br><br>**Water regulation**<br><br>**Biodiversity** |

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating soil erosion** | Semi natural vegetation cover<br><br>Hedgerows | Soil erosion is a local issue in some areas.<br><br>The freely draining loamy soils (52%) have enhanced risk of soil erosion. In the case of the slightly acid soils this is exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted, while this soil type also has the potential for wind erosion.<br><br>The freely draining very acid sandy and loamy soils (8%) can erode easily where vegetation is removed.<br><br>The freely-draining base-rich soils and loamy/clayey soils with impeded drainage (12%) may be susceptible to capping and slaking, increasing the risk of soil erosion, the latter are easily compacted by machinery if accessed when wet, increasing the risks of soil erosion by surface water run-off, especially on steeper slopes. | Regional | Increasing regulation of soil erosion would require an expansion of the existing service by taking high risk areas out of cultivation. This could also lead to benefits for biodiversity by reducing sedimentation in rivers. Creation of arable field margins and conservation headlands could also have multiple benefits. Soil management to build up soil organic matter improves soil structure, reduces the risk of soil compaction and therefore erosion. | There is an opportunity to improve soil structure and increase the organic matter content of the soils through management interventions. This will help increase water filtration (aiding aquifer recharge) and reduce the risk of soil erosion.<br><br>Opportunity to create areas of semi-natural habitat and low-input grasslands (including grassland buffer strips) to minimise soil compaction, allow dense vegetation to improve water retention and minimise soil runoff and improve water quality. | **Regulating soil erosion**<br><br>**Regulating soil quality**<br><br>**Biodiversity**<br><br>**Regulating water quality**<br><br>**Regulating water flow** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating soil quality** | Soils<br><br>Freely draining lime rich and slightly acid loamy soils<br><br>Slightly acid but base –rich loamy and clayey soils<br><br>Permanent grassland and other semi natural habitats | The freely draining lime-rich loamy soils (12%) are typically of moderate depth and droughty but due to their calcareous nature have a degree of natural resilience.<br><br>These and the freely draining slightly acid loamy soils (40%) may be valuable for aquifer recharge, requiring the maintenance of good structural conditions to aid water infiltration and requiring the matching of nutrients to needs to prevent pollution of the underlying aquifer.<br><br>The slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (14%) may suffer compaction and/or capping as they are easily damaged when wet, which in turn may lead to increasingly poor water infiltration and diffuse pollution as a result of surface water run-off. | Local | The nature of intensive agriculture means the current contribution to this service could be improved. All of these soils have potential for increased organic matter levels through management interventions. Maintaining quality of soils will help safeguard future yields and wider ecosystem service provision. | Opportunity to improve management practices, for example through minimal tillage, improving soil structure, relieving soil compaction and aiding water infiltration (which will also have the benefit of reducing run-off and associated flood risk and aiding aquifer recharge).Crop diversity within the farming system could also be beneficial for maintaining soil quality. | **Regulating soil quality**<br><br>**Regulating water quality**<br><br>**Regulating soil erosion**<br><br>**Regulating water flow** |

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating water quality** | Rivers<br><br>Wetlands<br><br>Semi natural habitats | For parts of the NCA the groundwater chemical status is good but with some exceptions, including the Isle of Thanet which is poor due to nitrates, pesticides and non-agricultural chemicals.<br><br>The river Stour is part of the Catchment Sensitive Farming Initiative. The current chemical quality for the stretch of the Great Stour within the NCA is good but with moderate ecological potential. Outside of the NCA ecological quality is poor or bad but chemical quality remains good[19].<br><br>The River Darent has good ecological and chemical status[20].<br><br>The Cray has moderate ecological potential and is currently failing on chemical quality[20].<br><br>Other surface waters across the NCA are generally either of moderate or poor ecological status or ecological potential in the case of artificial or heavily modified waterbodies. | Regional | In some parts of the NCA current contributions of this service are low and there is potential to improve the water quality of rivers and groundwater.<br><br>Management interventions across catchments (such as buffer strips restoration of wetland habitats and enhancement of soil quality) will improve water quality by minimising the impact of eutrophication from run –off. The creation of buffer strips will also aid the reduction of runoff from muck applications and hence help reduce bacteria from faecal matter reaching the rivers. These management interventions can also benefit biodiversity, especially where they create wildlife corridors. | Work in partnership and across sectors to improve the quality of surface waters and groundwater of the NCA, especially those currently failing to meet Water Framework Directive objectives for good ecological status (surface water) or good status (groundwater).<br><br>Significant restoration and creation of semi-natural wetland habitats adjacent to watercourses within the Stour catchment – a Defra priority, plus creation of grassland buffer strips running across slopes to help limit diffuse pollution from agriculture and thus improve the water quality of rivers.<br><br>Opportunities to manage farmland under Catchment Sensitive Farming principles to improve surface and groundwater quality. In particular, this will help protect the WFD protected Stour Estuary and negative impacts of poor water quality on the shellfish waters and quality of the shellfish flesh. | **Regulating water quality**<br><br>**Regulating soil erosion**<br><br>**Regulating water flow**<br><br>**Regulating Soil quality**<br><br>**Biodiversity** |

