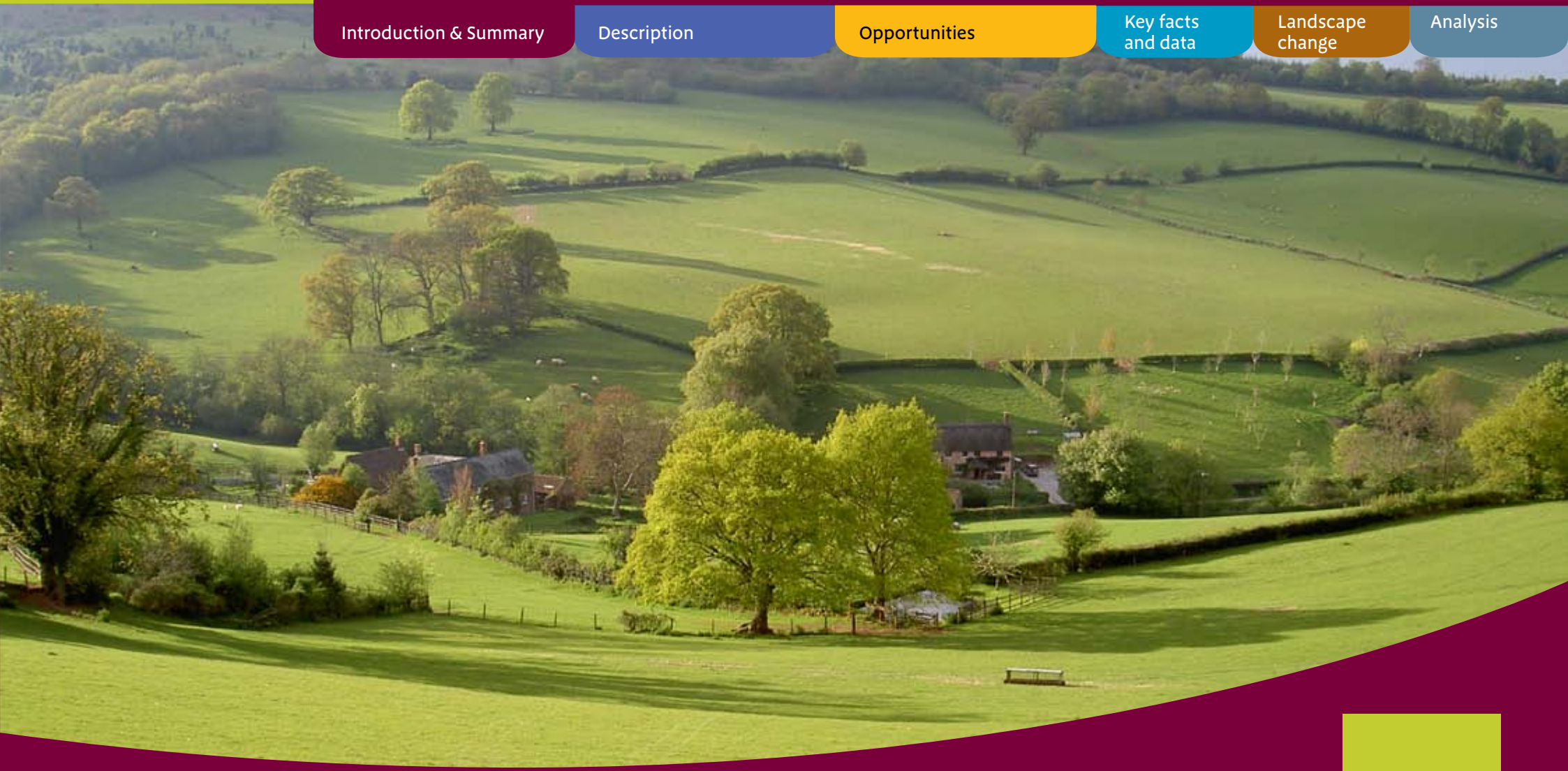
National Character Area profile:

144. Quantock Hills

Supporting documents

Introduction & Summary | Description | Opportunities | Key facts and data | Landscape change | Analysis



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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.

