National Character Area profile:

127. Isle of Wight

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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.

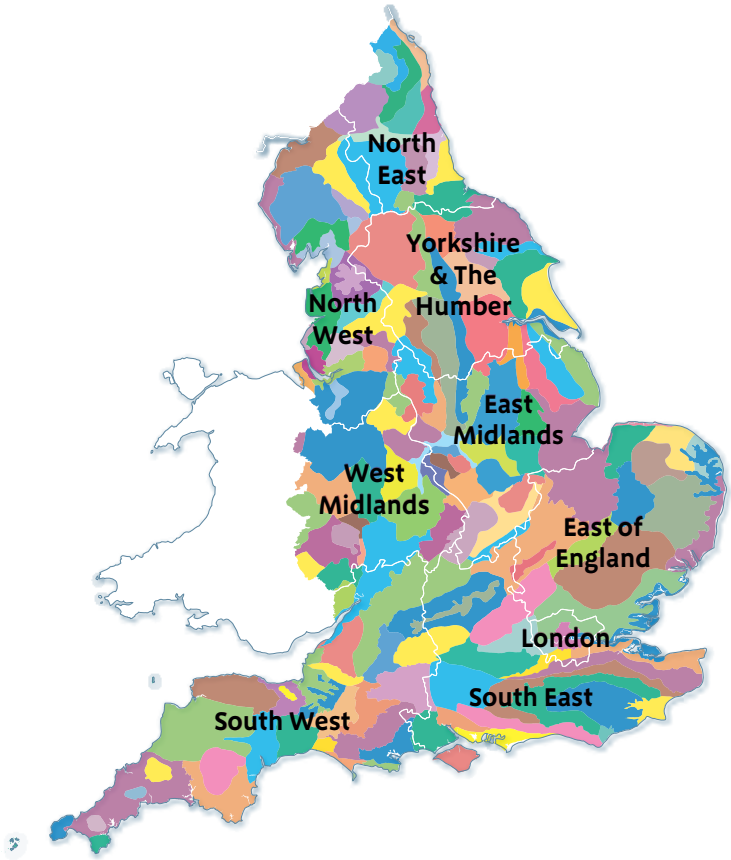
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and 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 Isle of Wight is an Island situated south of England, separated from the mainland by the Solent, with the English Channel forming its southern boundary. Covering an area of 380 square kilometres, with a coastline that runs for 92 kilometres, it is England's largest Island. The chalk spine crossing from east to west stretches out at the western tip in a series of three chalk stacks known since medieval times as the Needles. The Island exhibits, at a small scale, the key characteristics of much of lowland England, from farmed arable coastal plains to pastures and woodland, and from steep chalk downs to diverse estuarine seascapes and dramatic sea cliffs and stacks.

Almost 50 per cent of the Island falls within the Isle of Wight Area of Outstanding Natural Beauty, divided into five separate parcels, and around half of the coastline is recognised as Tennyson and Hamstead Heritage Coasts. The Island has a range of internationally, nationally and locally important nature conservation sites, including Special Areas of Conservation, Newtown National Nature Reserve, 41 Sites of Special Scientific Interest and 395 Local Wildlife Sites (Sites of Importance for Nature Conservation) that are recognised for their important habitats and species, including maritime cliff and slope, coastal and flood plain grazing marsh, lowland heathland, saline lagoons, intertidal mudflats, coastal sand dunes, intertidal flats and seagrass beds, and coastal vegetated shingle. The Solent and Southampton Water is designated as a Ramsar site and as a Special Protection Area, as it supports internationally important numbers of wintering waterfowl and various rare invertebrates and plants. Some species are unique to the Island or are thriving due to the protection given to them by the Solent, including the red squirrel, dormouse, bat species, Glanville fritillary butterfly and early gentian.

The Island's non-tidal river valleys are short and narrow in comparison with those of neighbouring mainland counties. All the major rivers flow northwards and contribute to the estuarine coastline. Minor rivers flow southwards and give rise to characteristic steep coastal valleys or 'chines'. Public water supply comes from surface and groundwater sources, including three major aquifers and the rivers Test and Itchen in Hampshire.

Although most of the Island is rural, there are a wide range of settlements, including small villages, medieval planned and post-medieval towns, 19th-century seaside resorts and 20th-century development. The locally quarried Bembridge limestone is a characteristic building material in many villages. The Isle of Wight possesses some of the best sites in Europe for dinosaur remains, as well as a diverse and often abundant source of other fossils. The Island also contains a wealth of visually prominent prehistoric burial mounds or barrows, usually found on the chalk ridge.

Many recreation activities are possible, including walking, cycling, horse riding, sailing, surfing and windsurfing. Internationally renowned Cowes Week is the longest-running regatta in the world. The Island's beaches and seaside resorts, such as Ryde, provide a range of recreational opportunities while Alum Bay and Blackgang Chine offer more traditional seaside family experiences. Poets such as Tennyson and Keats were inspired by the Island's landscapes, which continue to inspire poets and artists. Feelings of tranquillity, escapism and inspiration are particularly associated with the elevated chalk downs, coastal landscapes, and lack of noise and light pollution; most of south-east England's 'dark skies' are found in the area.

Click map to enlarge; click again to reduce.

The vertical multi-coloured Bracklesham Group sandstone strata at Alum Bay are a distinctive geological feature.

Statements of Environmental Opportunity

- **SEO 1:** Safeguard the diversity of features, designated habitats, rich geology and geomorphological processes along the Island's coastline, including chalk cliffs, rias, estuaries, chines, the Needles chalk stacks, Alum Bay and the Undercliff landslip area. Where possible, allow for natural coastal processes to operate unimpeded, resulting in the creation of new habitats, conserving and enhancing landscape character, and benefiting biodiversity and the historic environment. Promote the Island's internationally important geodiversity, providing interpretation to enhance educational and recreational opportunities.

- **SEO 2:** Conserve the chalk downs and their species-rich chalk grassland and other semi-natural habitats and the agricultural land to the north and south with its pattern of fields, hedgerows, woodlands and rivers. Maintain and restore the natural function of river catchments and farmland habitats at a landscape scale to bring benefits in terms of reducing soil erosion, improving soil quality, improving water availability and quality in rivers and aquifers, regulating water flow, enhancing biodiversity and supporting farming and food provision.

- **SEO 3:** Protect the long, open views, the high levels of tranquillity and dark skies, and the diversity of the landscape and seascape, through enhancing access to and interpretation of the wealth of natural and heritage assets and sustainable recreational opportunities, including the world famous sailing, the range of beaches and the walking trails.

- **SEO 4:** Manage and enhance the historic character of the Island's landscapes and settlements and reinforce and enhance the existing settlement structure as part of any sustainable development, encouraging the use of local materials, ensuring that high-quality green infrastructure is incorporated into all scales of development, and enhancing access, climate change mitigation and flood management.

Description

Physical and functional links to other National Character Areas

As an Island National Character Area (NCA), the Isle of Wight has fewer links to neighbouring NCAs than those on the mainland; however, there are still some close geological links, as the Island was historically part of the mainland before sea levels rose and the Island was created. The Island is separated from the mainland by the Solent, a sheltered body of water bordered on the mainland by the New Forest and the South Coast Plain NCAs.

The Island's ports provide access to and from the mainland.

The geology of the Island, being structurally part of the Hampshire Basin, mirrors that across the Solent. The Palaeogene sediments – the Hamstead Beds and Bembridge Marls, and the Barton and Bracklesham Groups – of the north of the Island complement those of the New Forest, to which the Island was connected before rising sea levels created the Western Solent.

Chalk forming the steep belt of the Isle of Wight monocline out-crops along the central spine of the Island from Culver Cliff in the east to the Needles in the west. This structure continues westwards to the Isle of Purbeck, where it forms the Purbeck Hills, creating a unifying link with the South Purbeck NCA.

Access from the mainland is provided from Portsmouth in the South Coast Plain NCA, Southampton in the South Hampshire Lowlands NCA and Lymington in New Forest NCA. Around a quarter of the Island's public water supply is dependent on a pipeline that runs from the mainland under the Solent carrying water from the rivers Test and Itchen in South Hampshire Lowlands NCA.

The Isle of Wight is within the sediment cell that operates between Selsey Bill and Portland and encompasses all NCAs with a coastal frontage from the Isle of Portland NCA to the South Coast Plain NCA. These are linked by physical coastal geomorphological process and sediment movement.

There are long views from the chalk ridge backbone of the Island and the high chalk cliffs across the Western Solent to the New Forest NCA, to the open coast of Dorset Heaths NCA, to Old Harry Rocks in South Purbeck NCA and as far as the Isle of Portland NCA on a clear day. Looking north from the chalk backbone there are views across to the naval barracks of Gosport and the Spinnaker Tower, which overlooks Portsmouth Harbour, and the industrial skyline of Southampton Water. On a clear day, views from Culver Down extend along the Sussex coastline as far as Worthing, and there are distant views of the South Downs. Similarly, views to the Island's coastline are afforded from the various vantage points in nearby NCAs on the mainland.

Key characteristics

- This is a small-scale Island landscape, with an intimate feel but with often sudden and dramatic views of the sea. The close relationship of the area to the sea has been a vital ingredient of the Island's cultural heritage since prehistoric times.
- The Island has a varied landscape as a consequence of its geological history. A central chalk ridge divides the Island on an east–west axis. The northern half is characterised by low-lying Tertiary clays overlain in places by gravel-capped ridges. To the south, as well as Chalk, ridges of the Upper Greensand overlie Gault, the Lower Greensand and the Wealden Beds, the clays of which give rise to a dissected plain.
- The south-west coastline is defined by soft, slumping cliffs and chines (steep-sided valleys); the south-east coastline consists of extensive sandy beaches, with the Undercliff to the far south of the Island. The north coast consists mainly of cliffs and is shaped by numerous harbours, estuaries, creeks, salt marshes, tidal mudflats and shingle beaches.
- The main north-flowing rivers flow through deep gaps in the central chalk ridge before joining the Solent. The south-flowing rivers flow along chines, steep sided valleys that cut through the coastal cliffs to the sea.
- Woodland cover varies, with pockets of ancient woodland interposed with small copses, woodland pastures and large plantations. Most of the ancient woodland is found on the northern clays and estuaries.

The south flowing rivers have created Island 'chines', steep sided valleys, where the river cuts through cliffs to the sea.

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Key characteristics continued...

- The southern coastal plain is an open, intensively managed, arable farmland with large fields, few trees, and relict hedges. The open character and maritime influence give an exposed, wind-blown feel.
- The character of the northern pastures is determined by dairy farming, which has created the predominantly lush, green, irregular fields bounded by mature hedgerows.
- The Island has a nationally significant concentration of chalk grassland sites. Chalk downs are characterised by open, rolling arable lands, with remnant unimproved grassland on the steeper and usually higher areas. Some remnant heathland/acidic pasture exists in a vale on a band of Greensand between the two ranges of chalk downs.
- Hedgerows are the predominant boundary feature throughout – with variations in field size and pattern.
- Ancient woodland, chalk grassland, soft cliffs, and estuarine and other coastal habitats are the Island's key semi-natural habitats. A range of other locally important habitats are represented. Some species are unique to the Island or are thriving due to the buffer provided by the Solent.
- Small, linear villages connected by winding lanes are located at the base of the Chalk. Victorian seaside resorts, estates and villas are concentrated along the coast.
- The larger settlements include Newport and Ryde. Urban development is spreading, with waste disposal sites, extensive holiday and industrial developments and caravan parks blurring the edge of settlements.
- Local limestones and sandstones were traditional building materials. Victorian brick buildings are common, and a few ancient buildings are roofed with a combination of limestone slabs and tile upper courses.
- The Island has great time depth, with evidence of Palaeolithic societies, a rich Roman heritage, medieval towns and parks and Victorian architecture.
- The Island's three main ports of Yarmouth, Cowes and Fishbourne link the Island to mainland England, with smaller harbours at Bembridge, Newport and Ryde. The Island has a railway connecting Ryde to Shanklin, and a network of roads, with a circular route around the coast.

Isle of Wight today

The Island contains a range of landscapes, from farmed arable coastal plain to wooded dairy pasture, and from steep chalk downs to diverse estuarine seascapes and dramatic sea cliffs and stacks. The open character and maritime influence give an exposed, wind-blown feel, with the sea and sky dominating the character and many views on this varied Island.

The Island's many beaches and traditional seaside resorts offer a range of recreational activiities.

A central chalk ridge of steeply inclined strata divides the Island on an east–west axis. At Tennyson Down, the advancing sea has carved the ridge into the precipitous cliffs and distinctive stacks known as the Needles. The northern half of the Isle of Wight is characterised by low-lying Tertiary clays overlain in places by gravel-capped ridges. In some areas, coastal erosion has caused slumping, resulting in heathland-dominated cliff edges and gorse or wooded slopes giving way to sections of bare, unstable clay. To the south of the central chalk scarp, ridges of the Upper Greensand overlie Gault, the Lower Greensand and the Wealden Beds, the clays of which give rise to a dissected plain. The presence of the now-tilted waterproof clay underneath the sandstone has resulted in some of the most extensive landslips in Europe. Short, south-flowing streams arise from the foot of the chalk scarp and cross the plain to the south-west coast, where they have cut deep ravines, or 'chines', in the soft Wealden and Lower Greensand beds of the unstable cliff-line.

The Undercliff off the southern coast of the Isle of Wight is the largest area of rotational landslip in western Europe. Here, Greensand and chalk-topped cliffs tower above a series of terraces that run down to low coastal cliffs.

The undeveloped coastline of Newtown in the north-west is a natural estuary, which allows the coastline to evolve with natural processes such as sea level rise and climate change. The coastline supports a mixture of intertidal mudflats and marshes, ancient woodland and coastal heath. On the north coast the harbours, creeks, coastal salt marshes and intertidal mudflats are fringed by woodland, and the grazing marshes and reedbeds stand in stark contrast to the high, vertical cliffs and stacks that are a key feature of the eastern and western tips. The majority of the coastline is undefended and is therefore subject to coastal processes.

The Island's main rivers, namely the Medina and the Eastern Yar, rise near the southern coast and flow northwards to the Solent through deep gaps in the central chalk ridge. In each case the downstream section has been submerged by post-glacial sea level rise to form a drowned river valley, or 'ria'. These rivers are often fringed by low willow scrub bounding the unimproved pasture and relic drainage channels. The Island's rivers are short and narrow in comparison with those of neighbouring mainland counties. There are three major aquifers on the Island, which are located within the Greensand and the Chalk; they are all over-licensed.

The central chalk ridge and the high southern downs support a variety of land uses, including calcareous grassland pasture, arable cultivation, ancient hanger woodlands, scrub and commercial forestry. Where the Chalk or Greensand is capped by gravels, heathland-type communities (gorse, bracken and heather) thrive. True heathland, however, is scarce on the Island and is largely concentrated at Golden Hill and Headon Warren and on Ventnor Downs. Beech and ash woodland and coppice are supported on the northern slopes of the open downs, and there are some coniferous plantations on the southern slopes.

North of the chalk spine on heavy clay soils there is a mosaic of small pasture fields, woodland and dense hedges. Here there are numerous small woodland blocks and a few large plantations, such as the extensive Parkhurst Forest, a relict wood pasture with several ancient semi-natural woodlands and restored plantations on ancient woodland sites.

In contrast, the more varied geology of the fertile southern lowland part of the Island supports a patchwork of large, open fields, often distinguished by their reddish brown soils. The coastal plain to the south offers sweeping views across the low and intensively farmed arable landscape of large, regular, open fields. These are bounded by a sparse, scrubby network of hedges, with sporadic wind-profiled trees. Horticulture, which is largely concentrated in east Wight, plays a major role in the Island's economy, with fields of vegetables and flowers interspersed by a small number of orchards.

The River Yar rises near the south coast and flow northwards to the Solent through deep gaps in the central chalk ridge.

Almost half of the Island lies within the Isle of Wight Area of Outstanding Natural Beauty (AONB), spanning five fragmented parcels, and approximately half of the coastline is recognised as Tennyson and Hamstead Heritage Coasts. A range of internationally, nationally and locally important nature conservation sites cover around 70 per cent of the Island. The north coast forms part of the Solent European Marine Sites, and the Solent and Southampton Water is designated as a Ramsar site and as a Special Protection Area (SPA). Here internationally important numbers of wintering waterfowl, important breeding gull and tern populations and assemblages of rare invertebrates and plants such as lichens are found. The Island also contains a number of Special Areas of Conservation (SAC), including Newtown National Nature Reserve (NNR); a total of 41 Sites of Special Scientific Interest (SSSI) fall partly or wholly within the NCA. The coasts of the Island, particularly along the north, are of estuarine importance and are biologically rich. Some species are unique to the Island or are thriving due to the protection given to them by the Solent. These include the red squirrel, dormouse, bat species, Glanville fritillary butterfly, field cow-wheat, early gentian and wood calamint.

The Island contains a wealth of visually prominent prehistoric burial mounds or barrows, predominantly found on the chalk ridge. Evidence of historic land use is reflected in Roman settlements such as Brading and medieval settlements such as Newtown, as well as the variety of field enclosures dating from the medieval period. Important buildings within the landscape include Carisbrooke Castle, Osborne House and an array of medieval churches. There is a rich history of boat building, which was prominent in west and east Cowes, as well as relicts of the salt-making industry along the north coast.

Although 84 per cent of the Island is rural, there are a wide range of settlements, including small villages and dispersed settlements, medieval planned towns, post-medieval towns, 19th-century seaside resorts and 20th-century developments. The settlements are dispersed, with the main concentrations around Newport in the centre and along the east coast from Cowes in the north to Ventnor in the south. Greensand is the most common building material; it characterises the villages that are found at the base of the chalk downs. Many of the settlements tend to be small and linear, developed originally as cottages along streets. The southern half of the Island is less intensively developed than many other areas. The exception to this is the Undercliff, an area on the southern coast where a mild microclimate, fine views and a secretive landscape made it a popular place to live during Victorian times. There are many grand Victorian houses and grounds with a scatter of exotic plants. The stone-built villages, constructed from locally quarried sandstone and limestone, commonly feature tiles as a traditional roofing material. A few ancient buildings are roofed with a combination of limestone slabs and tile upper courses. Elsewhere, brick is the principal building material, and thatched roofing is also prominent.