[19] *South East River Basin Management Plan,* Annex A: Current state of waters, Environment Agency (December 2009)
[20] *Thames River Basin Management Plan,* Annex A: Current state of waters, Environment Agency (December 2009)

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating water flow** | Wetland habitats including reedbeds<br><br>Rivers<br><br>Surface waters<br><br>Semi natural floodplain habitats | The Stour and North Kent Rivers Catchment Flood Management Plans provide an overview of the flood risk in the area. In the west this includes river flooding along the Shuttle and Cray and surface water flooding in urban areas. In the east flood risk is associated with the River Stour and flash flooding in coastal towns[21].<br><br>Tidal flooding poses the greatest risk to areas such as Dartford, with extensive flood defences occurring here and along the River Medway. Coastal flood defences occur along the NCAs main body of coast between Whitstable and Deal. | Regional | Increased regulation of river flooding would help to reduce flood risk, increase biodiversity and water availability. It could potentially lead to a change in cropping/agriculture by increasing vegetation cover/extension of semi-natural habitats especially wetland habitats. Excessive run-off may be reduced by improvements in soil quality and other land management interventions.<br><br>Habitats such as saltmarsh, mudflats and sand dunes provide a flood protection service. Rising sea levels will put pressure on existing flood defences, this could lead to higher tidal defences being built, or opening up opportunities for more managed realignment and flood storage schemes, which could include creation of new habitats.<br><br>Wet woodland, traditional woodland and short rotation coppice may also play a role in regulating water flow if suitably placed and designed. | Opportunity for restoration and creation of favourably managed wetland habitats along the floodplains of the Stour catchment, bringing rivers back into continuity with their floodplains to allow for more regular flooding of identified areas.<br><br>Green infrastructure opportunities (including enhanced soil management within urban areas) may play a role in supporting the resilience of communities to flooding, with potential changes around communities with new areas of woodland or wetlands. This may enhance the aesthetic appeal of local landscapes to the community and provide new opportunities for recreation[22]. | **Regulating water quality**<br><br>**Regulating soil erosion**<br><br>**Regulating water quality**<br><br>**Water availability**<br><br>**Biodiversity**<br><br>**Climate regulation** |

[21] *North Kent Rivers Catchment Flood Management Plan,* Environment Agency (2009); *River Stour Catchment Flood Management Plan,* Environment Agency (2009)

[22] Draft report – *Assessing the Potential Consequences of Climate Change for England's Landscapes: North Kent,* Natural England (not yet published)

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Regulating coastal flooding and erosion** | Coastal habitats | Accretion of sediment is a feature of the area demonstrated by the closure of the Wantsum channel and the sand and mud on intertidal areas. However, erosion is also an issue with stretches of coastline retreated some 4 to 5 km since roman times, although largely now contained by coastal defence work, continuing sea level rise and increased storminess means that erosion is still a possibility.<br><br>Shoreline management plan identifies preferred policies of allowing cliff retreat on the undefended chalk cliff frontages (including Thanet Coast SAC), which will benefit the natural cliff habitats and intertidal chalk reef although may lead to loss of cliff-top grasslands.<br><br>Low-lying coastal features and habitats including saltmarsh, mudflats and shingle beaches are liable to be lost to 'coastal squeeze' over the longer term, (policies of Hold the Line are identified along a number shingle beach frontages).<br><br>The preferred policies identified in the Shoreline Management Plan along the sand dune frontage at Sandwich Bay SAC will allow the dunes to function freely for the foreseeable future[23]. | National | The coastline is diverse with an urban hinterland, agricultural land, designated sites, geological, historic, landscape and recreation assets.<br><br>Natural regeneration / migration where appropriate and/or creating compensation habitats in areas of managed realignment will help ensure no net loss of habitat. | There is an opportunity to plan and manage for the effects of coastal change, allow the operation of natural coastal processes and the creation of new habitats, to maintain and enhance local landscape character, biodiversity and improve sustainability of current management practices and to reduce flooding to built areas. | **Regulating coastal flooding and erosion**<br><br>**Biodiversity** |