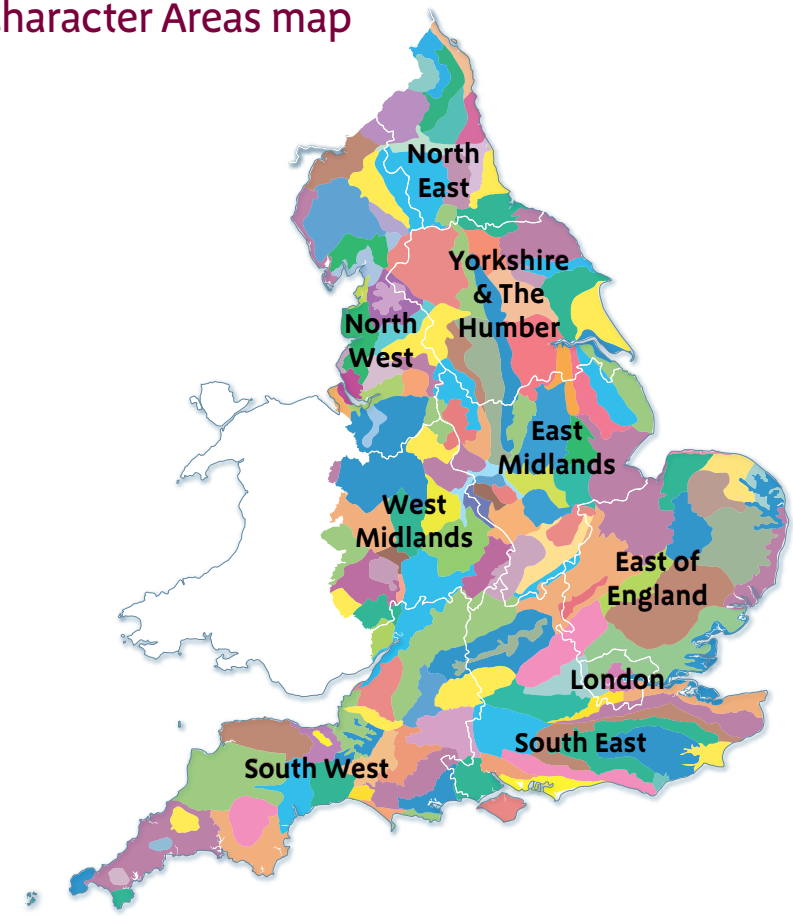
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and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

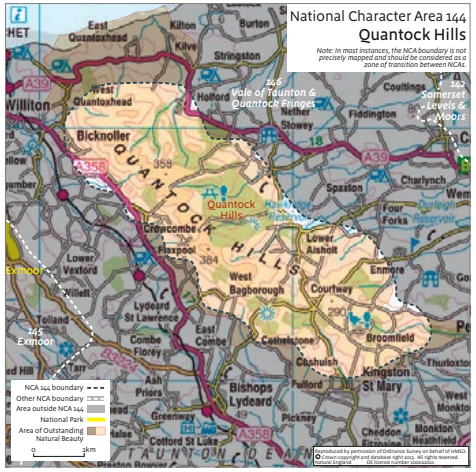
Summary

The Quantock Hills curve inland from the Bristol Channel and provide long, open views from their open moorland and heath-covered ridge. The Quantock Hills National Character Area (NCA) encompasses a variety of landscapes, including upland plateau, wooded valleys and rolling fields. Such differences in character are given further emphasis by their close juxtaposition within a comparatively small area. The landscape that is created is one of intimacy and diversity. Nearly all of the NCA (96 per cent) is within the Quantock Hills Area of Outstanding Natural Beauty. The area also contains the Exmoor and Quantock Oakwoods Special Area of Conservation and 30 per cent of the NCA is designated as a Site of Special Scientific Interest. At the heart of the Quantocks is the upland plateau, 381 m high. It is covered by heathland, creating the Quantocks' best known landscape. This heathland is of great ecological value, being home to species such as the nightjar. The narrow plateau is cut by deep, woodland-filled combes which create a characteristic landform of repeating ridges and valleys.

The lower hills of the NCA are mostly made up of agricultural land. The southern side of the NCA has a network of small, ancient fields whereas the western edge has larger fields, used for arable farming as well as some large parkland estates. The NCA rises out of and is entirely surrounded by the Vale of Taunton and Quantock Fringes NCA, but along its northern edge is only a few kilometres from the sea. The northern fringe of the NCA is on deeper, richer soils based on mudstones, so the fields are larger and arable farming predominates, as well as the growing of miscanthus as biomass fuel.

The Quantocks are rich in artefacts of human history, including bronze-age barrows, standing stones, medieval field patterns and lime kilns. They also have a rich cultural history and served as inspiration for both Wordsworth and Coleridge. Those poets, like people today, were inspired by the accessible wildness of the Quantock Hills, their secret and secluded areas and characteristic wildlife. Some 40 per cent of the NCA is classified as being publicly accessible and so it is popular with visitors, especially during the warmer summer months.