Mineral extraction on the Island includes chalk for agricultural lime and for construction fill, gravel and building sands

Many recreation activities are afforded by the Island, including walking, running, cycling, horse riding, sailing, surfing, windsurfing and fishing. Cowes Week is the longest-running regatta in the world, and the Island's beaches provide a range of traditional seaside activities.

The landscape through time

The oldest exposed rocks of the Island date back some 120 million years to the Cretaceous Period, a time of 'greenhouse' conditions when sea levels were very high. What is now the Isle of Wight was then a broad alluvial plain through which meandering rivers flowed, forming a seasonal wetland. The sands and muds of these wetlands now form the Island's Wealden sediments, which are one of the richest sources of dinosaur bones in Europe. The alluvial plain was eventually submerged by rising sea levels under which the Lower Greensand, Gault Clay and Upper Greensand were deposited in shallow seas that had spread over southern England. The overlying Chalk, composed of the skeletons of billions of microscopic plankton and containing irregular flint nodules, now forms the Island's central backbone. It was deposited in a deepening warm, tropical sea when sea levels were at their highest.

About 60 million years ago, uplift of the land and subsequent erosion led to the removal of parts of the Chalk. For the next 30 million years the shoreline of the sea constantly shifted as sea levels changed. The northern part of the Island was sometimes under a warm, shallow sea, while at other times it was a low-lying swamp and marsh crossed by streams and dotted with lakes. Under these conditions a succession of clays, sands and limestones were laid down. These Palaeogene beds have given rise to a region of generally low hills with generally gentle slopes down to the Solent, although steeper landslipped cliffs occur in places, especially on the north-west coast.

About 30 million years ago, the land was uplifted and subsequently the whole rock sequence was buckled by earth movements associated with the formation of the Alps far to the south. A combination of these earth movements and the reactivation of a deep-seated fault resulted in some of the originally horizontal strata being pushed into an almost vertical position at the Purbeck–Isle of Wight monocline.

During the Quaternary – the last 2 million years – deposits laid down have mainly consisted of alluvium and river terrace deposits laid down by fluvial processes, and clay-with-flints. At the end of the last ice age about 10,000 years ago, the Island became separated from the mainland when the sea level rose, and the sub-tundra landscape of the Island gave way to birch, pine and hazel scrub. Much of what is now the Island became covered in deciduous forest.

Evidence suggests that woodland clearance began sometime after 4,000 BC by stone-age communities, and greatly accelerated by the Bronze Age and Iron Age (c. 1000 BC to 43 AD). The lighter soils of the Chalk and Greensand along the coast, plus the freely draining gravel caps in the north of the Island, attracted many early settlements. As populations expanded, further areas of woodland were cleared, creating pastoral grassland on the downs, while clearance and over-farming on the sands and gravels commonly created heathland. By Roman times most of the woodland had been cleared from the south, although in the north extensive areas of woodland remained, with human occupation concentrated on hill tops where more freely draining soils occur. Clearance of the forest cover allowed the chalk grasslands, heathlands and areas of neutral grassland to spread from woodland glades, steep chalk slopes and cliffs. These open, grazed habitats dominated the Island's landscape for many centuries. Systematic quarrying of stone and the manufacture of bricks also began with the Romans.

In post-Roman times, the oak woods of the north of the Island came to be managed for timber through a need for coppiced poles, fencing and firewood. The Isle of Wight was an independent Anglo-Saxon kingdom until conquered by Wessex and converted to Christianity in 686 AD. After the Norman conquest, the Island was ruled by quasi-independent lords who built Carisbrooke Castle on the site of a Saxon fortress. In 1293 AD the Island came under control of the Crown, which inherited a mixed agricultural landscape: a mosaic of woodland, pasture, meadows and arable fields, with sheep and farmed rabbits grazing the open pasture of the downs.

By the Middle Ages, areas of woodland that survived early forest clearances were managed to maintain populations of deer within an open, grazed woodland or wood pasture, such as Parkhurst Forest. Most of the Island's woods were managed as coppices in which trees were regularly cut to supply straight poles. This management created woodlands with an abundance of mature trees, with woodland glades and heathland preserved by deer and stock grazing.

By Tudor times, seven deer parks had been created, including the King's Park of Watchingwell (considered to be one of England's oldest deer parks). During and following the Tudor period, land was enclosed by Parliamentary Enclosure Acts, and in the 19th century improvements in drainage allowed heavier soils to be worked.

In the 16th century, heathland and acid grassland was one of the most dominant landscape types, covering about a quarter of the Island. Much of this was subject to later enclosure and conversion to arable and improved pasture, both on a piecemeal basis and as a result of planned enclosure in the 18th century and later; Parkhurst Forest, for example, was enclosed by Parliament in 1812.

Tourism has long been an important part of the history of the Island, and from 1796 there was a dedicated ferry service across the Solent. Mainland visitors were drawn by the special visual qualities of the landscape, and the Island was a significant location for the Picturesque Movement.

The development of the railways enlivened interest and was directly responsible for the growth of 'new' towns such as Ryde, Sandown, Shanklin and Ventnor. The royal family's move to Osborne promoted further Victorian development, including an array of villas and gardens, particularly along the Undercliff and at Ryde. The growth of Ryde also destroyed an important series of sand dunes known as Ryde Duver.

For most of the 20th century, the Island's economy was based on seaside tourism, manufacturing, ship-building and farming. Tourism remains significant, and the Island is home to niche manufacturing industries. The quality of the landscape was recognised by conservation bodies from 1922 when land was first acquired by the National Trust. Almost half of the Isle of Wight was designated an Area of Outstanding Natural Beauty in 1963.

Osborne House in East Cowes is the former royal residence of Queen Victoria.

There have been many changes in the landscape and distribution of habitats since the 1960s. Increased agricultural production resulted in most unimproved grassland being converted to improved pasture or arable land. Once extensive areas of chalk grassland have been reduced to largely isolated fragments on the steepest and most inaccessible slopes. More recently the agricultural pattern was further diversified as market gardening and horticulture played a significant role in the agricultural economy.

Modern communications infrastructure includes Ventnor Down Radar Station and television masts on the downs at Rowridge and Chillerton. There are also the remains of Island-wide railway infrastructure, mostly consisting of disused tracks, often used as rights of way or cycle tracks. Some parts of the network remain operational, including the electric line from Ryde Pier Head to Shanklin and the Havenstreet steam railway between Wootton and Smallbrook Junction.

Ecosystem services

The Isle of Wight 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 Isle of Wight NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision:** The geology, temperate climate and diversity of landform have given rise to a mixed patchwork of agriculture. Agricultural census data from 2010 indicates that the major farm types are cereals and grazing livestock, with some dairy and specialist pigs. However, the sunny climate also gives rise to vineyards and niche crops such as garlic, chilli and asparagus.
- **Water availability**: There are three major aquifers on the Isle of Wight, all of which are over-abstracted. The largest abstraction is for public water supply and comes from surface and groundwater. Extra need for water is met by the importing of water from the rivers Test and Itchen in Hampshire through an under-sea pipeline, which supplies about a quarter the Island's needs. Agriculture and horticulture are important economic activities that are reliant on water resources for irrigation, but most growers have constructed or are constructing winter-fill reservoirs.
- **Genetic diversity**: The Island's sunny climate affords suitable growing conditions for a range of more non-traditional crops such as garlic. The Island is now England's largest specialist garlic grower, supplying all areas of the mainland.

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

- **Climate regulation:** Biological carbon storage in this NCA is limited because of the relatively small areas of mature woodland and wetlands, although there is some peat in the latter. The majority of the Island's soils are mineral soils, which can be low in organic matter where they are under continuous arable cultivation. Some of the flood plain soil types include small areas of peaty soils, while some coastal soils may have more organic-rich topsoils all of which capture carbon. The woodland cover also contributes to the capture of atmospheric carbon dioxide.
- **Regulating water quality**: The water quality of much of the Eastern Yar and several smaller rivers are classed as of moderate ecological quality. Water quality in the Medina is good, but Rodge Brook near Yarmouth is classed as being of bad ecological quality. The southern coastal water has good ecological quality, but the entire Solent and northern coast is only moderate. This is largely due to high levels of nitrogen, which cause excessive growths of macro-algae (green seaweed) in the estuaries and harbours. Groundwater is of good chemical quality throughout most of the NCA, apart from a small but significant section in the south-east, where pesticide pollution is causing poor chemical status.

- **Regulating coastal erosion**: The coast is of particular significance to this Island NCA for tourism, coastal towns and villages and supports a rich diversity of geological features and coastal habitats. The geology of the coast has responded to marine erosion to produce a cliff-line that varies greatly in terms of erosion rates and landslide activity. The south coast is particularly vulnerable to storm waves from the Atlantic.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** Sense of place is defined by the diversity of this Island landscape, which represents a microcosm of much of southern lowland England within one small area. The coastline, half of which has Heritage Coast recognition, contains an unparalleled array of internationally important geology, geomorphology and habitats, ranging from the chalk stacks of the Needles and the multi-coloured sands of Alum Bay through to the vegetated landslips of the Undercliff and the estuarine habitats of the north coast. The high quality of the landscape is recognised through the designation of about half of the Island as the Isle of Wight AONB. Feelings of inspiration and escapism are particularly associated with the elevated chalk downs that offer far-reaching views over the sea and large parts of the Island. The landscape has influenced and inspired generations of poets and artists, including Keats and Alfred Lord Tennyson, who lived in Farringford House.

- **Sense of history**: The history of the landscape is most evident in its close relationship with the sea, which has been a key part of life since prehistoric times; for example, Brading Marshes has evidence of Roman trade with mainland Europe. There are also visually prominent prehistoric burial mounds or barrows on the chalk ridge, Roman and medieval settlements, and several historic buildings such as Yarmouth and Carisbrooke castles. Settlement pattern varies, from small linear villages to Victorian seaside resorts, estates and villas along the coast. Traditional buildings are constructed in characteristic local limestone and sandstones. There are seaside settlements with a high proportion of Victorian houses and associated exotic gardens along the Undercliff. Queen Victoria's decision to live at Osborne House created a renowned, longstanding royal historic connection to the Isle of Wight. The Island has played a vital part in England's maritime history as the prime defence of the Solent ports.

- **Tranquillity**: Feelings of tranquillity, escapism and inspiration are particularly associated with the elevated chalk downs, as well as the more intimate estuarine habitats, valleys and the quieter villages. Almost the whole of the western half of the Island remains undisturbed, apart from the urban areas around Totland and Newtown and the route of the A3054. The lack of light pollution means that the Island has a high proportion of 'dark skies', especially in comparison with the rest of south-east England.

Spectators watch The Round the Island Race by the Needles, a row of three distinctive stacks of Chalk that rise out of the sea to the west of the Island.

- **Recreation**: Recreation is a key feature of the Island and is supported by a relatively high density of rights of way and nearly 2,000 ha of open access land, including woodland, with the Tennyson Trail stretching from the Needles to Carisbrooke Castle and offering far-reaching views from the chalk ridge. Seaside resorts such as at Ventnor, Ryde, Alum Bay and Blackgang Chine offer traditional family recreational opportunities. Maritime activities are important, and the Solent is one of the busiest sailing waters in the world. There is a range of nationally renowned recreation events which bring large crowds to the Island, such as the Round the Island Race, Old Gaffers regatta, walking festivals and the Wight Challenge triathlon. The Isle of Wight Festival is established as one of England's most popular music festivals.

The Island is home to a rich variety of important species such as the red squirrel, which can thrive due to the buffer provided by the Solent.

- **Biodiversity**: The Isle of Wight has several international designations, including an SPA, five SAC and a Ramsar site, while the 41 SSSI (largely in favourable or unfavourable recovery) cover nearly 3,000 ha of the NCA. The north coast of the Island forms part of the Solent European Marine Sites, a collective designation covering the internationally important areas of the Solent. The Solent and Southampton Water, (the Ramsar site and the SPA,) support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.

  Some 5,000 ha of the NCA is covered by semi-natural habitats that include wet woodland, lowland mixed deciduous and beech and yew woodland, maritime cliff and slope, lowland calcareous grassland, coastal and flood plain grazing marsh, and lowland heathland and reedbeds. These habitats support a range of species, some of which are unique to the Island or are thriving due to the protection given to them by the Solent, including two of England's most endangered species, the red squirrel and dormouse, Other important species are Glanville fritillary butterfly, bat species, field cow-wheat, early gentian and wood calamint.

- **Geodiversity**: The Isle of Wight possesses some of the best sites in Europe for dinosaur remains, as well as a diverse and often abundant source of other fossils. The Island's Cretaceous cliffs and Palaeogene coast reveal evidence of dinosaurs, ancient seas and ice-age landscapes. The Ventnor Undercliff on the southern coast is the most populated rotational landslide complex in north-western Europe, and the distinctive 'Needles' chalk outcrop provide some of England's most famous coastal landmarks. This range of geology determines and influences the soils, drainage and various habitats and human activities found across the area. The opportunity to observe, record and interpret all these geological formations and geomorphological processes makes an important contribution to research and education.

Statements of Environmental Opportunity

SEO 1: Safeguard the diversity of features, designated habitats, rich geology and geomorphological processes along the Island's coastline, including chalk cliffs, rias, estuaries, chines, the Needles chalk stacks, Alum Bay and the Undercliff landslip area. Where possible, allow for natural coastal processes to operate unimpeded, resulting in the creation of new habitats, conserving and enhancing landscape character, and benefiting biodiversity and the historic environment. Promote the Island's internationally important geodiversity, providing interpretation to enhance educational and recreational opportunities.

For example, by:

- Maintaining the function of geomorphological processes, allowing natural evolution of the coast, as well as the dynamic process of erosion and accretion to continue where possible, allowing coastal habitats to provide a natural and cost-effective means of defence.
- Planning for change at the coast, looking for opportunities for the creation of new habitats and roll-back of existing habitats where appropriate, to maintain and enhance local landscape character, sense of place and biodiversity and to reduce flooding in built-up areas.
- Recognising the intrinsic link between geology, natural processes and landscape, which is crucial to the character and special qualities of the area, through providing access, interpretation and education facilities so that this understanding is shared with residents and visitors alike.
- Maintaining a record of significant fossils that have been found on the Island and ensuring that good education and interpretation allow visitors and residents to benefit from the strong sense of history and geodiversity.
- Maintaining and enhancing the geological and geomorphological resource through the development of conservation strategies and initiatives, the maintenance of natural coastal processes and the development of responsible fossil-collecting policies.
- Improving public understanding of the influence of geodiversity on the Island's topography, including its valleys and downs; the presence of palaeo-river terraces and slopes; its buildings, quarries, land use and biodiversity; and the presence of mineral resources.
- Exploring opportunities to promote the Island's rich dinosaur heritage through access and interpretation, such as through the Dinosaur Island Trail.
- Ensuring that important geological exposures are properly managed to prevent them from becoming obscured or otherwise inaccessible through coast defence construction, vegetation growth, quarrying, waste disposal or other activities.

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SEO 1: Safeguard the diversity of features, designated habitats, rich geology and geomorphological processes along the Island's coastline, including chalk cliffs, rias, estuaries, chines, the Needles chalk stacks, Alum Bay and the Undercliff landslip area. Where possible, allow for natural coastal processes to operate unimpeded, resulting in the creation of new habitats, conserving and enhancing landscape character, and benefiting biodiversity and the historic environment. Promote the Island's internationally important geodiversity, providing interpretation to enhance educational and recreational opportunities.

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- Promoting the scientific and educational value of important geological sites and, in particular, the links between geology, landscape and wildlife habitat development.

- Implementing the recommendations of the Isle of Wight Local Geodiversity Action Plan.

- Planning for and managing climate change impacts – such as increased coastal erosion and sea level rise, which result in the retreat of the soft cliffs – to build more resilient landscapes. This will help to lessen the impact of 'coastal squeeze' of estuarine and coastal habitats.

Alum Bay coast.

SEO 2: Conserve the chalk downs and their species-rich chalk grassland and other semi-natural habitats and the agricultural land to the north and south with its pattern of fields, hedgerows, woodlands and rivers. Maintain and restore the natural function of river catchments and farmland habitats at a landscape scale to bring benefits in terms of reducing soil erosion, improving soil quality, improving water availability and quality in rivers and aquifers, regulating water flow, enhancing biodiversity and supporting farming and food provision.

For example, by:

- Restoring and expanding lowland calcareous grassland along the central chalk ridge and southern chalk outcrop, especially within the western central ridge, the southern uplands and the eastern central ridge and along the south-west coast. Link fragmented areas in the east and south, selecting locations to assist in aquifer recharge and improving groundwater quality.
- Maintaining and, where possible, enhancing the biodiversity of semi-improved neutral grasslands within the north of the Isle of Wight and encouraging the adoption of conservation headlands and wildlife strips within arable fields, particularly those on the Chalk.
- Significantly restoring, creating and re-linking the fragmented chalk grassland habitats of the chalk ridge to provide opportunities for ecological connectivity for wildlife.
- Encouraging understanding of the ecology and habitat management requirements of the heavy clay grasslands that comprise a significant part of the semi-natural grassland resource on the Island.
- Maintaining and, where possible, enhancing the diversity of coastal habitats and in particular the important transitions from coastal to terrestrial habitats.
- Restoring the rare chalk heath associated with superficial deposits over the chalk at Ventnor Downs and Headon Warren.
- Conserving and extending species-rich grassland habitats and controlling scrub invasion.
- Protecting and enhancing rivers and other wetland environments, in particular rare chalk streams, encouraging the natural management of river and stream corridors, to safeguard water supplies, ensure that riparian habitats are more resilient to climate change and help to manage flood risks.
- Identifying key areas of vulnerability for the assemblage of habitats and identifying actions for adapting to changes in climate.
- Continuing to explore and develop opportunities to record and map existing areas of biodiversity value to facilitate the creation of cohesive habitat networks.
- Working with landowners to integrate sustainable land management options and provide benefits for farming while benefiting biodiversity.
- Ensuring proper management of and protection from further destruction of all remaining areas of semi-natural habitat on the Island, through designation and development of appropriate planning and other land use policies.