[23] *The Isle of Grain to South Foreland SMP Review,* Halcrow Group Ltd (2010)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Pollination** | Habitats including orchards, unimproved grassland, woodlands, wooded heath, scrub | Small areas of lowland heath provide a source of nectar for pollinating insects within the NCA along with areas of unimproved grassland.<br><br>The Blean complex is a significant source of pollinators along with the other small woodlands.<br><br>The area is characterised by productive agricultural fields and intensification of agriculture has led to a loss of pollinator habitat. | National | In a productive agricultural area including orchards and soft fruit pollinators are critical for the future of insect dependent crops and increases in this service may be required in order to provide greater options for future cropping.<br><br>This service could be increased by restoration and creation of wetland habitats, conservation headlands and arable field margins. This could have a beneficial impact on biodiversity by linking habitats and creating network of habitats in close proximity.<br><br>Management of traditional and commercial orchards to provide habitats for increased numbers of pollinators would be beneficial. | Opportunities to enhance the agricultural landscape through creation of habitat mosaics where forage and nesting sites are provided for pollinators such as conservation headlands, arable field margins and wildflower mixes. This will have additional environmental benefits.<br><br>Opportunities for a landscape scale approach which provides the necessary connectivity and extent of habitats to sustain populations of pollinators. There is potential to do this by; restoration of grassland / heathland and woodland habitats within the Blean complex; wet grassland habitats along the floodplains of the Stour, and other patches of unimproved grassland on cliff tops and associated with the chalk. | **Pollination**<br><br>**Food provision**<br><br>**Biodiversity**<br><br>**Regulating soil erosion**<br><br>**Regulating water flow** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Genetic diversity** | National Fruit Collection at Brogdale | The collection includes a variety of apple, pear, plum, cherry, bush fruit, vine and cob nut cultivators[24]. | International | Brogdale forms part of an international programme which seeks to protect the genetic resources of our plants. This helps to ensure that we are able to adapt to changing conditions and respond to the challenges associated with climate change, pests or disease. Protecting our genetic resources is also critical for food security[24]. | Opportunities to conserve the genetic diversity held within the national fruit collection and long term security of the collection.<br><br>Opportunities for enhanced research, teaching, public access and awareness. | **Sense of place/ inspiration**<br><br>**Genetic diversity**<br><br>**Sense of history** |

[24] Brogdale: Home of the National Fruit Collection (URL: www.brogdale.org/)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
|---|---|---|---|---|---|---|
| **Sense of place/ inspiration** | Strong local historic associations<br><br>Ancient woodlands<br><br>Coast | Sense of place is provided by expansive views over the open and extensive gently undulating agricultural landscape, with the predominance of orchards and other horticultural land uses that give rise to central areas being known as the 'Garden of England'.<br><br>Local variations give rise to more distinctive sense of place, notably the extensive ancient woodland around Blean, the wetland habitats associated with the Stour valley and the coastal features that include the chalk cliffs of Thanet and the dune systems of Sandwich Bay.<br><br>Medway has strong associations with naval history and Charles Dickens, who lived in the NCA and whose novel, Great Expectations was set in this area of North Kent. | Regional | The North Kent Plain has a very distinctive agricultural landscape and the orchards, soft fruits and horticulture re-enforce Kent's reputation as the Garden of England. Climate change may result in changes in the physical landscape and natural and historic assets, such changes may affect sense of place.<br><br>The NCA acts as a major communications corridor, with extensive 20th century development particularly evident within the flat, low-lying landscape. The NCA is heavily urbanised, notably in southeast London, but also the Thames and Medway Towns and the coastal towns of Thanet. Future development should seek to protect and enhance the assets which provide a strong sense of place. | Maintain the historic character and long tradition of the farmed landscape, including associations with fruit growing. Opportunities to enhance habitats which provide a sense of place, especially the ancient woodlands, wetland habitats, coastal features and other areas of greenspace<br><br>There is an opportunity to further promote the assets of this NCA to encourage tourism and the socio-economic benefits which may result. | **Sense of place/ inspiration**<br><br>**Sense of history**<br><br>**Biodiversity** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
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| **Sense of history** | Range of historic assets including evidence of occupation since the Palaeolithic<br><br>Roman remains<br><br>Historic parks<br><br>Maritime and military heritage<br><br>Farming traditions<br><br>Historic settlement and vernacular<br><br>Ancient woodlands | Sense of history is associated with the rich variety of historic assets including the Swanscombe Skull, (some of the earliest human remains found in the UK), Neolithic finds, Iron Age sites and distinctive Roman remains throughout including the Roman Saxon Shore Forts at Richborough and Reculver. Extensive remains also occur at Canterbury a World Heritage Site that includes Canterbury Cathedral, St Augustine's Abbey and St Martin's Church.<br><br>The urban environments also have a strong sense of history, some with medieval cores, others of early modern date, but all with clearly visible successions of later development.<br><br>The NCA has a strong maritime and military history associated with the coastal towns and the Medway Estuary.<br><br>History is also sensed through the varied field and routeway patterns (including Watling Street Roman road) and strong associations with fruit growing. | National | Many heritage assets are at risk or susceptible to loss or damage. Many scheduled interests are identified on the scheduled monuments at risk register, with arable ploughing identified as the main risk. This is particularly notable on Thanet, where soils are highly fertile and productive.<br><br>The extensive historical remains provide opportunities to link communities with their local heritage and to further our understanding of past human activity. It is therefore important to continue to protect, research and interpret the historic environment.<br><br>Increasing sense of history could lead to increased sense of place by reinforcing the historic character of the landscape.<br><br>This NCA offers a significant resource for tourists, from coastal towns to a range of historic features which are accessible to the public. This is important for the local economy. | There is an opportunity to protect, interpret and promote the historic assets of the area and where appropriate improve access for local communities and tourists. Opportunities for improved management should be identified and encouraged, especially where sites are at risk.<br><br>Given the development pressure in the area there is an opportunity to encourage the use of vernacular architecture and materials in new developments whilst conserving traditional buildings such as oast houses.<br><br>Maximise the economic benefits of promoting the heritage sites as visitor attractions. | **Sense of history**<br><br>**Sense of place/ inspiration**<br><br>**Recreation** |