The settlement pattern of the NCA is one of scattered single houses, farmsteads, tiny hamlets and small villages. Each village has its own individual style due to the variation of building stones available within the area. There are no main roads in the NCA and little infrastructure to interrupt the long views available from the hill tops.



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Statements of Environmental Opportunities:

- **SEO 1:** Protect, manage and enhance the landscape of wild and open summits, wooded combes and rolling fields, which support a wide variety of habitats and species, helping to regulate water quality and flow, protecting soil structure and storing carbon.

- **SEO 2:** Protect and maintain the many heritage assets, from prehistoric monuments to 19th-century farmsteads, the wealth of geodiversity, the dark skies, and the sense of tranquillity and remoteness found throughout the area, which contribute strongly to the sense of history, recreation and enjoyment of the Quantocks landscape.

- **SEO 3:** Reinforce and protect the rural and historic character of the agricultural landscape with its distinctively sparse settlement character, scattering of isolated farmsteads, tiny hamlets and small villages. Protect and manage the longstanding agricultural land use for its important role in the local economy, for the habitats it supports and to ensure that it contributes to the regulation of soil and water quality.

- **SEO 4:** Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation, education, access and health opportunities continue to be enjoyed by the local community and visitors alike.

The red deer is the species which captures the popular imagination of visitors to the Quantock Hills and has become something of an emblem of the area.

Description

Physical and functional links to other National Character Areas

The Quantocks Hills curve inland from the Bristol Channel and provide superb views, reputedly over nine counties, from their open moorland and heath-covered ridge. Views of the surrounding Vale of Taunton and Quantock Fringes National Character Area (NCA), to the east the Somerset Levels and Moors NCA and Mendip Hills NCA are visible, and west across to the hills of the Exmoor NCA. From the northern edge of the NCA there are views across the Vale of Taunton and Quantock Fringes NCA and out across the sea.

The A358 circumvents the hills but is the main link between the NCA and the surrounding area via the few small A roads that actually lead across the Quantocks.

The lower slopes of the NCA are mostly a pastoral landscape which includes a few large estates, some of which cross the boundary with the Vale of Taunton and Quantock Fringes NCA. Below the wooded scarp, the land flattens out to create an apron of enclosed, agricultural land fringing the hills which blends into the rich farmland of the Vale of Taunton Deane. Streams issuing from the steep combes continue in shallow depressions across the agricultural land, creating small wetland flushes which merge into the streams and rivers that flow across the Vale of Taunton and Quantock Fringes NCA and down to the sea. The NCA is a catchment for the Hawkridge and Durleigh reservoirs in the Vale of Taunton and Quantock Fringes NCA. The boundary of the Quantock Hills NCA mostly follows the Quantock Hills Area of Outstanding Natural Beauty (AONB) boundary except at the northern end where it is drawn further inland and follows the A39 from St Audries to just east of Kilve.

The elevated plateau of the Quantocks ridge affords long views along the coast and towards Exmoor.

Key characteristics

- A high heathland ridge below which much of the dip slope, and particularly the valleys and combes, are cloaked in woodland, which in turn is surrounded by a mantle of rural agricultural land.
- The Quantock soils are mainly brown earths but there is a thin layer of peat overlying much of the heathland areas. The area is underlain in the north mainly by Devonian Hangman Sandstone, forming the highest ground of the hills, and in the south by Devonian Ilfracombe Slates (with thin limestones) and Morte Slates.
- A well-wooded landscape with large areas of ancient woodland and coniferous forestry plantation.
- Beech hedgebanks bound the rectangular fields around the edge of the open plateau and on the lower agricultural land in the south. Mixed hedgerows are used elsewhere to enclose smaller, irregular fields.
- Some beech hedges have been allowed to grow into mature trees and these now form a key feature in some parts of the hills, particularly along the Quantock ridge at its southern end.
- The area is predominantly pastoral, the most significant farm type being lowland grazing livestock.
- The NCA has an important role as a catchment both for public water supply through Hawkridge and Durleigh reservoirs which are outside the NCA, and for many private supplies. The area is also part of the upland catchment for the River Parrett.
- The Quantock hill tops provide important habitats of sessile oak woodland with a wealth of lichens and bryophytes; and lowland heath, which includes heather, whortleberry, bell heather, western gorse and cross-leaved heath.
- Iconic species for the area include red deer and buzzards. The NCA also provides habitats for rarer species such as Bechstein's bat, pied flycatcher, Dartford warbler, and nightjar.
- Bronze-age burial mounds, iron-age hill forts, standing stones, medieval manor houses and industrial heritage contribute to a strong historic environment.
- Many farmsteads are built of local slate and sandstone rubble; the Devonian Sandstone of the Quantock Hills is widely used in the area. The design of the church towers is noticeable, with their ambitious, prominent and decorated towers.
- Settlement is sparse, consisting of isolated farms, hamlets and small villages located along the springline or tucked into the narrow combes and valleys. Larger villages such as Nether Stowey lie at the junction with the Vale of Taunton and Quantock Fringes NCA.
- The Quantock Hills are a popular destination for day-trippers from around the region. The upland areas are most popular for visitors who enjoy the natural and historic landscape, the views and heritage assets of the NCA.