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SEO 2: Conserve the chalk downs and their species-rich chalk grassland and other semi-natural habitats and the agricultural land to the north and south with its pattern of fields, hedgerows, woodlands and rivers. Maintain and restore the natural function of river catchments and farmland habitats at a landscape scale to bring benefits in terms of reducing soil erosion, improving soil quality, improving water availability and quality in rivers and aquifers, regulating water flow, enhancing biodiversity and supporting farming and food provision.

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- Managing and restoring ancient semi-natural woodlands by re-introducing grazing to former pasture woodlands, restoring coppice management to those woodlands that still retain a well-defined coppice or coppice-with-standards structure and developing high forest management systems in other semi-natural ancient woodlands which conserve and enhance their ecological diversity and semi-natural character.
- Taking opportunities to create new saline lagoons or to allow them to develop along the Solent shore of the Island, where they can make a positive contribution to coastal habitats.
- Working in partnership across sectors to tackle the challenges associated with flood risk, pollution and low flows, giving priority to watercourses of poor ecological status. Include buffering of watercourses and reservoirs and restore natural river geomorphology, to improve water quality and reduce flood risk. Woodland planting can help reduce diffuse pollution from agricultural land and mitigate flood risks, as well as safeguarding surface water resources.
- Ensuring that sustainable water and land management strategies for Island river catchments are adhered to in accordance with the Water Framework Directive and encouraging greater public engagement in river management.
- Improving understanding of how to respond to and plan for climate change impacts and future consumer demands, including the impacts of reduced water availability on important biodiversity sites.
- Drawing on best practice principles such as those developed by the Forestry Commission and Environment Agency and established under the Catchment Sensitive Farming Initiative, and support stakeholder groups to help to deliver a good water environment across the Island, benefiting biodiversity and the Island communities.
- Encouraging sustainable water use by homes and businesses from catchments and promoting sustainable urban drainage systems.
- Encouraging integration of environmentally sensitive water policy objectives through land use planning and land management practices, using agri-environment schemes where possible, to ensure that an appropriate balance is maintained between water supply and demand.
- Exploring opportunities for landowners to work together across catchments to restore more natural river systems, including wet woodland creation to deliver biodiversity, amenity, resource protection and flood control benefits.
- Raising awareness of local varieties of Isle of Wight garlic and other local crops and exploring opportunities to promote garlic as a distinctive Island product.

SEO 3: Protect the long, open views, the high levels of tranquillity and dark skies, and the diversity of the landscape and seascape, through enhancing access to and interpretation of the wealth of natural and heritage assets and sustainable recreational opportunities, including the world famous sailing, the range of beaches and the walking trails.

For example, by:

- Managing scrub and woodland to maintain expansive views from the elevated chalk ridge, as well as the open character of the southern arable plains and the more intimate pastoral landscape of the north.
- Maintaining important open views, tranquillity and connection to the maritime environment through sensitive, responsive planning of future land use and offshore developments.
- Carefully planning the location of new woodland and tree planting to provide habitat connectivity and wider benefits to the environment and society.
- Recognising that connectivity of habitats is very important for the movement of species and following targeted planting to connect important habitats, but avoiding planting where it reduces the sense of openness.
- Maintaining the pattern and distribution of settlement, carefully locating any necessary new development and infrastructure to avoid clutter and visual intrusion.
- Conserving the rural settlement pattern of small, linear villages located at the base of the Chalk, to ensure that their rural character is retained and the character of the surrounding landscape is protected.
- Promoting the use of local vernacular building materials, proportions and sizes, using this understanding to inspire locally distinctive development.
- Maintaining and improving access throughout the rights of way network, the Tennyson Trail and the coastal footpath, promoting enjoyment, awareness and understanding of less well-known sites and features. This will accommodate and disperse tourism pressures in order to maintain existing levels of tranquillity, remoteness and landscape character.
- Increasing understanding and enjoyment through education and interpretation materials, especially where this helps to promote the sensitive features of designated sites, ensuring that access balances recreational enjoyment with the protection of biodiversity, geodiversity and historic features.
- Identifying and promoting viewpoints that enable appreciation and experience of the tranquillity and outstanding natural beauty of the Isle of Wight landscape by people of all abilities.
- Promoting sustainable tourism initiatives that target a broad range of visitors and, where practical, reduce car dependency, accommodating high visitor numbers while conserving the landscape, its biodiversity and tranquillity.
- Promoting sustainable tourism and natural health initiatives to ensure that tourism is managed sustainably and that local residents and visitors alike can enjoy the landscape.
- Managing new development and tourism facilities in ways that ensure that valuable assets such as tranquillity and dark skies are retained.

SEO 4: Manage and enhance the historic character of the Island's landscapes and settlements and reinforce and enhance the existing settlement structure as part of any sustainable development, encouraging the use of local materials, ensuring that high-quality green infrastructure is incorporated into all scales of development, and enhancing access, climate change mitigation and flood management.

For example, by:

- Working with the Local Enterprise Partnership, Local Nature Partnership, local planning authorities and individual businesses to take a strategic view of commercial opportunities that can be delivered in ways that support the natural environment.
- Engaging early in the scoping of new developments to ensure that they maximise their contribution to sustainable development.
- Ensuring that all development is designed to a high level of quality, creating buildings and a sense of place that reflect and enhance local character and distinctiveness.
- Supporting a diverse tourism offer on the Island, particularly focusing on sustainable ecotourism.
- Improving accessibility across the Island and maintaining functional transport links with the mainland.
- Ensuring that any new development protects the integrity of international, national and local designations relating to landscape, seascape, biodiversity and geodiversity and that adverse effects are avoided and mitigation measures provided where necessary.
- Ensuring that new development proposals reduce the overall risk of flooding, maintain up-to-date classification of flood zones and take into account climate change.
- Ensuring that new development avoids both direct and indirect adverse effects on the integrity of designated sites and providing mitigation measures where necessary.
- Promoting the maintenance and enhancement of the links between designated sites, to promote ecological connectivity.
- Reflecting the aims and objectives of the Isle of Wight Area of Outstanding Natural Beauty Management Plan, the council's Landscape Character Assessment, Historic Landscape Characterisation and any further relevant landscape assessment.
- Creating a network of accessible, high-quality, high-value greenspaces that promote sustainability, support biodiversity and contribute to the economic, social and environmental aspirations of the Island.
- Ensuring that new developments adopt green infrastructure principles by giving consideration to the conservation and enhancement of biodiversity, including the need to mitigate the potential impacts of new development.
- Ensuring that the repair, restoration or conversion of vernacular buildings is carried out with due regard to their historical interest, using local materials and appropriate styles and techniques to maintain local distinctiveness, construction techniques and traditions.

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SEO 4: Manage and enhance the historic character of the Island's landscapes and settlements and reinforce and enhance the existing settlement structure as part of any sustainable development, encouraging the use of local materials, ensuring that high-quality green infrastructure is incorporated into all scales of development, and enhancing access, climate change mitigation and flood management.

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- Improving sustainable public access through the rights-of-way network, provision of visitor facilities, and access to and interpretation of important sites for geodiversity, biodiversity and heritage, in order to increase the understanding, enjoyment and appreciation both of the landscape and of the history of use that has shaped the Island.
- Ensuring that the repair, restoration or conversion of buildings enhances their significance and provides additional opportunities for bird boxes and bat roosts where appropriate.
- Supporting community growing schemes, social forestry enterprises and partnerships with local land businesses to encourage more local farmers' markets and seasonal outlets that supply local food and wood fuel.
- Bringing all Scheduled Ancient Monuments into favourable management regimes, ensuring that those currently found on the Heritage at Risk register are given priority. Ensure that the suite of local heritage assets and features is managed to the best standard possible.
- Undertaking archaeological research to better understand ancient routeways and their features in order to inform appropriate management.
- Working in partnership with highways authorities and others to review and develop approaches to the management of roadside trees and coppice.
- Exploring initiatives that promote the contribution of ancient routeways to a well-functioning ecological network.

Additional opportunity

1. Maintain and enhance the existing woodland and pasture components of the landscape, including the historic field pattern bounded by hedgerows and farm woods, to improve ecological function at a landscape scale for the benefit of biodiversity, soils and water, sense of place and climate regulation. Safeguard ancient woodlands and encourage sustainably produced timber to support local markets and contribute to biomass production.

For example, by:

- Maintaining and exploring the potential for ancient replanted woodlands to be restored to a more semi-natural character, reinforcing the historic landscape.
- Encouraging the sustainable management of woodland by developing local markets for wood products and the skills to deliver these sustainably.
- Ensuring that any increased woodland cover is informed by the historical nature of the area, and promoting small-scale woodland creation to buffer existing woods, enhance landscape connectivity and manage flood flows.
- Increasing the viability of woodland habitats for wildlife by determining the area of appropriately managed woodland necessary to link and enhance isolated habitats and species, to provide better connectivity between woodlands and encourage species' resilience to climate change.
- Promoting sustainable woodland management techniques (such as coppicing, pollarding and wood fuel production) to increase carbon substitutions and sequestration and the resilience of tree species to climate change and disease.
- Establishing a long-term ecological monitoring and research programme to assess the management status of woodlands and the impacts of climate change, ash die-back and pressure from deer.
- Promoting and raising awareness of the archaeology and historical assets of woodland.
- Working with Isle of Wight Area of Outstanding Natural Beauty to promote the use of local wood products such as chestnut fencing and timber in housing developments and the use of locally sourced wood fuel.
- Extending woodland around settlements and infrastructure developments to filter light pollution and reduce sound pollution.
- Maintaining and restoring links between woodland and other woodland habitats and species-rich grasslands and heathland outside the main woodland. This will create a robust network of wooded and open semi-natural habitats that will benefit the internationally important populations of bats, as well as other species.

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Additional opportunity

1. Maintain and enhance the existing woodland and pasture components of the landscape, including the historic field pattern bounded by hedgerows and farm woods, to improve ecological function at a landscape scale for the benefit of biodiversity, soils and water, sense of place and climate regulation. Safeguard ancient woodlands and encourage sustainably produced timber to support local markets and contribute to biomass production.

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- Maintaining good pastoral land use and agriculturally productive fields, and using field margins and well-managed hedgerows to maintain ecological links across arable patches, reducing water flow and resultant soil erosion and providing benefits to water quality.

- Maintaining woodland cover – which provides integrated benefits for soil quality, water flow, soil erosion, water quality and management of steep gill woodland – for example through coppicing, to reduce land slippage and tree fall entering watercourses.

- Managing conifer-dominated plantations with a view to restoration where they occur on ancient woodland sites and wood pasture, with due regard to economic forestry and recreation. Actively manage existing woodlands traditionally (coppice with standards) where feasible. Continue to plant new woodland to reinforce the existing pattern of woodland cover and ecological connectivity. Where planting does take place it should respect historic landscape features and/or restore former woodland/hedgerow features.

Ponies graze by the Longstone Megalith monument at Mottistone Down.

Supporting document 1: Key facts and data

Area of Isle of Wight National Character Area (NCA): 38,017 ha

1. Landscape and nature conservation designations

The Isle of Wight Area of Outstanding Natural Beauty (AONB) is 19,100 ha and forms nearly 50 per cent of the NCA. The AONB is divided into 5 separate land parcels across the island. The Isle of Wight also contains two Heritage Coasts: Tennyson (2,418 ha) and Hamstead (1,546 ha) totalling 10 per cent of the NCA.

A management plan for the protected landscape can be found at:

- http://wightaonb.org.uk/

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	% of NCA
International	Ramsar	Solent and Southampton Water	574	1
European	Special Protection Area (SPA)	Solent and Southampton Water SPA	690	2
	Special Area of Conservation (SAC)	Isle of Wight Downs SAC, South Wight Maritime SAC, Solent Maritime SAC, Briddlesford Copses SAC, Solent and Isle of Wight Lagoons SAC	1,107	3
National	National Nature Reserve (NNR)	Newtown Harbour NNR	105	<1
	Site of Special Scientific Interest (SSSI)	A total of 41 sites wholly or partly within the NCA	2,990	8

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 300 local sites in the Isle of Wight NCA covering 4,338 ha which is 11 per cent of the NCA.

Source: Natural England (2011)

- Details of individual Sites of Special Scientific Interest can be searched at: http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
- Details of Local Nature Reserves (LNR) can be searched 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/website/magic/ – select 'Rural Designations Statutory'

1.1.1 Condition of designated sites

SSSI condition category	Area (ha)	Percentage of NCA SSSI resource
Unfavourable declining	86	3
Favourable	1,398	47
Unfavourable no change	13	<1
Unfavourable recovering	1,457	49

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

A central chalk ridge reaches a maximum height of 214 m AOD at Brightstone Down, an area of deeply dissected dry valleys with generally thin and infertile soils. At Tennyson Down the advancing sea has carved the ridge into the precipitous cliffs and distinctive stacks known as the Needles. The southern chalk downs are higher, reaching 240 m AOD at St Boniface Down. The chalk downland results in panoramic views of the island and forms a key visual receptor from which much of the island's wider landscape is visible.

Source: Isle of Wight Character Area Description and Isle of Wight AONB (2012)

2.2 Landform and process

About 30 million years ago the sea retreated from the island. The whole rock sequence was then buckled by earth movements associated with the formation of the Alps far to the south. On the north of the island are slumping cliffs, platforms cut in the beaches by fossil seas and more recent features such as estuaries, spits, shingle bars and reefs. On the south of the island are landscape scale features such as the Isle of Wight monocline (the huge fold that buckled the rocks from the Needles to St Catherine's Point), the Undercliff (the largest active landslip in Europe) and small-scale features such as the south coast 'chines', cliffs, sea caves and stacks. In some areas in the north of the NCA, coastal erosion has caused slumping resulting in sections of bare, unstable clay. Where the sandstone of the lower greensand reaches the sea it forms high, terraced cliffs, as at Blackgang Chine and Red Cliff. Inland, it produces gently rolling country with isolated knolls and hog-back ridges.

Source: Isle of Wight Natural Area Profile

2.3 Bedrock geology

The geology of the Isle of Wight consists of sediments of Cretaceous age and younger, with the Wealden clays at the base. Above these are the Lower Greensand and then Gault Clay and Upper Greensand. The Gault Clay is structurally weak and the presence of the Upper Greensand above it has led to some spectacular landslips. There are thick (530 m) beds of Chalk here with flint nodules in the upper part and sands and clays of the Reading Beds, Bagshot Beds and London Clay above the Chalk. The rocks in the Isle of Wight were then folded as a result of stresses from the Alpine Orogeny (mountain building episode). This reactivated an existing fault so some of the strata on the island are now almost vertical. The Purbeck Monocline, a step-like fold, continues into the Isle of Wight where it forms the central spine. The Isle of Wight is famous for its fossils. Species found here include *Neovenator* (a carnivore similar to *Tyrannosaurus rex*) and *Eotyrannus* – both theropods – and also many herbivorous dinosaurs. The Hemstead Beds are famous for fossils of mammals, crocodiles, turtles and fish. There are many invertebrate fossil locations on the island.

Source: Isle of Wight Natural Area Profile

2.4 Superficial deposits

During the Quaternary (the last 2 million years) deposits laid down have mainly consisted of alluvium, river terrace deposits laid down by fluvial processes and clay-with-flints. The island was formed at the end of the last ice age, approximately 7,000 years ago. The chalk ridge that runs from Dorset across the island is the same chalk distribution visible at Dover, Normandy and Pas de Calais. The Solent was a river from the River Frome and over time isostatic rebound and increasing sea levels separated the island from the mainland and created Poole Bay.

Source: Isle of Wight Natural Area Profile and Isle of Wight AONB (2012)

2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	5
National	Mixed Interest SSSI	8
Local	Local Geological Sites	0

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

2.6 Soils and Agricultural Land Classification

Wealden Clay produces heavy soils and where it occurs inland, it mostly supports pasture. The light sand soils over the Lower Greensand provide some of the best arable land on the island. The Chalk gives rise to thin lime-rich soils that supports distinctive vegetation.

Source: Isle of Wight Natural Area Profile

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

Grade	Area (ha)	% of NCA
Grade 1	0	0
Grade 2	1,181	3
Grade 3	20,794	78
Grade 4	10,123	3
Grade 5	1,246	3
Non-agricultural	1,424	4
Urban	3,011	1

Source: Natural England (2010)

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

3. Key water bodies and catchments

3.1 Major rivers/canals

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

- Eastern Yar 24 km
- Medina 19 km

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.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 28,892 ha, which is 76 per cent of the 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 5,088 ha of woodland (13 per cent of the total area), of which 1,594 ha is ancient woodland. This includes forests, such as Parkhurst, Bouldner and Brightstone, that are formed from both semi-natural and plantation woodland.

Source: Natural England (2010), Forestry Commission (2011)

4.2 Distribution and size of woodland and trees in the landscape

Woodland cover varies; small copses, relict wood pastures and large plantations characterise the north of the island, while ancient, hanger woodlands and further plantations are found in the south. Ancient woodland is also found along the coast. The widespread creation of forestry plantations, mainly on former heathland, but also on areas of chalk grassland and neutral grassland, has caused significant damage to important wildlife habitats. In addition, several of the island's ancient woodlands have been damaged by conversion to commercial forestry plantations.

Source: Isle of Wight Natural Area Profile

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)	% of NCA
Broadleaved	3,887	10
Coniferous	531	1
Mixed	265	1
Other	405	1

Source: Forestry Commission (2011)

Area and proportion of ancient woodland and planted ancient woodland within the NCA.

Type	Area (ha)	% of NCA
Ancient semi-natural woodland	803	2
Planted Ancient Woodland (PAWS)	791	2

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Hedgerows are the predominant boundary feature throughout.