| Service | Assets/ attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
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| **Tranquillity** | Coast<br><br>Extensive ancient woodland around Blean<br><br>Remnant wetland habitats of the Stour Valley | Tranquillity is a scarce resource within the area given the dominance of the urban environment towards the west and the large coastal settlements, with just 11.7% of the NCA assessed as 'undisturbed'[25], a drop from 34% in the 1960s. The majority of undisturbed land now occurs to the east of Canterbury and along the Sandwich Bay coast. Senses of tranquillity are likely to be associated with the extensive ancient woodland around Blean and blocks of ancient woodland further west, as well as the remnant wetland habitats of the Stour Valley and the undeveloped areas of the coast. | local | Development pressures are likely to put increased pressure on the tranquillity of the NCA. It will be important to incorporate good green infrastructure into existing and new developments.<br><br>Opportunities to increase tranquillity or avoid further losses through for example woodland buffers of urban areas may have multiple benefits if sited appropriately. | Opportunities to provide significant broadleaved woodland buffers, where appropriate, around intrusive development (including urban areas, major transport corridors and disused landfill and mineral sites), whilst maintaining existing areas of tranquillity to the east of Canterbury and along stretches of the coast, as well as those associated with the ancient woodlands of the Blean, other woodland blocks in the west, and the wetlands of the Stour valley. | **Tranquillity**<br><br>**Sense of place/ inspiration**<br><br>**Biodiversity** |

[25] CPRE Intrusion Map (2007)

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
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| **Recreation** | National Trail<br><br>Footpaths<br><br>Coast<br><br>Woodland<br><br>Open access land<br><br>NNRs | Recreation and access is supported by links to the North Downs Way National Trail and 1,440 km of public footpaths (equivalent to 1.7 km per km$^2$), including the Saxon Shore Way, Thanet Coastal Path, Medway Valley Walk, Darent Valley Path, Stour Valley Walk and Wantsum Walk, while 0.4% of the NCA is open access land. Further significant recreational opportunities are offered by the Blean woodland complex northwest of Canterbury, as well as by recreational facilities provided along the coast.<br><br>Green infrastructure is important for local communities of urban areas. | National | There are excellent opportunities to improve recreation in this NCA. This needs to be sympathetically delivered ensuring the continued protection and enhancement of biodiversity interests.<br><br>The recreational resource allows people to actively engage in, value, and enjoy the natural environment. The benefits of this include improved health, community cohesion through local action, income through tourism and recreation, and a contribution to a low carbon economy through increased sustainable leisure use. | Opportunities to enhance access throughout the area, creating new permissive access that links settlements to historic features, national trails and other areas of interest including the coast and the Blean complex, as well as to significant new areas of recreational greenspace that form part of new landscapes surrounding urban areas providing a significant local recreational resource. | **Recreation** |