Quantock Hills today

The Quantocks curve inland from the Bristol Channel and provide superb views from their open moorland and heath-covered ridge. The western slopes are steep and dissected by thickly wooded combes below the springline. However, the gently undulating eastern slopes are well farmed, with a mixture of hedged pastures and arable land that exposes the red sandy soils. Narrow lanes meander through the peaceful Quantock countryside before riding up through woodland to more open and exposed summits. Within a relatively small area, the Quantock landscape shows immense variety and on its heights there is an air of solitude and wildness.

The Quantock Hills are a discrete landform with a prominent and rounded profile. The area is underlain in the north mainly by Devonian Hangman Sandstone, forming the highest ground of the hills, and in the south by Devonian Ilfracombe Slates (with thin limestones) and Morte Slates. These rocks are bordered to the south and east by a belt of red Triassic sandstones. The whole mass of the Devonian rocks and Triassic sandstones is surrounded by an extensive area of red Mercia Mudstone.

The Quantock soils are, however, mainly brownearths and many of these soils have been completely or partially podsolised. Water moving through the peat and head deposits surfaces in flushes and springs along the steeper western scarp, feeding the streams. These streams have cut down to form deep, incised combes that are thickly wooded. In contrast, to the east the land falls as a gentler dip slope with long, broad valleys through which streams flow into the Vale of Taunton and Quantock Fringes NCA, where they contribute to the public water supply through the Hawkridge and Durleigh reservoirs. The area is also part of the upland catchment for the River Parrett.

At their core, the Quantock Hills are a landscape of heather moorland, including heather, bracken, purple moor-grass and bilberry. Being largely devoid of settlement and lacking much visible infrastructure, the area imparts a feeling of space and remoteness unusual for such a small area. This sense of wildness is heightened by occasional glimpses of red deer. In the more sheltered areas, there is a landscape of scattered farmsteads, built of dark red sandstone. Around them is a maze of small, irregular, hedged fields of pasture, connected by winding, sunken lanes. On the eastern dip slope of the Quantock Hills the landform is much gentler. Arable cultivation and larger fields are present and deep red soils are visible for part of the year.

The extensive heathlands and ancient semi-natural oak woodlands of the Quantocks are nationally important wildlife habitats and are rich in species. The heathland habitats include acid flushes which are botanically the richest habitats in the NCA, home to specialist plants such as round-leaved sundew.

Red deer are the most iconic species of the hills and roe deer populations are increasing. Pied flycatchers nest in the woodlands and there are populations of rare nightjar within the NCA. In the spring, some areas of the ancient woodlands have a blue carpet of bluebells. In some valleys, the invasive and non-native rhododendron had become abundant, but in recent years a determined campaign has begun to remove this invasive species from the landscape.

Although the Quantocks are still quite wooded, in some areas conifers (Plantations on Ancient Woodland Sites or PAWS) have largely replaced the

original oak and beech trees. Large areas of deciduous woodland do remain and are characteristic features of the landscape, as are the notable beech hedgebanks and ancient hollow ways. These overgrown beech hedgebanks form such a distinctive feature that they will need careful management to ensure that they are conserved, especially where they line popular walking routes across the hills.

The landscape of the Quantock Hills has been shaped by human influence since at least the Bronze Age, with numerous small, round burial mounds, settlement remains and other monuments which can still be seen throughout the hills.

Triscombe Quarry and West Quantoxhead are major quarries within the Quantock Hills. Triscombe Quarry has left a huge gash in the steep western escarpment, exposing the Hangman Grits of the Old Red Sandstone. Abandoned quarries within the NCA have become valuable habitats.