Source: Isle of Wight Countryside Character Area Description; Countryside Quality Counts (2003)

5.2 Field patterns

Most of the island is covered by irregular-shaped fields that vary in size from typically small in the north on the clays to medium, and occasionally large, on the slopes of the chalk ridge. On the heavy clays there was some reorganisation of boundaries, creating larger fields and improving drainage, in the 19th century.

Source: Isle of Wight 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

Numbers of dairy farms halved between 2000 and 2009. Grazing farms have fallen in number generally, whereas all crops showed a slight increase over the same time period. Livestock farms remained the largest group at 39 per cent of the total number, followed by arable and horticultural at 28 per cent in 2009.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Numbers remained relatively stable between 2000 and 2009, with all sizes of farm dropping by only 1 or 2, apart from the loss of six 5 ha to 20 ha farms.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

2009: Total farm area = 24,703 ha; owned land = 18,035 ha
2000: Total farm area = 24,459 ha; owned land = 18,624 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

The amount of land used for arable farming, including cereals and oil seeds, fell between 2000 and 2009, whereas areas for cash roots and stock feed increased slightly in the same time period. The greatest changes were that the land used for vegetable growing doubled, as had that used for glasshouses. Grass and uncropped land made up 58 per cent of the total area. The mild climate of the island allows for less traditional uses such as lavender and vineyards. Garlic is also a significant crop and an annual festival to celebrate the garlic harvest has been held since 1983.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Numbers of cattle showed a fall of 13 per cent between 2000 and 2009, but the most dramatic drop was the number of pigs which had decreased by 87 per cent to less than 600 animals during the same period. The number of sheep increased by 9 per cent to nearly 38,000 animals; which equates to 71 per cent of the total livestock on the island.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

Regular farm workers, both full- and part-time, more than halved in number between 2000 and 2009. There was a slight increase in the numbers of casual/gang workers and salaried managers during the same period.

Source: Agricultural Census, Defra (2010)

Please note: (i) Some of the Census data is estimated by Defra so will not be accurate for every holding (ii) Data refers to Commercial Holdings only (iii) Data includes land outside of the NCA belonging to holdings whose centre point is within the NCA listed.

7. Key habitats and species

7.1 Habitat distribution/coverage

The Isle of Wight contains a number of rich and varied habitat types that are under a strong maritime influence. The main habitats supported on the island include chalk grassland, neutral meadows, ancient semi-natural broadleaved woodland, relict heathland and acid grassland. The cliffs and landslips support a number of rare plants.

Source: Natural England, NCA Science and Research, Natural Area Profile

7.2 Priority habitats

The Government's new strategy for biodiversity in England, *Biodiversity 2020*, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in *Biodiversity 2020*, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information.

More information about *Biodiversity 2020* can be found at;

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)	% of NCA
Broadleaved mixed and yew woodland (broad habitat)	2,960	8
Maritime cliff and slope	793	2
Lowland calcareous grassland	655	2
Coastal and flood plain grazing marsh	578	2
Lowland meadows	215	1
Reedbeds	149	<1
Lowland dry acid grassland	121	<1
Fens	87	<1
Lowland heathland	65	<1
Saline lagoons	28	<1
Mudflats	19	<1
Coastal sand dunes	13	<1
Coastal vegetated shingle	11	<1

Source: Natural England (2011)

Maps showing locations of priority habitats are available at

- http://magic.Defra.gov.uk/website/magic/ select 'Habitat Inventories'

7.3 Key species and assemblages of species

- Maps showing locations of priority habitats are available at: http://magic.Defra.gov.uk/website/magic/
- Maps showing locations of S41 species are available at: http://data.nbn.org.uk/

8. Settlement and development patterns

8.1 Settlement pattern

Patterns of settlement vary. Small, linear villages connected by winding lanes are located at the base of the chalk downs. Victorian seaside resorts, estates and villas are concentrated along the coast. Urban development is spreading into former agricultural land, with waste disposal sites, extensive holiday and industrial developments and caravan parks blurring the edge of settlements.

There has been a considerable increase in the number of horses on the island and equestrian paraphernalia (such as field division and sand schools). The main settlements of Newport, Cowes, and East Cowes are around the Medina River, a navigable river which still has working wharfs and waterfronts. The other main settlements of Ryde, Bembridge, Sandown, Shanklin and Lake are on the east coast and are connected by the Victorian railway line which remains between the passenger ferry terminal at Ryde pier and Shanklin. On the west of the island the main settlements of Yarmouth and Freshwater are located around the Western Yar estuary, and Totland around Totland Bay. The features of estuaries and rivers have attracted settlement, while other settlements have been influenced by railway and highway development.

Source: Isle of Wight AONB (2012), Isle of Wight Countryside Character Area Description; Countryside Quality Counts (2003)

8.2 Main settlements

The Isle of Wight NCA contains the following settlements; Newport, Cowes, Ryde, Ventnor, Shanklin, Sandown, Totland and Bembridge, Yarmouth and Freshwater. The total estimated population for this NCA (derived from ONS 2001 census data) is 140,491.

Source: Isle of Wight Countryside Character Area Description; Countryside Quality Counts (2003), Natural England (2012)

8.3 Local vernacular and building materials

Local limestones and sandstones are the main traditional building materials. Local brick buildings are common, and a few ancient buildings are roofed with a combination of limestone slabs and tile upper courses. However, the island does not have one strong vernacular building style. Various designs reflect the complexity of the geology of the island.

Source: Isle of Wight AONB unit 2012, Isle of Wight Countryside Character Area Description; Countryside Quality Counts (2003)

9. Key historic sites and features

9.1 Origin of historic features

Historical landscape features include prehistoric burial mounds, former medieval deer parks, Victorian country houses and (mostly) degraded parklands. There is a relatively high number of deserted medieval village sites across the island and a Roman Villa has been excavated at Brading. The coastal settlements reflect the rise in tourism during Victorian period, but earlier defensive features also remain such as the Tudor Yarmouth Castle and Carisbrooke Castle which dominate the area around Newport and, along with the former royal residence of Osborne House, is one of the main tourist attractions on the island.

Source: Countryside Quality Counts Draft Historic Profile, Isle of Wight Countryside Character Area Description

9.2 Designated historic assets

This NCA has the following historic designations:

- 8 Registered Parks and Gardens covering 696 ha.
- 0 Registered Battlefields.
- 128 Scheduled Monuments.
- 1,933 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

- 6 per cent of the NCA 2,442 ha is classified as being publically accessible.
- There are 799 km of public rights of way at a density of 2.1 km per km^2.
- There are no National Trails within the Isle of Wight NCA.

Source: Natural England (2010)

Walkers on bridleway.

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

Access designation	Area (ha)	% of NCA
National Trust (Accessible all year)	938	2
Common Land	4	<1
Country Parks	65	<1
CROW Access Land (Section 4 and 16)	1,576	4
CROW Section 15	21	<1
Village Greens	11	<1
Doorstep Greens	5	<1
Forestry Commission Walkers Welcome Grants	294	<1
Local Nature Reserves (LNRs)	68	<1
Millennium Greens	2	<1
Accessible National Nature Reserves (NNRs)	105	<1
Agri-environment Scheme Access	36	<1
Woods for People	1,103	3

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) much of the NCA is relatively tranquil away from the coast and urban areas of Newport, Ryde, Sandown and Shanklin, and along major roads. The west of the NCA has more and larger areas of tranquility than the east. A special feature is the island's tranquility and 'dark skies'. These are areas where there is little ambient light pollution and on a clear night stars can be seen clearly. The Isle of Wight has a vast majority of the south-east of England's remaining 'dark skies'.

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

Category of tranquillity	Score
Highest value within NCA	42
Lowest value within NCA	-63
Mean value within NCA	-3

Source: CPRE (2006)

- More information is available at the following address: **http://www.cpre.org.uk/campaigns/landscape/tranquillity/our-tranquillity-map-explained**

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 almost the whole of the western half of the island remains undisturbed, apart from the urban areas around Totland and Newtown and the route of the A3054 road.

A breakdown of intrusion values for this NCA is detailed in the following table.

Category of intrusion	1960s (%)	1990s (%)	2007 (%)	% change (1960s-2007)
Disturbed	24	43	51	27
Undisturbed	70	53	40	-30
Urban	2	2	9	7

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are that disturbed land has doubled, while that classed as urban, though still a small proportion of the NCA, has increased significantly in the period since the 1990s.

- More information is available at the following address: **http://www.cpre.org.uk/campaigns/planning/intrusion/our-intrusion-map-explained**

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 Forest Inventory, Forestry Commission (2011)
- Countryside Quality Counts Draft Historic Profiles, English Heritage (2004)*
- Ancient Woodland Inventory, Natural England (2003)
- 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

Trees and woodlands

- Between 1999 and 2003 258 ha of new planting under a Woodland Grant Scheme agreement was approved. New planting is on a scale that matches existing patterns, with concentrations in the south-east, around the valley of the Eastern Yar.

- In 1999 about 12 per cent of the established eligible National Inventory of Woodland and Trees woodland stock was covered by a Woodland Grant Scheme management agreement, and this went up to 16 per cent in 2003. About 35 per cent of the woodland cover is on ancient woodland sites. The proportion of these sites covered by a Woodland Grant Scheme has increased from 19 per cent in 1999 to 31 per cent in 2003. There is evidence of active coppice management since 1999, with Woodland Grant Scheme agreements for coppice restocking and felling. However, coppice woodlands continue to deteriorate through lack of management, especially in the northern pastures and coast sub-zone.

- The extent of Woodland Grant Scheme cover suggests that woodland character was generally being maintained throughout the area in the late 1990s. Conservation of the area's woodland cover, including ancient oak woodland in the north and scattered hanger woodlands on the southern Greensand escarpment, has been identified as being of only moderate priority. Coppice restoration on the other hand is identified as a high priority, with a long history of coppicing reflecting the Island's lack of deer populations and temperate climes, while there is also some potential for the creation of new woodlands[4].

- In the early 20th century, the creation of forestry plantations, mainly on former heathland, but also on areas of chalk and neutral grassland, caused significant damage to important wildlife habitats. In addition, several of the Island's ancient woodlands have been planted up with commercial forestry species.

- Between 2006 and 2013 around 360 ha of woodland, wood pasture and parkland were brought into management through Environmental Stewardship agreements.

Boundary features

- Between 1999 and 2003 Countryside Stewardship capital agreements for linear features included fencing (28 km), hedge management (21 km), hedge planting and restoration (28 km), restored boundary protection (31 km), stone wall repair (0 km) and stone wall restoration (0 km). The estimated boundary length is about 1,608 km. Total length of agreements between 1999 and 2003 is equivalent to about 7 per cent of this total.

- There was significant hedgerow loss in the late 20th century, affecting the historic landscape character of all areas, especially the pastoral landscapes of the AONB in the north.

- In 2011, there was 60 km of ditch, 518 km of hedgerow and 48 km of stone wall under management, and 32 km of fencing erected to protect woodland, through the Environmental Stewardship scheme.

[4] *Preliminary nature conservation objectives for Natural Areas – Woodland and forestry*. English Nature Research Report 239, CM Reid, and KJ Kirby (1997)

Agriculture

- The agricultural census data of 2010 shows relatively little change in type of farm holding between 2000 and 2009, with 31 per cent of holdings based on grazing livestock and 15 per cent on cereals. Dairy holdings dropped from 47 in 2000 to 23 (6 per cent) in 2009, and horticultural holdings rose from 29 to 32 (8 per cent) over the same period.

- In 2009 around 58 per cent of the land was grass or uncropped, and this represents a small increase from 2000. Cereals were cropped on 22 per cent of the land, while another 7 per cent was used for vegetables or other arable crops.

- Since 2000 there was a small decrease in numbers of cattle (down from 16,899 to 14,676 in 2009) but an increase in sheep (up from 34,888 to 37,959 in 2009). Numbers of pigs fell from 4571 in 2000 to 578 in 2009.

- A large proportion of holdings (46 per cent) are below 20 ha in size, although the 19 per cent of farms over 100 ha account for 65 per cent of the area. These figures remained fairly stable between 2000 and 2009.

- Between 2005 and 2013, approximately 682 ha were managed as buffers, field corners, wild bird and other environmentally beneficial cropping options, and a further 624 ha of winter stubbles were retained through Environmental Stewardship schemes.

Settlement and development

- Although average rates of development are low, there is evidence that development between 1999 and 2003 was more concentrated in rural areas outside the Area of Outstanding Natural Beauty, and along the axes of the major route corridors. These impacts transformed the character of the area locally.

- Towards the end of the 20th century, erosion of settlement character due to use of new building materials and styles occurred across the Isle of Wight. Inappropriate suburban style development has affected most areas to some degree.

- An increase in tourism-related developments, particularly on the chalk ridge and downs and southern coastal plain, and the visual impact of caravan parks, camp sites and amusement parks in other areas have incrementally affected character, although there have been no major developments of this nature in recent years.

- Equestrian development and the subdivision of land has led to a change of character and blurring of the distinction between urban areas and countryside.

- Since the early 21st century, new structures such as television and radio masts and wind farms have been constructed on elevated sites, especially within the central agricultural belt, giving rise to visual impacts.

- Industrial scale solar panels have been an increasingly frequent feature from around 2010.

Semi-natural habitat

- Historically there has been a substantial decline in heathland through woodland planting and scrub development. In 2003 Countryside Stewardship agreements covered 742 ha of calcareous grassland, and 750 ha of lowland pastures on neutral / acid soils, aimed at maintaining species richness. Agreements for the restoration of other semi-natural / grassland habitats covered another 504 ha, including 52 ha of heathland and creation of intertidal habitats on 7 ha of grassland.

- In the late 20th century, loss of unimproved meadows occurred, especially on the northern pastures and north coast, due to more intensive grazing and / or change of use to equestrian activities.

- There has also been a loss of chalk downland on the chalk ridge and downs, due to intensive arable production, afforestation, and scrub growth. In 2003 Countryside Stewardship annual agreements included 20 ha of scrub management. Since the early 21st century, the situation has begun to improve due to arable reversion. Scrubbing over remains a problem due to low stocking levels in some areas.

- Between 2005 and 2013 47 ha of species rich grassland were created, while 1,064 ha were restored and 578 ha brought under management, through Environmental Stewardship schemes. A further 990 ha were managed under options that promote less intensive cultivation practices, benefiting a wide range of species.

Historic features

- In 1918 about 2 per cent of the Island was historic parkland. By 1995 it is estimated that 53 per cent of this area had been lost. About 28 per cent of the remaining parkland was covered by a Historic Parkland Grant, and about 15 per cent was included within an agri-environmental scheme. Around 81 per cent of historic farm buildings remained unconverted and 91 per cent were intact structurally. These data suggest that while historic farm buildings are largely intact, the condition of parklands appeared to be neglected. During this time around 25 ha was managed under agri-environment schemes to protect and replace parkland trees as an important feature of the landscape, and reinstate grasslands as part of the parkland character.

- Ploughing, denudation and scrub encroachment of ancient monuments have been issues, affecting earthworks on the chalk ridge and downs, medieval boundaries and other historic features on the northern pastures and north coast, and cropmarks in other areas. However the pressure has lessened in recent years.

- There is little evidence of significant barn conversions towards the end of the 20th century. About 81 per cent of historic farm buildings remain unconverted. About 91 per cent are intact structurally. The redundancy of farmsteads has led to deterioration of historic farm buildings or pressure for their conversion, often to business, tourism or residential use.

- Between 2005 and 2013, around 5,100 sq m of tradition farm buildings were restored under Environmental Stewardship schemes. Some 147 ha of land were managed to protect archaeological ground features, along with 42 ha of arable reversion to permanent grass.

Coast and rivers

- There was some management and restoration of wetland habitats through Countryside Stewardship. The biological river water and chemical quality in 1995 was predominantly very good and this has been maintained.

- Damage to wetland landscapes (marsh, bog and wet meadows) from agricultural and drainage improvements have been an issue, especially in the central agricultural belt. Diffuse pollution and soil erosion into ditches and watercourses has occurred.

- In 2003 Countryside Stewardship annual agreements included a range of options for managing reedbed (6 ha), and the restoration / conservation of fen / reedbed / carr (48 ha).

- Coastal engineering intervention by the installation of hard structures has altered the landscape in some areas but engineered coastal defence schemes are no longer such as issue.

- Between 2006 and 2013, through Environmental Stewardship schemes, around 490 ha of wet grassland was maintained and restored for the benefit of wintering waders and wildfowl, and breeding waders. In addition, some 91 ha of fen, 45 ha of reed bed and 17 ha of coastal saltmarsh were maintained, restored and managed.

Minerals

- There are some significant localised visual impacts from the extraction of chalk, sandstone, sand and gravel, often affecting high land and exposed slopes.

Beach and cliffs at Brook Bay.

Drivers of change

Climate change

- The Isle of Wight coast is likely to change over the next 100 years due the impacts of marine erosion, ground instability and flooding by the sea. Current levels of risk are likely to increase through greater human activity and development in coastal areas. The Shoreline Management Plan outlines the best way to look after the coast in a sustainable way for the next 100 years. It has identified various approaches to the appropriate defence of stretches of coastline from some form of protection through to allowing for natural geomorphological processes to take place[5].

- Sea level rise is likely to exacerbate the retreat of soft cliffs, especially along the south west coast, and lead to the loss of certain sites, notably on the Tennyson Heritage Coast. It will also lead to 'coastal squeeze' of estuarine and coastal habitats where development or flood defence prevents natural retreat or regeneration.

- 36 per cent of the Island's coast currently has built coastal defences, mostly seawalls. It is important that interference with natural erosion and sedimentation through coastal management techniques are monitored to ensure that their impacts do not extend beyond what is needed to fulfil their function.

- Hotter, drier summers could result in an increased demand for water which could lead to deterioration of the semi-natural wetland habitats of the Island's rivers, while increased autumn / winter precipitation may lead to more frequent winter flooding.