| Service | Assets/attributes: main contributors to service | State | Main beneficiary | Analysis | Opportunities | Principal services offered by opportunities |
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| **Biodiversity** | Diverse range of habitats including those with International and National designations and a network of local wildlife sites. | The NCA contains 5 SPAs, 5 SACs, 5 Ramsar sites and 4,500 ha of land that is nationally designated as SSSI. As of March 2011 61% of SSSI were in favourable condition but there are still unfavourable recovering, unfavourable no change and a small area of unfavourable declining units.<br><br>A range of BAP priority habitats are found across the NCA[26].<br><br>Biodiversity interest is notable around the coast (relating to SPA, SAC and Ramsar sites) ancient woodland sites and wetlands including the largest reedbed in the south east of England at Stodmarsh. | International / National | The coastal habitats SPA, SAC, Ramsar and SSSI will be at risk from sea level rise. Natural regeneration / migration where appropriate and/or creating compensation habitats in areas of managed realignment will help ensure no net loss of habitat. The sand dunes at Sandwich bay are particularly vulnerable to sea level rise due to their fixed state and inability for the habitat found here to be established elsewhere.<br><br>Wetland habitats of Stodmarsh in the Stour Valley (SSSI, SAC, SPA and Ramsar) are in favourable or unfavourable recovering condition. The habitats support an assemblage of rare invertebrates and provide wintering and breeding habitats for wetland bird species, maintaining these habitats in good condition will be essential for supporting biodiversity and other services such as pollination, soil, water and climate regulation. | Work in partnership to strengthen and create ecological networks across the North Kent Plain landscape. Linking, buffering and creating new wildlife sites in rural and urban areas.<br><br>Use the local information available in Kent such as habitat and opportunity mapping to help inform action on the ground and delivery of landscape scale projects.<br><br>Opportunities to significantly restore, create and re-link the fragmented wetland habitats of the Stour Valley to enhance biodiversity and create a robust and extensive wildlife habitat with enhanced adaptation to climate change.<br><br>In addition, opportunities to improve the condition of ancient semi-natural woodland and heathland and grassland habitats of the Blean complex, restoring and re-linking habitats. Also opportunities to improve condition of other ancient woodlands through appropriate management.<br><br>**Continued on next page...** | **Biodiversity**<br><br>**Regulating water quality**<br><br>**Regulating coastal erosion**<br><br>**Regulating soil quality**<br><br>**Regulating water flow**<br><br>**Climate regulation** |

[26] This document has been published prior to the release of the updated Kent Habitat Survey which will be available in 2013

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| **Biodiversity** | | | | Continued management and maintaining extent will be important to maintain structural diversity and the value of these distinct areas of woodland for biodiversity. Increased risks associated with tree diseases need to be recognised and managed. | **... continued from previous page**<br><br>There is an opportunity to increase the mosaic of habitats to enhance heterogeneity which will allow species to take advantage of local changes in microclimate within habitat types. The creation of transitional habitats between coastal and terrestrial habitats will also provide increased variability of habitats and microclimates[32].<br><br>Also opportunities to maintain and protect the habitats along the coast, including saltmarsh, intertidal sand and mud, sand dunes, shingle, brackish lagoons, cliff top grasslands and cliffs. Promoting opportunities for natural regeneration where appropriate and/or creating compensation habitats to ensure no net loss where habitats will be lost to coastal squeeze[27].<br><br>Opportunities to use the biodiversity resource for education programs, linking communities with their natural environment. | |

[27] Draft report – *Assessing the Potential Consequences of Climate Change for England's Landscapes: North Kent,* Natural England (not yet published)

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| **Geodiversity** | Geology exposed in inland pits and quarries<br><br>Coastal cliffs | There are 11 nationally designated Geological Sites within the NCA (including 4 mixed interest) and 15 local geological sites. The majority of these are manmade exposures in inland pits.<br><br>The chalk cliffs are of special interest for the exposed geological strata and the 23 km of coastal cliffs around Thanet form one of the longest continuous undefended stretches of chalk cliff in Britain[28]. | National | Designated sites provide important and accessible sections allowing the interpretation, understanding and continued research into the geodiversity of the NCA. Exposure of these features also makes a positive contribution toward sense of place, sense of history and recreation. | Restoration and appropriate management of disused mineral workings integrating them into the landscape through creation of semi – natural habitats whilst retaining geological interests and providing a recreational resource. | **Geodiversity**<br><br>**Biodiversity**<br><br>**Recreation**<br><br>**Sense of place/ inspiration**<br><br>**Sense of history** |

[28] North Kent Coast, Maritime Natural Area, English Nature (1997)

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