Some of the farmsteads are built of local slate and sandstone rubble. The Devonian Red Sandstone of the Quantock Hills, however, has been widely used in the area and the design of the church towers is noticeably more ambitious here than on Exmoor. The larger manor houses and mansions which lie around the edge of the area, such as Nettlecombe Court, Combe Sydenham and Dunster Castle, are also of Devonian Sandstone although red brick has commonly been used in the larger country houses that are scattered about the Quantock landscape. The small villages and hamlets that scatter the area almost exclusively retain their local character. The stone-built, thatched cottages are particularly noteworthy and many are still topped by a traditional straw animal.

The open, treeless landscape of the hill tops is favoured by horse riders and walkers and its beauty is enhanced by sweeping changes as purple, green and gold chase each other across the hill tops from season to season.

The extensive tracts of ancient woodland on the Quantocks represent a major biodiversity and cultural asset.

The landscape through time

The Quantocks were formed by thick sequences of slates and sandstones that were deposited in environments which represent coastal plain, delta tops and slopes, and which occasionally supported coral reefs. Repeated sea-level changes and the seaward growth of deltas mean that these environments and associated sediments occur several times through the Quantocks' Devonian successions. The Quantocks are in fact a fault-bounded inlier of Devonian rocks, surrounded by more recent mudstones and red sandstones of Triassic age, which represent the deposits of large river systems that crossed a desert plain.

Over the last 2 million years, the area was not directly impacted by the repeated advances and retreats of the great ice sheets of the ice age. However, periglacial conditions – including permafrost, freeze thaw and various solifluction processes – played a major role in creating many of the valleys and combes that are characteristic of the Quantock landscape today.

The Neolithic Period witnessed the introduction of farming, alongside more intense woodland clearance. Throughout the Bronze and Iron Ages, the landscape of the Quantock Hills was changed more systematically to one with areas of pasture, mostly in the north. Fields, most probably banked, were found mainly in the southern end of the NCA. In fact, around the defended settlement at Higher Castles, the layout of some of the current field boundaries suggests that they started life as part of an iron-age landscape. This means that some parts of today's landscape might be over 2,000 years old.

Although small in extent, the Quantocks make up one of the few remaining moorland landscapes in southern Britain, of national importance for the legible survival of monuments dating from the Neolithic Period and especially the Bronze Age. These include numerous cairns resulting from land clearance and bowl barrows dating from around 2400–1500 bc, extensive cropmark evidence for settlement and land use, and large-scale, dramatic examples of iron-age hill forts and smaller defended enclosures such as Ruborough Camp and Dowsborough Hill Fort.

Rising like a moorland-clothed island from a sea of lowland farmland, the Quantocks landscape is geologically, ecologically and culturally distinct from the surrounding Vale of Taunton and Quantock Fringes NCA.

Much of the present settlement pattern of farming settlements and farmsteads, linked by hollow ways and farming a landscape of strip fields, fields enclosed from woodland and rough ground (later enclosed by fields), was established in the 8th to 11th centuries.

The mid to late 14th century saw more changes to the landscape that can still be seen today. Bad weather, the Black Death and the collapse of the manorial system caused a huge reduction in population and often much movement of the remaining people. On the lower part of the hills there is evidence that areas of broadleaved woodland grow over medieval fields and much of today's heathland covers the remains of arable fields. Some farming hamlets shrank to individual farmsteads, a process that (as in Exmoor) continued into the 19th century, and strip fields and rough ground began to be enclosed on a piecemeal basis into fields. Small manors continued to develop as a distinctive feature of this landscape.

The Parliamentary enclosures of the 18th and 19th centuries led to the enclosure of some of the higher land that had not been enclosed during or since the medieval period. These fields are generally larger and more rectangular than the earliest fields and are often hedged with stone-faced banks topped with beech trees. The use of lime to dress the generally acid soils of the region is evidenced by the many lime kilns that dot the area. By the 18th century, both coal and limestone were being imported from Wales, which led to the development of coastal lime kilns – the remains of which can still be seen at Kilve and East Quantoxhead.

In the NCA, there are many small quarries that once supplied road stone and building material. The most developed sites are on the western side of the hills, with examples at West Quantoxhead, Halsway and Triscombe. The latter

The remains of the 11th-century Norman motte-and-bailey castle at Nether Stowey.

two were created in the 18th century, and Triscombe did not close until the late 1990s. Some copper mining took place in the area and there is evidence of this industry in today's landscape.

Substantial deer parks were developed, many of which were the basis of 18th and 19th century landscape parks and still survive as parkland today. It was probably during this time that the tree ring enclosures were constructed on the moorland.

The major impact on the area during the early part of the 20th century was the establishment of extensive coniferous plantations. This resulted in damage to the archaeological landscape as well as changing the habitat balance of the landscape. While in some areas woodland has damaged archaeological interest, there will be other situations where the presence of woodland may have reduced the impact of even more damaging agricultural operations.