[5] The Isle of Wight Shoreline Management Plan was published by the Environment Agency in 2010 and can be seen at **http://www.coastalwight.gov.uk/smp/publications.htm**

- Remnant chalk grasslands and other important habitats including heathland and dry acid grassland may deteriorate through a reduction in species diversity as a result of warmer winters and more frequent drought conditions. Higher temperatures could encourage the spread of invasive and woody species.

- The composition of the area's woodland cover may also be affected by increased storminess, periods of drought and a greater prevalence of pests and diseases, with potential loss of oak from ancient woodlands or as a prominent hedgerow tree in the north. Shallow-rooting beech in distinctive hangers may suffer from drought stress and wind throw.

- Conversely, warmer winters could promote increased tree growth, as well as the suitability of new non-native species that further affect woodland composition, such as has happened with the introduction of Holm Oak on St Boniface Down and other less well-managed species throughout the Island.

- A longer growing season with increasing temperatures may also encourage the introduction of novel crops and different crop timings into the arable-dominated southern half of the Island, as well as an increase in horticultural production, currently a feature in the east.

- Changes in weather patterns may result in increased erosion and weathering of sites and historic structures. Increased storms and rates of coastal erosion may lead to more frequent exposure of buried sites along undefended coastlines and increased risk of damage to historic built structures, even where there are coastal defences.

Other key drivers

- Increases or decreases to the water table and the drying out of peat deposits has implications for the palaeo-environmental record and submerged archaeology.

- Development has the potential to damage buried archaeology and a continued watching brief is needed to ensure that sites are either protected or recorded.

- Change of use towards recreational pursuits such as keeping horses has the potential to change the character of the landscape through additional fencing, shelters, jumps, stabling, feed storage, manèges, manure storage and disposal.

- Mineral extraction is a threat to some sites and it is important that any finds that would advance the geological understanding of the Island are not lost.

- Lack of management of woodlands could have an impact upon ground flora and invertebrate interest and influence habitat viability for key species.

- Very rare intertidal and coastal archaeological remains survive and are being destroyed due to natural coastal processes. Any proposals in relation to coastal activities must take into account the archaeological remains.

- Ongoing pressure for further wind farms could have implications for landscape and wildlife.

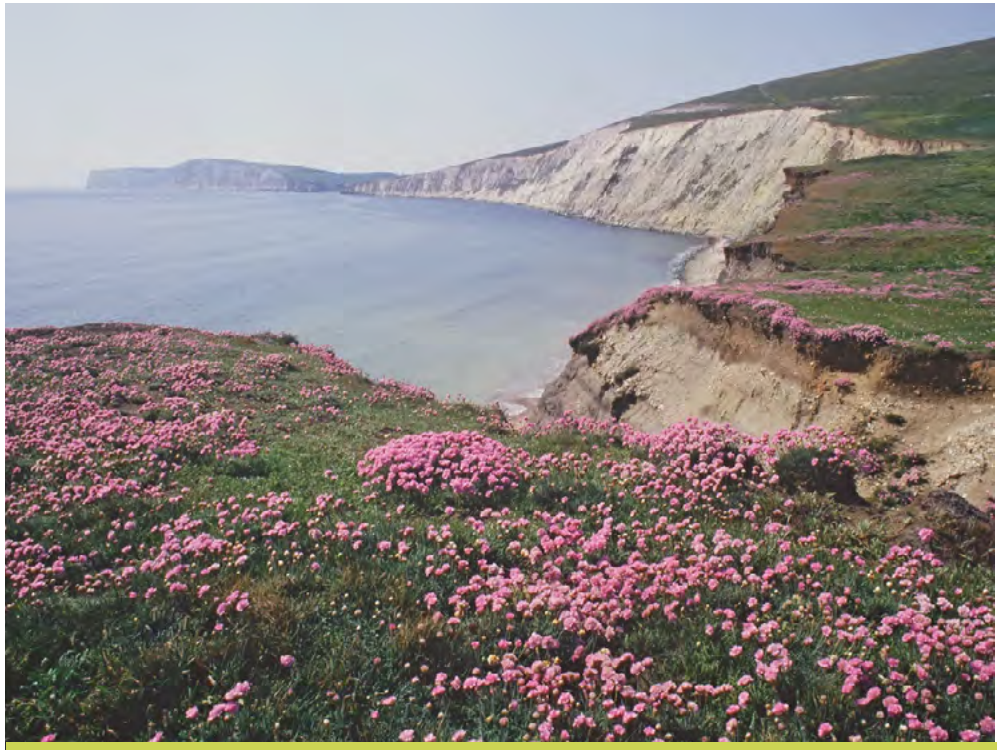
- Tourism pressures on key Island honey pot sites such as Alum Bay may continue, and need to be monitored and sustainable tourism principles promoted.

- Island status has prevented colonisation by some species such as mink, grey squirrel and deer, which has allowed populations of other species to flourish. Colonisation by deer in large numbers has the potential to damage and alter habitats.

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.



Compton Chine.

Statement of Environmental Opportunity	Ecosystem Service																		
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place/inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity
SEO 1: Safeguard the diversity of features, designated habitats, rich geology and geomorphological processes along the Island's coastline, including chalk cliffs, rias, estuaries, chines, the Needles chalk stacks, Alum Bay and the Undercliff landslip area. Where possible, allow for natural coastal processes to operate unimpeded, resulting in the creation of new habitats, conserving and enhancing landscape character, and benefiting biodiversity and the historic environment. Promote the Island's internationally important geodiversity, providing interpretation to enhance educational and recreational opportunities.	↔ **	↔ **	↗ **	↔ ***	↔ **	↗ **	↔ **	↔ **	↔ **	↗ **	↔ **	↔ **	↗ **	↑ ***	↑ **	↗ **	↑ ***	↗ **	↑ ***
SEO 2: Conserve the chalk downs and their species-rich chalk grassland and other semi-natural habitats and the agricultural land to the north and south with its pattern of fields, hedgerows, woodlands and rivers. Maintain and restore the natural function of river catchments and farmland habitats at a landscape scale to bring benefits in terms of reducing soil erosion, improving soil quality, improving water availability and quality in rivers and aquifers, regulating water flow, enhancing biodiversity and supporting farming and food provision.	↑ ***	↗ **	↑ ***	↗ **	↗ **	↑ ***	↑ ***	↑ ***	↑ ***	↑ ***	↗ **	↔ **	↔ **	↑ **	↔ **	↗ **	↗ **	↑ ***	↗ **

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

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

Statement of Environmental Opportunity	Ecosystem Service																		
	Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place/inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity
SEO 3: Protect the long, open views, the high levels of tranquillity and dark skies, and the diversity of the landscape and seascape, through enhancing access to and interpretation of the wealth of natural and heritage assets and sustainable recreational opportunities, including the world famous sailing, the range of beaches and the walking trails.	↔ **	↘ ***	↔ **	↔ ***	↔ **	↔ **	↗ **	↔ **	↔ **	↔ **	↔ ***	↔ ***	↔ **	↑ ***	↑ **	↑ ***	↑ ***	↔ **	↗ **
SEO 4: Manage and enhance the historic character of the Island's landscapes and settlements and reinforce and enhance the existing settlement structure as part of any sustainable development, encouraging the use of local materials, ensuring that high-quality green infrastructure is incorporated into all scales of development, and enhancing access, climate change mitigation and flood management.	↔ **	↗ **	↔ **	↔ ***	↗ **	↑ ***	↔ **	↔ **	↑ **	↔ **	↔ **	↔ **	↔ **	↑ **	↑ ***	↔ **	↗ **	↔ **	↗ **

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

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

Landscape attributes

Landscape attribute	Justification for selection
A diverse coast with many geological features, cliffs, sandy beaches and south coast 'chines' supporting a unique array of dinosaur remains and other fossils of international importance.	■ There is a nearly complete exposure of the Cretaceous Period (formed between 126 million and 65 million years ago). ■ To the north of the Island are slumping cliffs, platforms cut in the beaches by fossil seas and more recent features such as estuaries, spits, shingle bars and reefs. ■ On the south of the Island are landscape features such as the Isle of Wight monocline (the huge fold that buckled the rocks from the Needles to St Catherine's Point) and small scale features such as the 'chines' (impressive ravines formed by streams incising through sandstone rocks to the sea shore), cliffs, sea caves and stacks. ■ The dramatic land slipped Gault and Upper Greensand picturesque landscape of the Undercliff (with its own south facing micro climate, scenic beauty and the accolade of being the most populated rotational landslide complex in north-western Europe). ■ There are internationally and nationally important habitats and species, including maritime cliff and slope, coastal and flood plain grazing marsh, lowland heathland, estuaries, saline lagoons, intertidal mudflats, coastal sand dune, intertidal flats and seagrass beds and coastal vegetated shingle, which support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and various rare invertebrates and plants. ■ Internationally important exposures of Lower Greensand and Wealden Series rocks, rich in remains of dinosaurs and other fossils, are found on the cliffs on the south-west and south-east coast of the Island. The Isle of Wight is the most important location in Europe for dinosaur bones and one of the most important places worldwide. ■ The chalk cliffs at Culver and between Compton Bay and the Needles are of national importance for the study of the geological period in which the calcium rich remains of microscopic marine plants were laid down on the floor of a deepening sea. ■ The younger rocks in the north of the Island, also of international importance, are exposed in soft eroding cliffs, such as those at Hamstead and in quarries. These rock exposures and the fossil mammals, plants and insects contained in them, provide an opportunity to understand the environment of the Island some 60–30 million years ago. ■ The clays, sands and silts of the Palaeocene, Eocene and Oligocene periods (formed between 65 million and 30 million years ago) are a feature of the Hamstead Heritage Coast and part of the Tennyson Heritage Coast (Alum Bay to Totland), ■ Other features include the vertical multi-coloured Bracklesham Group sandstone strata at Alum Bay and the fossil rich Wealden Group clays at Brook Bay and Yaverland.

Landscape attribute	Justification for selection
A strong sense of history reflected in a wealth of historical landscape features such as prehistoric burial mounds, former medieval deer parks, and Victorian country houses and parklands.	■ There are flint workings dating from Palaeolithic times, while the open downland and heathland date back to the woodland clearance of Neolithic and in particular the bronze-age and iron-age periods. ■ Ceremonial sites such as The Longstone at Mottistone, burial mounds on chalk downland and sandstone hills, and structures such as churches and religious houses, are widespread, along with Roman Villa sites, medieval planned towns, Tudor and Jacobean manors and farmsteads. ■ Enclosure of downland, heathland, open farmland, common and waste took place in a piecemeal fashion over a long period of time, but particularly from the Tudor period into the eighteenth and nineteenth centuries, giving rise to historic boundary features such as hedgerows, ditches, hedge banks, wood banks, and stone walls and associated field patterns. ■ Many earthworks were used to demarcate boundaries relating to medieval parishes, manors and other land holdings and can still be seen in the landscape today. ■ More recent features and sites are associated with defence such as beacon sites, lighthouses, castles, forts and Second World War structures. ■ Good survival of post-medieval vernacular buildings, including stone manor houses and farmhouses, reflect the Island's varied geology. ■ A network of highways, byways, paths and tracks many of which are now public rights of way. ■ Industrial archaeology sites include quarries, old salt pans, brickworks through to rocket testing. ■ Designed parkland landscapes and ornamental gardens are associated with grand houses such as Appuldurcombe, Northcourt, Nunwell and the Royal Palace at Osborne House. ■ Overall there is an abundance of Scheduled Monuments.
A wide variety of woodland including broadleaved, copses, large plantations, scrub and hedgerows.	■ Limited, wind-swept, scrubby vegetation on the higher downs is combined with grazing and extensive arable cultivation. ■ Woodland cover varies; small copses, relict wood pastures and large plantations characterise the north of the Island, while ancient hanger woodlands and plantations are found in the south. Ancient woodland is also found along the coast. In places large woodland blocks, conifer and broadleaved, form dominant features in the landscape. ■ Several of the Island's chalk and neutral grasslands and ancient woodlands have been damaged ecologically as a result of conversion to commercial forestry plantations.

Landscape attribute	Justification for selection
Small scattered farmsteads and narrow enclosed winding lanes.	■ The majority of the Island is covered by irregularly shaped fields, variable in size from small in the north on the clay to medium and larger on the slopes of the chalk ridge. ■ Small enclosed fields are found in the north of the Island. ■ Hedgerows are the predominant boundary feature throughout the Island with variations in field size and pattern, and ancient species rich hedgerows are widespread. ■ Ancient routeways, many still used today, form part of the habitat mosaic of the Isle of Wight. The routes have been used for centuries and form an important part of the landscape, ecology and history of the Isle of Wight. ■ The routeways provide an extensive network of roads and paths allowing access to some of the most intimate and tranquil parts of the Island.
Rivers and associated wetland habitats.	■ The Medina and Yar rivers rise near the south coast and flow northwards to the Solent through deep gaps in the central chalk ridge. ■ The main rivers are the Medina and the Eastern Yar, both rising as chalk springs from the Southern Downs and gaining flow as they cross the Lower Greensand. ■ Public water supply comes from surface and groundwater sources including the three major aquifers which are on the Island and the Rivers Test and Itchen in Hampshire. ■ There are threats to the extent and connectivity of associated wetland habitats of these rivers. ■ South flowing streams arise from the base of the chalk ridge to cut the Island's distinctive 'chines' in the south-west.
Expansive views from open scarp, hill tops and beyond.	■ The sea and sky are dominant in many views. ■ High chalk cliffs provide views across to Dorset and Hampshire Coast and South Downs. ■ The elevation of the downs provides panoramic views.

Landscape attribute	Justification for selection
A suite of semi-natural habitats that add to both local landscape character and biodiversity supporting a diverse range of iconic and sometimes rare species.	■ A wealth of rich and varied habitat types with a strong maritime link including chalk grassland, neutral meadows, ancient semi-natural broadleaved woodland and relict heathland and acid grassland. ■ Ancient woodland, heathland, unimproved grasslands, marshes and creeks are the Island's key semi-natural habitats. ■ The Island is also home to a rich variety of important species, some of which are unique to the Island or are thriving due to the buffer provided by the Solent. This includes a number of key species, such as red squirrel, dormouse, Glanville fritillary butterfly, field cow-wheat, early gentian and wood calamint. ■ The warm southerly aspect of many of the chalk grasslands provides conditions that support large populations of nationally uncommon invertebrates such as the Adonis blue butterfly. The Island's chalk grassland is also a national stronghold for the internationally rare early gentian and supports a wide range of orchids. ■ The Isle of Wight is one of the few places in England where red squirrels still thrive in their native habitat of semi-natural broadleaved woodland, although they have also colonised the more recent conifer plantations.
Sense of place maintained by vernacular architecture and predominantly pre-20th-century settlement and development patterns.	■ Simple vernacular cottages built from local materials are typically found in western and southern villages such as Brading and Shorewell. Local brick buildings are common and indicate a strong Victorian influence within the towns. ■ Local limestone and sandstones are the main traditional building materials although differing geologies give rise to variations. These stone buildings have dominated the older 'church and manor' settlements which are scattered across the landscape such as Carisbrooke Castle and Godshill Church. ■ Grand Regency town houses are traditionally found on the Island's coastal towns of the Island such as Ryde and Sandown contributing to the Island's sense of place. ■ Victorian villa architecture and exotic ornamental planting is prominent at Osborne House, the seaside palace where Queen Victoria lived with Prince Albert and their nine children. ■ A few ancient buildings are roofed with a combination of limestone slabs and tile upper courses reflecting urban expansion patterns which have spread into former agricultural land. Thatched roofs are also prominent on a range of buildings throughout the Island. ■ Settlement patterns vary, and include small villages and dispersed settlement, medieval planned towns, post-medieval towns, 19th-century seaside resorts and 20th-century development. ■ Springline settlement and other settlement patterns directly related to landscape and landform, highlighting how Islanders took advantage of sources of fresh water, shelter from prevailing winds and / or were linked with the local church and manor.

Landscape attribute	Justification for selection
Rights of way, open access land and other recreational opportunities.	■ The Island has 799 km of public rights of way providing very good foot and cycle access to the countryside, and links with urban areas. ■ Open access land covers 4 per cent of the Island, and is largely associated with the grassland of the chalk ridge, including the Tennyson Trail in the west stretching from the Needles to Carisbrooke, with its far-reaching views. ■ Seaside resorts of Ventnor, Ryde, Alum Bay and Blackgang Chine offer more traditional family recreation. ■ The Solent is one of the busiest sailing waters in the world, especially in the annual Cowes Week regatta. ■ Isle of Wight and Bestival music festivals are some of the most popular in England. ■ The Isle of Wight Walking Festival takes place annually in May and includes over 300 walks; spanning two weeks, it is one of the largest walking festivals in the UK. ■ The Island's farmland, downs, woodlands, coasts and estuaries also provide opportunities for recreational activities include cycling, horse-riding, sailing, surfing, windsurfing and fishing.
Large town of Newport and main towns of Ryde, Cowes, East Cowes, Sandown and Shanklin are all on the coast. Western and southern parts of the Island are rural in character with small towns, villages, hamlets and farmsteads.	■ Newport is the largest town and the Island's 'capital' with a population of around 23,000, providing the Island's only large inland settlement. ■ Other coastal towns provide a strong sense of history with their distinctive architecture and Victorian associations such as the popular town of town of Sandown, a traditional seaside resort with a long Victorian Pier and extensive stretches of soft golden sands. ■ The west coast of the Island is known as West Wight and includes the ancient port town of Yarmouth, home to the Tudor Yarmouth castle and the Victorian village of Freshwater. ■ Ryde, in the east of the Island, is known as 'Town on the Beach' and boasts boutique and independent shops and cafes set on an expanse of sandy beach; coastal villages here include Seaview and Bembridge. ■ Brading, in the south, is one of the Island's oldest towns, set within the Isle of Wight AONB and including Brading Roman Villa which provides insight into some of the many relics that have been found from the Roman period in the area. The Brading Downs provide some of the most spectacular views across the Island looking out across Culver Down and Sandown Bay, making the area very popular for walking and exploration. ■ Further south along the coast lies the charming town of Ventnor, a Victorian health resort set on a hill with vintage shops and a sheltered beach. ■ Cowes is located on the west bank of the estuary of the River Medina, facing the smaller town of East Cowes on the east bank. The two towns are linked by the Cowes floating bridge. Cowes is internationally famed for its sailing events.

Landscape attribute	Justification for selection
A remote and tranquil landscape at times and in places wild and exposed providing a strong sense of tranquillity and the opportunity to experience dark skies.	■ CPRE data highlights a notable increase in disturbance with 'undisturbed' areas having decreased from 70 per cent in the 1960s to just under 40 per cent in 2007. ■ The CPRE map of tranquillity reveals that much of the NCA is relatively tranquil away from the coast and urban centres of Newport, Ryde, and Sandown and Shanklin and major roads. The west of the Island has more extensive areas of tranquillity than the east. ■ A sense of tranquillity is particularly associated with the undeveloped estuaries and southern chalk cliff coastline, the areas of ancient and semi-natural woodland, the areas of semi-natural grassland, and the quieter hamlets and villages. ■ The Isle of Wight has a majority of the total of the south east of England's 'dark skies' and research concluded that 'the Isle of Wight has potentially the best combination of dark skies and clear weather in the UK'.

Landscape opportunities

- Ensure that the essential character of the landforms and processes underpinning the character of this NCA are protected from inappropriate developments or land use change.
- Recognise the intrinsic link between geology, natural coastal processes and landscape which is crucial to the character and special qualities of the Island.
- Recognise and implement the objectives of the Isle of Wight Local Geodiversity Action Plan and Historic Environment Action Plan.
- Protect important geological, geomorphological and archaeological sites and assets from erosion, damage and loss due to inappropriate land management and developments that will compromise their contribution to the landscape.
- Protect and manage all Scheduled Ancient Monuments, ensuring that those currently found on the Heritage at Risk register are given priority. Ensure that the suite of local heritage assets and features are managed to the best standard possible.
- Manage conifer dominated plantations with a view to restoration where they occur on ancient woodland sites and wood pasture with due regard to economic forestry and recreation.
- Actively manage existing woodlands adopting tradition methods such as coppice with standards where feasible. Continue to plant new woodland to reinforce the existing pattern of woodland cover, and provide ecological connectivity. Where planting does take place it should respect historic landscape features and / or restore former woodland / hedgerow features.
- Restore hedge banks, small woodlands and estate landscapes to reinforce the structure and historic pattern of enclosure and land use.
- Maintain hedgerows and restock where sparse, reflecting local styles of management and the characteristic hedgerow pattern of the area. Where appropriate plant new hedgerow trees.
- Undertake archaeological research to better understand ancient routeways and their features in order to inform appropriate management.
- Ensure that watercourses are reconnected with the landscapes through which they flow. Re-connecting watercourses and their flood plains is important both for ecosystems and ecosystem services, while reconnecting water courses with the settlements they flow through or close to helps people appreciate the Island's rivers.
- Create and allow for new saline lagoons to develop along the Solent shore of the Island provided these do not damage existing important coastal habitats.
- Managing scrub and woodland to maintain expansive views from the elevated chalk ridge, as well as the open character of the southern arable plains and the more intimate pastoral landscape of the north.
- Manage and restore the existing suite of semi-natural calcareous grasslands and the important associated habitats found within and around them. Increase the resilience of these sites to environmental changes by creating new semi-natural calcareous grasslands and associated habitats that extend, buffer and link them.
- Maintain and restore unimproved neutral and acid damp pastures and meadows.

Continued on next page...

Landscape opportunities continued...

- Enhance the physical and mental wellbeing of Island residents and visitors alike through experiential contact with the landscape, biodiversity and cultural artefacts of the Isle of Wight NCA.
- Work with Isle of Wight AONB to help meet the ambitions of their management plan.
- Ensure that all development is designed to a high quality, creating buildings and a sense of place that reflects and enhances local character and distinctiveness.
- Ensure ongoing access to and space for recreation and leisure activities, both along the coast and within the secluded, enclosed river valleys.
- Improve sustainable public access through the rights-of-way network, provision of visitor facilities, and access to and interpretation of important sites for geodiversity, biodiversity and heritage.
- Identify and promote viewpoints that enable appreciation and experience of the tranquillity and outstanding natural beauty of the Isle of Wight landscape by people of all abilities.

Yarmouth is positioned around a natural harbour on the west of the Island.

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	Climate Geology Cattle Dairy Crops including cereals and garlic Horticulture Vineyards	Most of the agricultural land is Grade 3 (78 per cent) with just 3 per cent of Grade 2, and 3 per cent Grade 4. The underlying geology and diversity of landform dictates the suitability for farming practices and has led to a mixed patchwork landscape, traditionally of small scale farmsteads (nearly half of the holdings are below 20 ha). Over half the farmed land is grass or uncropped, whilst 32 per cent is cultivated for cereals, root crops, oilseeds and other arable crops. There are a number of horticultural holdings. **Continued on next page...**	Regional	Food production from a mixed farming landscape is a key service in this area. The levels and type of food produced reflect the favourable climatic conditions and the versatility and productivity of the area. Changes in climate and weather patterns may challenge the traditional outputs from the area, but new opportunities may also arise. Maintaining soil structure and condition will also be necessary to maximise adaptability. The importance of agriculture, both in the past and as a current influence on landscape character, historic and natural environments should not be understated. There is a need to support and encourage sympathetic land management practices for their landscape benefits and to continue to providing high quality local Island produce. This is partly delivered through EU funded agri-environment schemes designed to add landscape, ecological and cultural value.	Work with local farmers and landowners to support and encourage sustainable farming to ensure productivity remains high without adversely impacting ecosystem services such as soil and water quality, heritage and biodiversity. Encourage the uptake of agri-environment schemes to contribute to providing high quality Island produce and maintain the mixed farming landscape character. Continue to work with the local farming community to explore how and where to increase the overall carrying capacity of livestock across the Island while avoiding adverse impacts on other ecosystem services such as soil and water quality.	**Food provision** **Sense of place/ inspiration** **Sense of history** **Regulating soil quality** **Regulating soil erosion**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision cont.		**... continued from previous page** Many smaller farms continue to rely on mixed activities; however this now encompasses diversification activities such as tourism (holiday lets), retail (farm shops) and more recently renewable energy production such as solar power and bio-fuels. The Island has three local vineyards including Adgestone which is one of the oldest vineyards in Britain. The southerly location also makes for good chilli and asparagus growing conditions. The Isle of Wight garlic farm in the east of the Island is the UK's largest specialist garlic grower. The warm climate, long hours of sunshine, underlying diversity of geology and soils and good access to ground water and aquifers facilitate the production of food here.		Uptake of agri-environment schemes should be encouraged and further development of farmer markets would also continue to promote and highlight the Island as a key provider of high quality local food and drink. Risks associated with the viability of farming on the Island are heightened by the fact that Island status incurs additional cost of transport to processing centres and markets on the mainland. Island farmers face additional disadvantages through the lack of local supportive infrastructure. Livestock farmers are increasingly under pressure as rising prices and changing legislation create difficulties exacerbated by the lack of an abattoir or incinerator. Local farmers markets and local restaurants provide a good outlet for locally grown food, for both tourists and local residents.	Identify areas where reduced stocking rates or changes in management techniques would positively influence water quality and reduce potential soil erosion, while maintaining viable levels of productivity. Encourage the development of farmers markets to promote local food, thus contributing to sense of place and highlighting the intrinsic relationship between farming activities and the Island landscape.	

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Coniferous woodland Broadleaved woodland Copses Ancient re-planted woodland (PAWS)	Overall the provision of timber is low, and the 13 per cent of woodland cover is mainly comprised of smaller broadleaved woods and copses. Around 4 per cent of the Island's woodland is classified as ancient semi-natural woodland or ancient re-planted woodland. The majority of woodlands are located on wetter soils and are predominant landscape features north of the central chalk ridge. Where they do occur near the chalk downland or sandstone hills they tend to be on steep slopes. Secondary woodland areas are also found on coastal slopes. Plantation woodlands such as Brightstone and Parkhurst Forests which comprise both coniferous and broadleaved woodland are currently managed for timber production, whilst also being managed for key species such as red squirrel, and providing recreational opportunities.	Local	Woodland on the Island is generally under-managed and timber production is a marginal activity as the value of the timber is low and transport to the mainland is expensive. There are therefore opportunities for encouraging greater emphasis on local woodland markets thus increasing sustainability. Opportunities for commercial timber production from conifer plantation are limited within this area and much of the broadleaved woodland is either of high nature conservation value or has limited access. Bringing the broad-leaved woodland under traditional management would provide some potential for provision of timber, but only to local markets. Increased biodiversity and soil stability may result from positive, targeted management. There are opportunities to increase woodland cover in the area, which could improve rainwater infiltration and reduce river flood flows. This needs to be done in accordance with the landscape character and without adverse impacts for archaeology, biodiversity or food provision. **Continued on next page...**	Explore opportunities to bring existing deciduous woodland into traditional management where possible to create a local supply of timber for local wood products and provide benefits for biodiversity and soil quality and erosion. Explore opportunities for clearance of timber from some conifer plantations and restore to more valuable semi natural habitats, while ensuring conifer is retained as appropriate for the red squirrel population. Explore opportunities to increase woodland cover to contribute to regulating water flow and water quality while ensuring that damage to important wildlife habitats and archaeological sites are avoided. Explore opportunities to develop initiatives to improve the viability of local woodlands and wood fuel markets.	**Timber provision** **Biodiversity** **Sense of history** **Regulating water flow** **Regulating water quality** **Regulating soil quality** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision cont.				**... continued from previous page** Clearance of timber from some conifer plantations may provide opportunities to restore to more valuable semi-natural habitats. However, some conifer retention is necessary for the red squirrel population and Scots pine is a feature across the Island on the sandstone south of the chalk ridge. There may also be opportunities, for example through European funding sources, to develop initiatives to improve the viability of local woodlands.		
Water availability	Aquifer Rivers Chalk springs Soils	The main rivers are the Medina and the Eastern Yar, both rising as springs from the chalk of the Southern Downs and gaining flow as they cross the Lower Greensand. There are three major aquifers on the Isle of Wight, all of which are heavily abstracted. Two are below the outcrops of chalk and upper greensand in the central ridge and the Southern Downs and the third is under a substantial area of sands and clays, the Lower Greensand, in the southern half of the Island. **Continued on next page...**	Regional	The Island's aquifers provide most of the water supply for the area. However, they are fully or over used. Extra demand is met by importing water from the River Test in Hampshire through an under-sea pipeline; this supplies about a quarter of the Island's needs. Of all the Water Resources Management Units assessed by the Environment Agency on the Island, nearly all are classified as over-licensed or over-abstracted. The Isle of Wight Catchment Abstraction Management Strategy (CAMS) identified future housing development pressures on public water supply as a main issue.	Explore ways to increase the water retention ability of the soils, and improve infiltration rates and reduce the rate of water loss through maintaining and establishing semi-natural habitats including woodland, grassland and scrub. Target drainage management to increase the Island's self-sufficiency in water provision.	**Water availability** **Regulating water quality** **Climate regulation** **Regulating soil quality** **Biodiversity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability cont.		**... continued from previous page** Most (78 per cent) of the water abstracted on the Island is used for public water supply. Of this, some 68 per cent is abstracted from groundwater sources, with the remainder from surface water. The public water supply is also dependent upon the import of water from the mainland via an under-sea pipeline which supplies about a quarter the Island's needs. The supply comes from the River Test at Testwood. Two augmentation schemes discharge water into the Eastern Yar upstream of Sandown and at Blackwater, fed by groundwater from boreholes. The Eastern Yar is classed as being 'over abstracted', as is a tributary of the Medina (Lukely Brook), while the Medina itself is 'over licensed'. One small stream on the southwest coast has water available (Brightstone Stream). The Southern Downs Chalk aquifer has 'no water available', while the Central Chalk East and the Lower Greensand aquifers are 'over licensed' and the Central Chalk West aquifer is 'over abstracted'.		With increased development in South Hampshire and potential impacts of climate change, there may be growing pressure on the supply from the River Test. Additionally there is an energy cost associated with the pumping and balancing the water system network. There is a need for the Island to achieve greater self-sufficiency. Agriculture and horticulture are important economic activities reliant on water resources for irrigation, but most growers have constructed or are constructing winter-fill reservoirs, in line with Environment Agency policy. The River Basin Management Plan states that for the Island to become more self-sufficient in water resources, it is critical to improve water efficiency and protect the groundwater from pollution[6]. **Continued on next page...**	Manage farmland to minimise run-off, encouraging the use of contour ploughing, buffer and infield strips, restoring hedgerows and targeting scrub growth. Advocate greater self-sufficiency for fresh water and promote sustainable practices in rain water capture and use. Consider practices such as use of water efficiency kits, asset improvement schemes for groundwater sources and optimisation of cross-Solent inter-zonal transfers. Continue to mitigate low flows in the Lukely Brook caused by abstraction at Bowcombe to improve water availability and improve consistent water availability.	

[6] *Isle of Wight Core Strategy*, Isle of Wight Council, 2012

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability cont.				**... continued from previous page** The move to slow irrigation allows more accurate scheduling of irrigation with less wastage from run-off. Land management practices, such as minimising compaction, are important to improving soil structure, water infiltration, and storage of surface water run-off. There are actions to mitigate low flows in the Lukely Brook caused by abstraction at Bowcombe. Other measures can be taken to reduce use of water and improve capture and use of rain water, as set out in the Southern Water Resources Management Plan 2010-2035.[7] The Island's varied wetlands support an exceptional variety of wildlife, including some of the most important water vole populations in the UK, all of which are dependent upon an adequate supply of water.		

[7] For more details see www.southernwater.co.uk/pdf/about-us/publications/wrmp/FWRMP_Main20Rept20_combined_Sep200920Final.pdf –

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Genetic diversity	Varieties of garlic such as Solent Wight and Elephant Garlic	The Island's sunny climate affords suitable growing conditions for a range of more non-traditional crops including garlic. Grown on the Island since the 1960s the Isle of Wight is the now England's largest specialist garlic grower supplying all areas of the mainland.	National	The Isle of Wight Garlic Farm has sourced garlic from over Europe to test crops on Island soils and to take advantage of the mild climate. As a result a range of varieties of garlic are grown contributing to high quality Island food products and providing supplies for the mainland.	Maintain garlic variety collections such as Solent Wight and Elephant Garlic. Raise awareness of local varieties and explore opportunities to promote garlic as a distinctive Island food product.	**Genetic diversity** **Food provision** **Sense of place/ inspiration**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biomass energy	Existing conifer plantations Broadleaved and coppice woodlands	Woodland currently covers some 5,000 ha (13 per cent) of the area. Of this, broadleaved woodland accounts for 3,887 ha. The existing woodland offers high potential for the provision of biomass, both through bringing unmanaged woodland under sensitive management or as a by-product of timber production. Most of the NCA has a low potential yield for short rotation coppice (SRC), with areas of medium potential occurring in the north and west of the Island. Miscanthus yield is potentially high throughout the area apart from a very small area in the south east around Ventnor where it is low. Further information on the potential landscape impacts of biomass plantings within the NCA can be found on the Natural England website[8].	Local	It may be possible to produce some biomass as a result of bringing woodlands into management, particularly through traditional coppice management of deciduous woodland. Carefully located miscanthus and SRC can provide potential climate change regulation benefits without significant impact on other services. SRC can also help improve connectivity between woodland areas helping woodland biodiversity. Inappropriately sited, both can have negative impacts on both sense of place and biodiversity. SRC and miscanthus would be impractical on steep valley sides but there are possible opportunities on lower slopes and where valleys open out to flood plains. There would be benefits in including small copses and beech and ash woodland on the lower slopes of the downs. Key habitats and archaeological sites and their settings would need to be avoided in order to respect historic landscape character and biodiversity interest.	Explore opportunities to bring local woodlands into traditional coppice management to generate supply for wood fuel initiatives. Consider supporting the opening up of further woodlands to sensitive harvesting of timber for wood fuel. Planting of suitable native broadleaved species for biomass could be accommodated on lower slopes. Explore the possibility of under managed hedges and hedgerow trees being managed for biomass provision.	**Biomass energy** **Biodiversity** **Sense of place/ inspiration**

[8] http://www.naturalengland.org.uk/ourwork/farming/funding/ecs/sitings/areas/default.aspx