During and after the Second World War, there were rapid changes in agriculture as farmers were encouraged to increase production through mechanisation and widespread use of agricultural chemicals. This pressure to intensify resulted in the agricultural improvement of grassland and the reduction of permanent pasture. Remnant species-rich pastures are now rare and fragmented, only being found on a few of the steeper slopes within some of the combes.

Many fields on the coastal side have long been in arable production but, during the latter half of the 20th century, there was a shift towards conversion of remaining grassland to arable. On such land, many hedgerow boundaries have deteriorated or been removed. There are areas where hedges, previously laid, are now flailed, creating a severe 'box shape'; this may also have led to fewer hedgerow trees. In other areas, hedges are still maintained by laying and efforts have been made to regenerate failing beech hedgebanks.

In more recent years, agricultural subsidies have encouraged changes in the crops grown, leading to bright splashes of colour in the more muted tones of the landscape. Demand for energy crops has led to the planting of fairly large areas of miscanthus within the rural landscape.

Some areas of the Quantocks are under increasing pressure from commuters, moving in from Taunton. This is subtly changing the patterns of settlement and land use. Many smallholdings that are no longer in agricultural ownership have become horse paddocks with pressure for new stabling and ménages.

The Quantock Hills was England's first AONB, being designated in 1956 (confirmed in 1957). The Quantocks have become an increasingly popular destination for recreation. A 2003 survey by the AONB service showed that there can be up to 5,000 visitors on the hills on a busy day. Such large numbers of visitors have led to extensive erosion on and around the tracks across the hill tops. Heavy use for horse riding continues to result in erosion and braiding of tracks. The legal and illegal use of 4x4 vehicles on tracks and restricted byways is also a major cause of damage and erosion. The area is also popular with mountain bikers.

Due to the poorly developed public transport links, most visitors to the area require somewhere to park their cars. Parking areas were mainly spontaneous in origin, since the red sandstone provides a hard standing once turf is cut away. Subsequent regeneration is difficult once the topsoil is gone. Some parking areas are at hill-top locations and provide direct access to Sites of Special Scientific Interest (SSSI), with no buffer between the two.

Ecosystem services

The Quantock Hills 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 Quantock Hills NCA is contained in the 'Analysis' section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision**: The Quantock Hills support a mixture of livestock farming on the heath and pastures and arable crop growing on the more fertile soils near the coast. There are some remaining orchards in the area which provide fruit for the local cider industry.

- **Timber provision:** Interest in large-scale conifer plantation has abated and the older conifer plantations are being brought into a more varied type of management that enhances wildlife and visual interest. Some conifer plantations are still being used for commercial timber production.

- **Biomass energy:** Miscanthus features significantly in the farmed coastal strip and there is some small-scale cutting of broadleaved woodland for wood fuel.

- **Water availability:** While the geology of the Quantocks dictates that the land is broadly free-draining, surface water contributes significantly to the wildlife and landscape interest of the area. Water habitats include acid flushes or mires on the upland heath, and the streams flowing from them through heath, wood and farmland. The NCA has an important role as a catchment both for public water supply through Hawkridge and Durleigh reservoirs, and for many private sources. The area is also part of the upland catchment for the River Parrett.

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

- **Climate regulation:** The peaty soils of the heathland, organic-compound-rich soils of the permanent pastures and the woodlands all serve as carbon stores.

- **Regulating soil erosion:** Soil erosion is only a significant problem on the areas of arable land and where tracks and car parks have been cut into the turf of the hill tops.

- **Regulating soil quality:** The heathland and relatively non-intensive livestock farming methods that predominate over much of the NCA mean that soil quality is generally good. Some areas, especially on arable land, may suffer from compaction and nutrient loss.

- **Regulating water quality:** The majority of surface water in the NCA is of moderate or good quality due to the lack of industry and the high proportion of pasture and semi-natural habitats such as heath.

- **Pollination:** Pollination services are important in this NCA for arable crops and the remaining orchards. The many semi-natural habitats, especially the heathland, provide valuable nectar for pollinators. In 2013, the Quantock Beekeepers Association launched a new apiary which will be used for breeding honey bees, as a teaching base and as a base for monitoring the health of the local bee populations.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** Sense of place is provided by the wild and remote feeling of the hill tops and long views over the coast, and by the more rural setting of the fields and woodlands on the lower slopes. The area has a strong association with Wordsworth and Coleridge.