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	Occasional peaty soils Some organic rich top soils Existing woodland Estuaries, wetlands, grazing marsh and permanent pastures	The majority of the soils are mineral soils that can be low in organic matter where under continuous arable cultivation, and less effective at storing carbon. Some of the flood plain soil types are peaty at depth or include small areas of peaty soils, while some variants of the coastal soils may have more organic rich topsoils, which means they more effectively store carbon. The woodland cover creates humus-rich soils that have higher carbon levels and there are carbon stores locked in the wetlands and areas of permanent pasture. The 13 per cent woodland cover makes a contribution to the sequestration and storage of atmospheric carbon dioxide.	Local	The river valleys of the Medina and Eastern Yar have peaty soils around the flood plain, which, if sustainable managed, will continue to store carbon. The heavier soils on the Wealden clay store significant amounts of carbon and should be maintained in this way. The soils of ancient semi-natural woodland sites particularly around. Havenstreet in the north east of the Island store significant amounts of carbon and if sustainably managed will continue to make a contribution to the capture of carbon. Estuarine habitats, particularly mud flats, reed beds and marsh, have high carbon content. While expanding the areas of these habitats may be restricted by topographic and fluvial systems, they should be allowed to develop and expand naturally and remain undisturbed. Expansion of woodland on suitable sites could help increase carbon sequestration while also offering increases in biodiversity, regulating soil erosion and water availability.	Ensure that areas with peaty soils are managed well to maintain high water levels and prevent extreme drying out and subsequent loss of carbon dioxide. Explore opportunities to expand the area of woodland adjacent to existing ancient semi-natural woodlands to realise the potential for further long-term carbon sequestration and storage in relation to woodland management. Seek opportunities to manage organic matter inputs in soils and employ sympathetic cultivation techniques to reduce soil carbon loss and improve soil carbon storage and sequestration. Conduct climate vulnerability mapping to identify priority at-risk sites, settlements, developments and properties across the Island.	**Climate regulation** **Regulating water quality** **Water availability** **Regulating soil quality**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	Aquifer Rivers and streams Semi-natural habitats	The water quality of much of the Eastern Yar, Monktonmead Brook, and several smaller rivers is poor, due to phosphorus, ammonia and dissolved oxygen levels. These rivers are therefore classed as being of moderate ecological quality, while Rodge Brook, near Yarmouth, is classed as being of bad ecological quality. However, water quality in the Medina is good. The southern coastal water has good ecological quality. However, the entire Solent and northern coast is only classed as moderate ecological quality. This is largely due to high levels of nitrogen which cause excessive growths of opportunistic macro-algae (green seaweed) in the estuaries and harbours. Groundwater is of good chemical quality throughout the majority of the NCA apart from a small but significant section in the southeast, where pesticide pollution is causing poor chemical status of the Isle of Wight Southern Chalk groundwater body. **Continued on next page...**	Regional	Water quality issues on the Island arise from a combination of sources including treated sewage discharges, storm water effluent, misconnections, domestic septic tanks and inappropriate farming practices. Pollution and low flow are considered to be the major threats to the ecological quality of the freshwater habitats on the Island. Sustainable management practices such as encouraged under the catchment sensitive farming initiative are essential to the health of the Island's environment. Models suggest that much of the nitrogen affecting the Island's estuaries and coastal water bodies comes from coastal background marine sources and diffuse riverine sources[9]. Restoration and creation of low input chalk grassland within river catchments could help to reduce nutrient run-off, improve the quality of the rivers and ensure that the water reaching the aquifer is of good quality.	Work with Environment Agency to carry out investigative riverine and land based field work into the origins, causes of and solutions to pollution issues. Work with farmers and landowners to encourage the adoption of sustainable catchment sensitive farming practices. Support initiatives and approaches that help to ensure good quality bathing water. Support improvements to sewage treatment works, to reduce the quantity of pollutants that are discharged to rivers. Support the delivery of the Water Framework Directive, ensuring that approaches to achieve water quality objectives as set out in the River Basin Management Plan are adopted.	**Regulating water quality** **Regulating soil quality** **Regulating soil erosion** **Regulating water flow** **Recreation** **Biodiversity**

[9] http://www.environment-agency.gov.uk/business/topics/water/132669.aspx

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality cont.		**... continued from previous page** The Island's range of semi natural habitats such as woodlands and riparian vegetation has a key role to play in preventing sediment and pollutants from reaching watercourses. 28,892 ha (76 per cent) of the Island is classified as a Nitrate Vulnerable Zone.		Catchment Sensitive Farming Schemes provide practical solutions and targeted support to enable farmers and land managers to take voluntary action to reduce diffuse water pollution from agriculture. The South East River Basin Management Plan sets out a number of approaches to adopt to improve water quality, which will meet the requirements of the Water Framework Directive[10].	Explore opportunities for the expansion of semi-natural wetland habitats adjacent to watercourses to act as nutrient sinks and creation of grassland buffer strips across slopes within catchments to reduce sediment and nutrient run-off and improve the quality of rivers.	

[10] http://www.environment-agency.gov.uk/research/planning/140088.aspx

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water flow	Aquifers, rivers and chalk streams Semi-natural, habitats such as woodland, wetland, hedgerows Coastal habitats such as clay and chalk cliffs and saltmarsh	Serious flooding does not occur very often on the Isle of Wight, and extreme flooding is very rare. Risks are currently greatest in Ryde (due to surface water and river flooding of Monksmead Brook), Freshwater (due to river flooding of the Western Yar) and Newport (flooding of the Medina and Lukely Brook). Tidal conditions, exacerbated by the double high tides of the Solent can have a significant influence on river flooding. Many rivers and streams on the Island, including the Medina, are classed as being of only moderate ecological status due to physical modifications of the river channels. River restoration is underway on the Medina and planned for Lukely Brook to reinstate the natural channel where possible and help alleviate flooding at Newport. Flood risk management and resilience measures are required in Ryde. A tidal sluice at Bembridge prevents tidal ingress up the Eastern Yar, though this can also lead to tide-locked fluvial flooding.	Local	Storage of flood waters and management of run-off is identified as preferred policy in both the Eastern Yar and Upper Medina, both alleviating flooding and sustaining wetland habitats through inundation. The Isle of Wight Strategic Flood Risk Assessment further identifies reducing run-off through improved management of agricultural land as a key element in alleviating flooding along the Island's river[11]. One reason for failure in the water environment of the Island is modification of the form and function of the river channels, to alleviate flood risk and facilitate land drainage. Non-native invasive species and other vegetation choking up the banks are also significant issues. To address this, work has been undertaken to remove Himalayan balsam and Japanese knotweed from the watercourses. There is scope to address wetland restoration along the Eastern Yar, with meander restoration in the lower stretches, and eradication of non-native invasive species on Wroxall Stream, Monktonmead Brook and other East Wight areas. **Continued on next page...**	Adopt the principles of the Island's Strategic Flood Risk Assessment, to reconnect rivers and estuaries to natural flood plains, thus utilising natural flood storage. Expand areas of woodland and restore semi-natural grassland from arable on slopes, to improve infiltration and thus slow down run-off. Expand areas of wetland habitats where possible, to reduce flow rates and improve infiltration and water storage. Explore opportunities to protect and manage the flood plain of the Eastern Yar which fulfils an important local role in flood management and nature conservation, while including opportunities for access, recreation and education where possible.	**Regulating water flow** **Regulating water quality** **Regulating soil erosion** **Regulating soil quality** **Water availability** **Biodiversity**

[11] *Isle of Wight Strategic Flood Risk Assessment*, Isle of Wight Council (2007)

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water flow cont.				**... continued from previous page** There is scope to restore mid-sections of the Lukely Brook to improve its resilience to low flows due to abstraction in Carisbrooke. There is potential to increase the regulation of river flooding, but also to increase biodiversity and water availability through the expansion of wetlands. Similarly an increase in the area of woodlands on steep slopes will also improve infiltration and thus reduce soil erosion.	Support proposals for river restoration of mid-sections of the Lukely Brook to improve its resilience to low flows. In arable areas, introduce techniques that help to slow flows and improve water penetration into the soil. This will include soil structure restoration, restoration of hedgerows, contour ploughing, continuous cover and minimal tillage systems. Promote appropriate on-site sustainable draining systems (SUDS) for the disposal of surface water in order to ensure there is no net loss of flood storage capacity or impact on water quality. Work with Island Rivers and East Wight partnership to consider actions for improvements to modification of the form and function of the river channels.	

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality	Freely draining slightly acid loamy soils Slowly permeable seasonally wet, slightly acid soils Slightly acid loamy and clayey soils with impeded drainage Shallow lime rich soils over chalk or limestone Other fertile loamy brown soils	The Island soils include almost every type of soil found in south-east England: ■ Freely draining slightly acid loamy soils (covering 37 per cent of the NCA). ■ Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (31 per cent). ■ Slightly acid loamy and clayey soils with impeded drainage (16 per cent). ■ Shallow lime-rich soils over chalk or limestone (11 per cent). ■ Freely draining lime-rich loamy soils (2 per cent. ■ Loamy and clayey flood plain soils with naturally high groundwater (1 per cent). ■ Loamy and clayey soils of coastal flats with naturally high groundwater (1 per cent).	Local	The soils in the north of the Island are generally heavy and difficult to drain without extensive under-drainage. Much of this region of the Island remains under pasture or ancient woodland, although modern ploughing techniques have enabled more areas to be bought into cultivation. The freely draining slightly acid loamy soils and the shallow lime-rich soils over chalk or limestone which together cover nearly half of the area are 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. The latter soils are typically shallow and droughty but due to their calcareous nature have a degree of natural resilience, while both soils have the potential for increased organic matter levels through management interventions. The slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils 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. Adopting farming practices to increase organic matter levels can help reduce these problems. **Continued on next page...**	Ensure levels of long-established organic matter are maintained in higher-value agricultural soils, minimising tillage operations where possible. Seek to maintain and improve the stability of the Island's peat soils and consider re-vegetation with semi-natural vegetation where there are small, exposed areas of peat soil. Support policies and programmes that encourage sustainable soil management and catchment sensitive farming practices.	**Regulating soil quality** **Regulating water flow** **Regulating water quality** **Regulating soil erosion**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality cont.				**... continued from previous page** The slightly acid loamy and clayey soils with impeded drainage are easily poached by livestock and compacted by machinery when the soil is wet, and careful timing of activities is required to reduce the likelihood of soil compaction. It is possible that organic matter is being lost through tillage in the more intensively farmed areas. Lack of long established organic matter makes soils more susceptible to compaction and erosion. Good agricultural practices as outlined through Catchment Sensitive Farming practices, in particular to increase organic matter, would help to improve and maintain good soil quality and reduce diffuse pollution.		

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils (31 per cent) Slightly acid loamy and clayey soils with impeded drainage (16 per cent) Shallow lime-rich soils over chalk or limestone (11 per cent) Freely draining lime-rich loamy soils (2 per cent) Loamy and clayey flood plain soils with naturally high groundwater(1 per cent) Loamy and clayey soils of coastal flats with naturally high groundwater (1 per cent)	Around two-thirds of the NCA is susceptible to some form of soil erosion. The freely draining loamy soils, the lime-rich soils over chalk and some of the lime-rich loams (together covering half of the area) have enhanced risk of soil erosion on moderately or steeply sloping land where cultivated or bare soil is exposed, exacerbated where organic matter levels are low after continuous arable cultivation or where soils are compacted. The lime-rich soils over chalk are also particularly at risk where bare soil is exposed along footpaths and tracks or as a result of outdoor pig rearing, while there is the further potential for wind erosion on some coarse textured cultivated variants of the freely-draining loams. Many of the slightly acid loamy / clayey soils with impeded drainage (16 per cent) are prone to capping / slaking, leading to increased risk of erosion. Soils are easily compacted by machinery or livestock if accessed when wet, increasing the risks of soil erosion by surface water run-off, especially on steeper slopes. The wet base-rich, flood plain and coastal soils (together covering a third of the area) are all at low risk of soil erosion.	Local	Wealden clay produces heavy soils and mostly supports pasture. These heavier soils are less prone to loss through both wind and water erosion, but damage from poaching by livestock may occur. The chalk gives rise to thin lime rich soils, which support distinctive vegetation. Soils associated with the Lower Greensands produce some of the best arable land although the lighter nature of the soil does make it vulnerable to wind and water erosion.	Explore opportunities for introducing permanent grassland, woodland and restoring field boundaries in areas that are particularly prone to soil erosion or adjacent to the Medina and Eastern Yar rivers. Enhance the quality and vegetation of improved and semi-natural grasslands through optimised grazing regimes to prevent poaching and soil compaction and enhance ability of the surface to capture and slow surface water flow. Adopt management of soils with impeded drainage to avoid compaction and poaching during wet conditions. Maintain permanent pasture and encourage management for increased water holding capacity.	**Regulating soil erosion** **Regulating soil quality** **Climate regulation** **Food provision**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Lowland calcareous grassland, grazing marsh and meadows Lowland heathland Road verges and hedgerows	The NCA has over 1,000 ha of grasslands (calcareous grassland in particular) and heathland, along with networks of hedgerows and species rich road verges, which all provide important nectar sources for pollinating insects.	Local	The widespread areas of calcareous grassland, along with grazing marsh and meadows, provide important nectar sources, supporting an array of pollinating invertebrates. This contributes to the Island's local food production viability and security. Grassland may come under threat due to changes in land management or changes in land use practices such as the breaking up of traditional farm units for use as pony paddocks. Sympathetic management of road verges can generate an important connected network of nectar source and also contribute to the Island's character and sense of identity.	Increase the area of semi-natural habitats, particularly field margins, grasslands and heathlands. Support the introduction of nectar and forage mixes in arable land and also the development of species-rich grasslands. Enhance the diversity of hedgebanks to increase the range of flowering plants, and increase the area and range of habitat mosaics linking existing sites to provide nectar sources for pollinators. Encourage sympathetic management of sites beneficial to pollinators, including appropriate management of roadside verges and hedgebanks.	**Pollination** **Pest regulation** **Biodiversity** **Sense of place/ inspiration** **Food provision**
Pest regulation	Semi-natural habitats	The extensive species-rich and structurally diverse semi-natural habitats within this NCA will support pest-regulating species but the importance of this resource to commercial crop production is limited by distance.	Local	Regulation of pest species by natural predators can be encouraged through the provision of appropriate habitats and resources. The greater the diversity and complexity of habitats the more predator and parasitoid species are likely to be supported.	Seek opportunities to link the semi-natural habitats within arable farmland through the enhancement of networks of species-rich grassland, woodland, hedges and field margins, to support pest predators and enable their movement. Seek opportunities to increase diversity of structure and composition within areas of semi-natural habitat to support a variety of pest regulating species.	**Pest regulation** **Food provision** **Biodiversity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating coastal erosion and flooding	Chalk cliffs Series of bays with protective beaches Shingle ridges and bars Estuaries and estuarine habitats	The coast is of particular significance to this island NCA, which is heavily reliant on its shoreline for tourism and marine industries. Many settlements are located along the coastline. The continual erosion, transport and deposition of sediments creates the great diversity of coastal habitats found around the Island. These include maritime cliffs and slopes, coastal saltmarsh, coastal saline lagoons, intertidal sand and mudflats and seagrass, grazing marshes, intertidal and subtidal rocky reefs and caves, estuaries and coastal woodland. Marine erosion has continued around most of the Island to produce a seemingly continuous cliff line that varies greatly in terms of erosion rates and landslide activity, creating the distinctive coastline that so defines the area. The northern shores of the Island are composed mainly of soft and slumping clay cliffs and sheltered estuarine creeks and harbours, while the coastal habitats of the south of the Island by contrast consist mainly of high chalk cliffs and softer cliffs composed of sand and clay that slump into a series of grassy terraces. **Continued on next page...**	Local	The Shoreline Management Plan[12] policy for much of the coastline is 'no active intervention', allowing natural change to continue uninterrupted along long stretches of the south-western and northern coasts. This will ensure the continued supply of sediment to local beaches, thus retaining the significant geological and wildlife conservation interest of the area. This means that most of the coastline is subject to natural erosion processes being unprotected from the action of the sea and prevailing winter storms. The continuing coastal erosion of the Wealden clays of the south west allows fossil hunters to find plenty of loose material in which to search for fossils without the need to further damage the cliffs. The soft cliffs are liable to cliff falls and slumping and this creates the many cliff habitats upon which many rare plants and animals are dependent, while also creating the rock exposures that are of such geological importance.	Allow for the continuation of natural processes and encourage strategic approaches to deal with areas where this may create potential conflict with socio-economic considerations. Restore the belt of unimproved grassland at the top of coastal cliffs, through arable reversion, to replace that lost through coastal erosion and establish the principle of 'roll-back' to maintain semi-natural margins and access routes. Promote interpretations and understanding of the habitats, geology and geomorphology of coastal cliffs and encourage responsible fossil hunting without the need for digging to prevent damage. Explore opportunities for managing erosion in the gullies of the South West chines to prevent deterioration of habitat for butterflies, bees and other wildlife.	**Regulating coastal erosion and flooding** **Sense of place/ inspiration** **Biodiversity** **Geodiversity**

[12] http://www.coastalwight.gov.uk/smp/

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating coastal erosion and flooding cont.		**... continued from previous page** The south coast is particularly vulnerable to storm waves from the Atlantic and many sections the coast are subject to rapid rates of erosion.		'Hold the line' policies are in place where development requires protection, including Yarmouth, Cowes, Newport, Ryde, Bembridge Harbour, Sandown, Shanklin and Ventnor. This is likely to lead to coastal squeeze in places and a reduction in intertidal habitat area. Erosion in the gullies of the south-west chines should be managed to prevent deterioration of habitat for butterflies, bees and other wildlife. This will involve maintaining flows at critical times of the year and working with Island Roads to ensure that the road work programme on Military Road accommodates this.		

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
A sense of place/ inspiration	Wide ranging views including sea and sky Distinctive and dynamic coastline Chalk ridge and chalk downs Variable woodland cover A mix of agricultural land uses Hedgerows Wide range of semi-natural habitats including chalk grasslands, heathland and wetlands Traditional vernacular design Historical landscape features	The landscape is recognised for its highly varied and complex geology which gives rise to a remarkably diverse range of landscape types, and which has led to nearly half of the Island being designated Area of Outstanding Natural Beauty, along with long stretches defined as Heritage Coast. Senses of inspiration and escapism are particularly associated with the elevated chalk downs that offer far-reaching views over the sea, back to the mainland, and over large parts of the Island. The poet Tennyson lived in nearby Farringford House, and was inspired by the area along with many other authors. Local limestones and sandstones are the main traditional building materials. Vernacular architecture is found amongst the various settlements, reflecting local need, materials and approaches. The more intimate estuarine habitats and pockets of ancient woodland further provide further variety for inspiration. The juxtaposition of varied and distinctive landforms, diverse landcover and often sudden and dramatic views of the sea all contribute to an inspiring landscape.	National	The Island has a varied landscape, reflecting its underlying geology. The dominance of the sea and sky in many views provides a key sense of place. The coastal areas, inland plateau and chalk ridge and downs are distinctive and composed of coherent patterns of unifying elements such as the rias, coastal cliffs, mixed farming, hedgebanks and winding lanes which produce a harmonious yet clearly productive landscape. Much of the area has an 'unspoilt' character, although the larger conurbations bare influence on the surrounding rural landscape and in places are encroaching on the character. There is a need to ensure that repair, restoration or conversion of vernacular buildings is carried out with due regard to their historic environment, using local materials and techniques. The Island has played host to many internationally renowned artists and writers such as Lord Tennyson, John Keats and JB Priestley. The Island landscape continues to be a source of inspiration for writing, art, sculpture and photography.	Protect and enhance the dynamic coastline, with its distinctive estuaries, cliffs and wetlands. Maintain the essentially farmed character of the landscape and the many traditions associated with the area. Protect the distinctive rias from inappropriate development and enhance semi-natural woodland on steep valley sides. Consider the core components of natural beauty in relation to planning of development for towns and villages within and adjacent to the AONB. Support initiatives that celebrate the relationship between landscape, its use and people and landscape based cultural associations. Explore opportunities to conserve the cultural heritage of local authors and artists by maintaining the traditions that create the Island's distinctive landscape and local sense of place.	**Sense of place/ inspiration** **Sense of history** **Recreation** **Geodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Maritime and maritime military heritage Prehistoric features, flints and early ceremonial sites Open downland and heathland and historic enclosure patterns Vernacular architecture Roman Villa sites, medieval planned towns, Tudor and Jacobean manors and farmsteads Industrial archaeology Grand houses with designed parklands Scheduled monuments	The history of the landscape is evident in its close relationship with the sea since prehistoric times. The Island played a vital part in England's maritime history as the prime defence of the Solent ports, and the remains of fortifications are still evident around Yarmouth and Cowes. There are also visually prominent prehistoric burial mounds or barrows on the chalk ridge, Roman and medieval settlements including Newtown, an abandoned medieval town. Open downland and heathland date back to the woodland clearance of the Neolithic and in particular the bronze-age and iron-age periods. Ceremonial sites are also found, such The Longstone at Mottistone. **Continued on next page...**	Regional	The Island is rich in local customs and dialects. In Roman times it was known as 'Vectis' and this name is still used at the present day, particularly in connection with local businesses. People born on the Isle of Wight are traditionally known as 'Caulkheads', a name associated with ship building. Many Isle of Wight place-names are of Old English origin or contain Old English elements and were first recorded at the time of Domesday Book. The range of features present in the area allows for study of past human activity, informing current land management. Many heritage assets, such as the Scheduled Monuments, are fragile and highly susceptible to loss or damage due to direct and indirect impacts or inappropriate management. Maritime and coastal heritage assets are at particular risk from coastal erosion. Assets likely to be lost need timely and accurate recording.	Promote and celebrate the importance of the historic environment of the Island and encourage more opportunities for responsible access to and enjoyment of it. Ensure that any new development is designed to enhance the historic environment and to reinforce local character, distinctiveness and sense of place. Ensure that the repair, restoration or conversion of vernacular buildings is carried out with due regard to their historic environment, using local materials and techniques to maintain local distinctiveness, construction techniques and traditions. Encourage continued support for the objectives of the Historic Environment Action Plan.	**Sense of history** **Sense of place / inspiration** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history cont.		**... continued from previous page** Settlement patterns vary from small linear villages along the base of the chalk to Victorian seaside resorts, estates and villas along the coast. There are many historic buildings, such as Carisbrooke Castle and Osborne House, often with designed parkland landscapes and exotic ornamental gardens, particularly along the Undercliff and at Ryde, and including Appuldurcombe, Northcourt and Nunwell. Traditional buildings are constructed in characteristic local limestone and sandstones and dominate the older 'church and manor' settlements which are scattered across the landscape. Local brick buildings are common and indicate a strong Victorian influence within the towns. While agriculture has been the main industry of the Island there are relicts of salt making industry along the north coast and mineral extraction including chalk, greensand and Quarr stone.		Emphasis should be placed on the need to continue to protect and interpret the wealth of heritage present. It is important that new development should be designed to enhance the historic environment and to reinforce local character, distinctiveness and sense of place. There is a need for a partnership approach to the conservation of the historic landscape with the full involvement of farmers, landowners, environmental managers and local community groups in accordance with objectives of the Historic Environment Action Plan[13].		

[13] http://wightaonb.org.uk/explore/historic-environment-action-plan-guidance-and-publications/

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	Elevated chalk ridges and downs with long views and little disturbance Undeveloped rural inland farming landscapes Undeveloped, intimate and less accessible valleys, rias and estuaries Dark skies Ancient and semi-natural woodlands Historic parklands	Tranquillity has declined fairly significantly in recent years, with 'undisturbed' areas having decreased from 70 per cent in the 1960s to just less than 40 per cent in 2007. The largest areas of tranquillity lie away from the main transport corridors (A3020, A3054, A3055 and A3056) and the major settlements including Newport, Cowes, Ryde, Shanklin and Sandown. A sense of tranquillity on the Island is particularly associated with the undeveloped estuaries and the southern chalk cliff coastline, the areas of ancient and semi-natural woodland, the surviving areas of semi-natural grassland, and the quieter hamlets and villages. The lack of light pollution on the Island means that the night skies remain dark, which is rare in south east England.	Regional	Much of the area remains undeveloped, uncluttered and free from recent development, particularly on the inland plateau and along the less accessible parts of the coast. It is easy to find somewhere tranquil in secretive woodlands, on top of open down land, in hidden coves or out at sea. Seasonally, some of the coast and estuaries become a little less tranquil due to the many visitors to the area. Areas in the Isle of Wight AONB have a low population and little development, meaning tranquillity is higher in these areas. This is confirmed through the Campaign to Protect Rural England (CPRE) Tranquillity Mapping which shows the AONB as significantly more tranquil than other parts of the Isle of Wight and south east England. There are opportunities to further promote tranquillity as an asset in terms of well-being, escapism and access to nature. If well managed this could benefit the rural economy. The Isle of Wight AONB has significant dark skies, special areas where there is little ambient light pollution, and on a clear night many stars can be seen. The University of Hertfordshire has maintained an all-sky camera monitoring facility at Niton for three years and has stated that "from the data we have, the Isle of Wight has potentially the best combination of dark skies and clear weather inthe UK".[14]	Promote and celebrate the value and contribution of tranquillity and dark skies to Island life. Ensure that appropriate considerations are given to the impact upon the tranquillity and dark skies in all development proposals affecting Isle of Wight AONB. Develop a better understanding of the contribution of tranquillity and dark skies to the enjoyment, health and well-being and the rural economy. Development of local guidance documents for communities, business on tranquillity and dark skies.	**Tranquillity** **Sense of place/ inspiration** **Recreation**

[14] *Isle of Wight Area of Outstanding Natural Beauty Management Plan 2014-2019*, Isle of Wight Area of Outstanding Natural Beauty

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation	Public rights of way and the Tennyson Trail Open access land Beaches Coast and sea Heritage Coasts	The Island has a 799 km network of public rights of way. Open access land covers some 4 per cent of the NCA) and is largely associated with the grassland of the chalk ridge. Tourism is a key feature of the Island. Popular activities across the area include walking, riding and cycling and taking time to enjoy the open countryside. Adventurous activities include paragliding, hang-gliding and a range of water sports. The Island has various beaches which are very popular in the summer months for traditional British seaside holidays. Maritime activities such as sailing on the Solent, one of the busiest sailing waters in the world remain very popular as do sailing events such as the annual Cowes Week regatta. Hamstead Heritage Coast on the north west of the Island provides tranquil and secretive coastline and offers a haven for wildlife including red squirrels and migratory birds. **Continued on next page...**	International	The Island is a popular recreation destination fulfilling a broad spectrum of visitor requirements. The range of beaches and coastal towns afford opportunities for swimming, kayaking and coastal walking reflected in the Island's annual walking festival. The Island's coasts provide a wealth of opportunities to enjoy coastal walks with far-ranging views, and to experience tranquillity and enjoy the diverse wildlife. The Island's beaches and seaside provide a range of recreational opportunities such as seaside resorts and activities Alum Bay and Blackgang Chine that offer more traditional family recreational opportunities. There are opportunities for people to experience the connections between the Island's landscape and farming by staying in farm based accommodation or through purchasing local produce in farm shops. Isle of Wight AONB is part of 'Our Land', the protected landscapes sustainable tourism programme[15].	The Island's existing network of public rights of way, permissive paths and coastal paths should be maintained and, where possible and appropriate, enhanced. Development of new or expansion of existing recreational facilities should be sympathetic with and enhance their setting. Provision of sustainable transport options into and within the NCA will help to manage visitor pressure and avoid potentially damaging changes to tranquillity approaches.	**Recreation** **Sense of history** **Sense of place/ inspiration** **Tranquillity**

[15] For further information see www.our-land.co.uk

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation cont.		**...continued from previous page** In contrast, the Tennyson Heritage Coast offers open aspects and long distance views to the English Channel; a special quality of light; the iconic Needles chalk stacks and other multi-coloured cliffs; and a fossil rich coastline including the well-known dinosaur footprints at Brook Bay. Approximately 2.5 million tourists visit the Island every year.		The annual Cowes Week regatta, the largest regatta event in the world, upholds the strong maritime Island connections. Similarly, the Isle of Wight Festival is established as one of England's most popular music festivals. There are opportunities for the Isle of Wight AONB and Visit Island to promote the visitor 'codes of conduct' and minimise pressure on the NCA.		

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity	Calcareous grassland Neutral meadows Ancient semi-natural broad-leaved woodland Lowland heathland and dry acid grassland Cliffs and landslips Unimproved meadows and grasslands Marshes, creeks and bogs Special Areas of Conservation (SAC) 22,305 ha Special Protection Areas (SPAs) 1,736 ha Ramsar Sites 1,620 ha **Continued ...**	This NCA has 5,000 ha of priority habitat, covering 13 per cent of the area. This includes 2,960 ha of woodland (wet woodland, lowland mixed deciduous and lowland beech and yew), 793 ha of maritime cliff and slope, 653 ha of lowland calcareous grassland, 578 ha of coastal and flood plain grazing marsh, and areas of lowland heathland and reedbeds. Central to the Isle of Wight's rich biodiversity is its range of geological and physical features. This includes almost every type of soil found in south-east England, ranging from the poorly draining clay soils over the Tertiary deposits, through to freely draining acid soils on sandstone and gravel outcrops. The Island's biodiversity is further enhanced by the range of coastal features it contains. This includes the muddy estuaries, sand spits, shingle bars, saline lagoons and soft slumping clay cliffs of the north of the Island, the dramatic chalk cliffs to the east and west and the mainly sandy, soft slumping cliffs of the south coast.	International	Various changes to the Island's biodiversity have occurred; for example, chalk grassland has declined by two-thirds since 1850. However, a mosaic of important habitats remains[16]. Island status has prevented colonisation by some species such as mink, grey squirrel and deer, and allowed populations of rare species such as dormouse, red squirrel and water vole to flourish. A mild climate and coastal conditions has enabled species such as the Glanville fritillary butterfly to live at the northern edge of their European range. In some cases, it is anticipated that climate change will allow some species to colonise from the Continent, such as invertebrates, moths and bees. The soft cliffs are liable to cliff falls and slumping and are of interest for their vegetation and invertebrate communities. The impact of sea level rise and increased storminess on coastal habitats is of particular concern, due to the limited opportunities for the migration of habitats.	Support measures to create bigger, better, more joined up and resilient ecological networks to benefit biodiversity. Create significant new areas of semi-natural calcareous grassland, to buffer, extend and create links thus strengthening the connectivity and resilience of this habitat type. Explore opportunities for the conversion of conifer plantations to deciduous woodland and the re-creation of areas of wood pasture, whist ensuring that there is some conifer retention for the benefit of the red squirrel population. Promote, educate and celebrate the importance of the diverse habitats and species of the Island including the red squirrel and Glanville butterfly. Monitor the impact of forces for change, such as recreational activities, development, land use, pests, diseases, invasive species and climate change, on Island wildlife.	**Biodiversity** **Climate Regulation** **Regulating coastal erosion** **Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Sense of place/ inspiration** **Tranquillity**

[16] *Isle of Wight Area of Outstanding Natural Beauty Management Plan 2014-2019*, Isle of Wight Area of Outstanding Natural Beauty

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity cont.	**... continued from previous page** Sites of Special Scientific Interest (SSSI) 4,220 ha National Nature Reserves 286 ha Local Sites of Importance for Nature Conservation (SINC) 4,295 ha Local Nature Reserves 79 ha	The coastal habitats of the south of the Island contrast with those of the north coast and consist mainly of cliffs. These vary greatly in relation to the rock type from which they are composed. The highest cliffs are those made from chalk. These support important cliff nesting bird colonies, including several pairs of peregrine falcons. Island status and a relatively mild climate have enabled a range of species such as the Glanville butterfly to flourish. The Isle of Wight is unusual in having practically no deer present, which has enabled a rich ground flora and undisturbed shrub layers to develop. This creates good conditions for dormice, bats and butterflies.		The distribution and maintenance of this diversity of coastal habitat is dependent upon the continued effects of coastal erosion, sediment transport and erosion. Interruption of these natural coastal processes from sea defences, combined with changes in sea level, can seriously threaten the diversity of coastal habitats and species. There are areas of land that have poor soil, saline conditions or steep slopes and have avoided the intensification associated with more productive land. The result is small areas of semi-natural habitat of high wildlife value being surrounded by a less bio-diverse farmed landscape. These areas act as important sources of diversity, with the potential to re-colonise the wider countryside. There are opportunities for the conversion of conifer plantations to deciduous woodland and the re-creation of areas of wood pasture. However, some conifer retention is necessary for the red squirrel population and Scots pine is a feature on the sandstone. **Continued on next page...**	Work with landowners to integrate sustainable land management options and provide benefits for farming whilst also benefitting biodiversity. Explore opportunities to ensure that key habitats are maintained that are home to key Island species such as red squirrel and dormouse are not impacted on by the introduction of non-native species. Explore appropriate management techniques for maintaining the Island's designated sites to ensure that they are managed to retain their highest ecological value and for the species that they support.	

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity cont.				**... continued from previous page** The warm southerly aspect of many Isle of Wight chalk grasslands support large populations of nationally uncommon insects such as the Adonis blue butterfly. The Island's chalk grassland is also a national stronghold for the internationally rare early gentian which can be abundant on exposed chalk and flinty gravel. It is important that the Island's SPAs, SAC and SSSI with their chalk grassland, woodland and maritime habitat and associated species are managed appropriately, allowing natural erosive and accumulative processes and natural migration of habitats, but ensuring effective buffering of protected sites. Consistent data gathering and research to evidence change will be effective in directing management requirements and informing agri-environment scheme priorities. There may be a need to control deer should their numbers impact on the rich ground flora and associated biodiversity. Deer farms should ensure that their fencing is impenetrable, and escaped deer should be removed.		

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Bedrock and exposures (natural and man-made), Quaternary sediments Landforms including the Landslip, downland and chines Internationally important palaeontology Protected areas including SSSI and the Hamstead and Tennyson Down Heritage Coasts Vernacular building materials	The Isle of Wight is noted for its striking diversity of geology, landforms, and geological processes, with many important natural and man-made geological exposures within a relatively small area. Quarries provide access to geodiversity inland as well as providing building materials. The extension of the Purbeck Monocline (a step-like fold extending from the mainland) which forms the 'spine' of the Island is a remarkable relic of the Alpine mountain-building episode. Other sediments, both earlier and later than the Chalk, provide a record of the conditions and climate in which they were deposited. Much carbon was locked up in the formation of the Chalk. The Island has yielded and continues to yield diverse assemblages of Mesozoic and Tertiary vertebrate, invertebrate and plant fossils. The dinosaur assemblages in particular are of international significance. The geomorphological processes along rivers and coast are of considerable importance and demonstrate a dynamic and responsive coastline functioning naturally. **Continued on next page...**	International	The striking geodiversity of the Island provides a unique sense of place which should be preserved and enhanced. There are many nationally important opportunities and locations for study, research, and geotourism, for instance the Needles and the coloured cliffs of Alum Bay which provide two geotourism opportunities in one small area. The fossil record here has contributed greatly to knowledge of the geological and ecological history of Britain, and fossil localities provide internationally significant study and research opportunities. It is important to record fossil finds and information from geological exposures as they occur, to build up knowledge and understanding of the fossil history.	Ensure important geological exposures are properly managed to prevent them becoming obscured or otherwise inaccessible for study as a result of coast defence construction, vegetation growth, quarrying, waste disposal or other activities. Maintain and, where appropriate, enhance access to the geodiversity assets of the Heritage Coasts, providing recreational and education opportunities. Ensure the importance of the Island's internationally important geology, geomorphology and fossil record is promoted responsibly to both visitors and local people using high quality interpretation to fully reflect its importance and increase knowledge and understanding of the resource. Ensure that new developments, particularly within the AONB, reflect the vernacular through high quality build using local distinctive stone.	**Geodiversity** **Sense of place/ inspiration** **Sense of history** **Biodiversity** **Water availability** **Regulating water flow** **Regulating soil quality** **Climate regulation** **Regulating coastal erosion and flooding**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity cont.		**... continued from previous page** The Ventnor Undercliff and parts of the northern coast from Cowes to Gurnard are subject to complex land movements resulting from tilted, impermeable clay layers underlying more porous, water-laden rock types. The area is vulnerable to sea-level rise and climate change. The Quaternary gravels of the north coast, and elsewhere, contain a number of human artefacts from Palaeolithic times.		The impressive chines resulting from streams cutting through the sandstone bedrock, and the dramatic landslipped Gault and Upper Greensand picturesque landscape of the Undercliff, along with the chalk downlands, provide an open-air university of geological processes. The impacts of management practices should, where possible, not extend beyond what is unavoidable to fulfil their function. The bedrock and soils of the Island play their part in climate regulation as well as in human history. The rolling hills are often the location of spring lines and shelter which led to the establishment of settlements close by.	Identify and realise opportunities understanding of geodiversity and soils within the area and its relevance to understanding climate regulation. Maintain natural geomorphological processes, particularly along rivers and the coast that contribute to the regulation of coastal flooding. Ensure that all information regarding falling cliffs is recorded and ensure that coastal management techniques have a minimal impact on geological features. Promote good practice in fossil collecting to encourage appropriate collecting which prevents damage to the resource and records what was found, where and when, to contribute to greater understanding of the fossil history. Explore ways to promote the Island's rich dinosaur heritage, using features such as the Dinosaur Island Trail as an educational resource.	

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