- **Sense of history:** The area retains a strong sense of a landscape used from the prehistoric period by surrounding communities. It contains a wealth of historic features including ancient field patterns, bronze-age barrows, Neolithic standing stones, medieval manor houses, and more recent industrial heritage. There are interpretation boards for some of the more obvious features but many of the historic features, such as bronze-age barrows, remain unmarked to avoid cluttering the landscape.

- **Tranquillity:** Based on the Campaign to Protect Rural England map of tranquillity (2006), the Quantock Hills are relatively and universally tranquil. The hills and combes are especially tranquil in the colder months when there are fewer visitors. There are very few intruding signs of human infrastructure within the landscape.

- **Recreation:** The area is popular for outdoor recreation. Some 40 per cent of the NCA's (3,076 ha) is classified as being publicly accessible. There are 203 km of public rights of way at a density of 2.7 km per km2. The area is popular with walkers as well as cyclists and horse riders. Some people are drawn to the area by the biodiversity or historical assets. Hunting and shooting are also popular in the NCA.

- **Biodiversity:** The wide variety of semi-natural habitats within the area makes it valuable for biodiversity. It is part of the Exmoor and Quantock Oakwoods Special Area of Conservation and contains an SSSI that fills 30 per cent of the area.

- **Geodiversity:** The NCA has quite a varied and interesting geology. There are 17 Local Geological Sites within the NCA. The unfenced nature of much of the upland Quantocks allows for access to much of the geodiversity.

The heathland and acid grassland draped over the summits of the Quantock Hills add to a sense of remote timelessness. This habitat has been here for at least two thousand years.

Statements of Environmental Opportunity

SEO 1: Protect, manage and enhance the landscape of wild and open summits, wooded combes and rolling fields, which support a wide variety of habitats and species, helping to regulate water quality and flow, protecting soil structure and storing carbon.

For example, by:

- Protecting the 'wild', uncluttered, remote and distinctive character of much of the area through landscape conservation initiatives and through restriction of uncharacteristic development (other than the development, renewal or maintenance of essential utility infrastructure necessary to meet regulatory, health and environmental targets and particularly in relation to water provision and flood management).
- Managing grazing levels on grassland and heathland to avoid overgrazing, poaching or soil compaction.
- Managing peat soils so that they remain wet or are re-wetted to maintain important wetland biodiversity and sequestrate carbon.
- Retaining and managing pasture, hedgebanks and semi-natural habitats such as heath, in such a way as to improve water quality and reduce flood risk for the surrounding areas.
- Managing woodlands, such as those within the Exmoor and Quantock Oakwoods Special Area of Conservation, particularly through the use of traditional woodland management techniques and targeted woodland creation to extend and buffer fragmented ancient woodland, to encourage regeneration of native species and to remove invasive aliens such as rhododendron.
- Encouraging, where appropriate, the restoration of PAWS (Plantations on Ancient Woodland Sites) conifer plantations, at maturity, to open heathland or ancient broadleaved woodland, as appropriate, for the benefit of biodiversity and landscape character and to enhance the resilience of semi-natural habitats to the effects of climate change.
- Encouraging environmentally sensitive farming methods to reduce nitrate run-off and silting of streams.
- Ensuring that moorland swaling (burning) and cutting programmes are sustainably managed and will maintain the open character of the landscape and promote structural and biological diversity as well as avoid loss of peaty soils, while ensuring that these practices do not deplete the store of greenhouse gases through soil erosion or oxidation.

SEO 2: Protect and maintain the many heritage assets, from prehistoric monuments to 19th-century farmsteads, the wealth of geodiversity, the dark skies, and the sense of tranquillity and remoteness found throughout the area, which contribute strongly to the sense of history, recreation and enjoyment of the Quantocks landscape.

For example, by:

- Using an understanding of the whole of the NCA's historic landscape character – the result of how human and natural factors have interacted over millennia – as a framework for enhancing biodiversity throughout the area and also sustaining the palaeo-environmental and wider environmental benefits of its moorlands.
- Protecting significant archaeological sites (such as settlement sites and ridge and furrow) and buried archaeology from damage by cultivation, thus helping to maintain an interesting historical asset as well as helping to maintain the landscape character.
- Protecting varied heritage assets – including archaeological features such as bronze-age barrows, iron-age hill forts, earthwork remains, ridge and furrow, and patterns of former medieval strip farming – and ensuring access to and interpretation of these important historical features.
- Promoting, managing, restoring and enhancing designed parklands, deer parks, wood pasture, ancient and veteran trees, and commons with their associated biodiversity and historic buildings such as old gatehouses. This would help to further improve landscape quality, increasing its recreational value. Managing, restoring and (where appropriate) replanting traditional orchards, thus helping to retain local genetic varieties and historic buildings – for example, cider houses and associated cultural heritage – through local and community events creating new recreation and education resources.
- Retaining genetic diversity of orchard trees by growing a selection of different varieties to allow adaptability to the effects of a changing climate.
- Retaining, restoring and managing appropriately all hedges – and especially those that define enclosure of medieval or earlier fields, as these are a strong landscape feature. This will enhance the landscape, retain historic field patterns and provide an important biodiversity resource and connectivity of particular importance across the arable areas. Good hedgerow management will also help to reduce soil erosion and protect soil quality.
- Paying special attention to the maintenance of traditional beech hedgebanks, replanting where necessary, which will help to retain the special landscape character of the Quantocks as well as helping to slow surface water flow and soil erosion.
- Encouraging access to, interpretation of and understanding of heritage assets by all sections of the community, to enable better current and future management and planning of the environment.
- Delivering the objectives of the Quantock Hills Area of Outstanding Natural Beauty to conserve and enhance the natural beauty of the landscape.
- Managing and enhancing access to and interpretation of nationally important and locally characteristic Devonian, Triassic and Jurassic geodiversity.

SEO 3: Reinforce and protect the rural and historic character of the agricultural landscape with its distinctively sparse settlement character, scattering of isolated farmsteads, tiny hamlets and small villages. Protect and manage the longstanding agricultural land use for its important role in the local economy, for the habitats it supports and to ensure that it contributes to the regulation of soil and water quality.

For example, by:

- Trying to keep the visual impact of new development to a minimum – for example, by careful design and location of new development and by planting native trees to screen new housing, stable or infrastructure developments.
- Enhancing the rural character by avoiding excessive road signage out of keeping with the undeveloped nature of the NCA, and where possible using a traditional style of sign to maintain the sense of place and history.
- Encouraging new buildings and new conversions to match the local vernacular of local sandstone and slate, including their grounds, and using an understanding of local forms and patterns of architecture to inspire any new development.
- Conserving the area's varied traditional architecture, particularly houses and farmsteads in local stone. Ensuring that the repair, restoration or conversion of vernacular buildings is carried out with due regard to this historic interest using local and appropriate materials, styles and detailing.
- Encouraging the use of traditional farming methods, where appropriate, such as hedge laying and leaving headlands in the fields.
- Continuing to provide food and support farming at a sustainable level with grazing levels that lead to improved soil quality, reduce soil erosion and benefit biodiversity.
- Considering the impact of highly visible crops such as miscanthus and oilseed rape within the landscape and encouraging sensitive positioning of such crops, where practical.
- Keeping alive the local traditions and skills that contribute to both sense of place and history of this landscape.

SEO 4: Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation, education, access and health opportunities continue to be enjoyed by the local community and visitors alike.

For example, by:

- Promoting access to the natural environment across the area – making the most natural, historic, inspirational and tranquil places available to all.
- Maintaining and improving multi-user links between settlements, both in and near the area, and the open heath, wooded valleys and the rolling fields, utilising and extending the existing network of public rights of way.
- Managing, and where possible reducing, the number of cars being driven in the small lanes around and over the plateau by creating adequate infrastructure to cater for the need without damaging the landscape.
- Gathering survey information to identify the impact of visitor trends and access routes on designated conservation sites; investigating re-routing if required.
- Developing new, sustainable access routes to historical sites and other areas of interest as part of a cohesive network of educational and inspirational access provision.
- Reducing erosion from car parks by placing boulders along their boundaries and ensuring that the infrastructure is adequate for the task.
- Encouraging sensitive use of the Quantocks landscape, including promoting the use of designated footpaths and bridleways to reduce erosion, and highlighting the damage caused by legal and illegal vehicle access, such as by 4x4 vehicles and quad bikes.
- Providing local guided walks and circular routes to ensure that visitors and local residents benefit from the wealth of historic and geological assets; working with local communities and parish councils to ensure that routes are suitable and user friendly and are not detrimental to the natural environment.
- Exploring opportunities to work with partners and organisations supporting volunteering in the natural environment – to help connect people with the natural environment, increase people's knowledge of the unique biodiversity and special features of the area, and to maintain, enhance and promote the biodiversity and natural features of the area.

Supporting document 1: Key facts and data

Quantock Hills National Character Area (NCA): 7,616 ha

1. Landscape and nature conservation designations

Nearly all of the NCA, 96 per cent, is within the Quantock Hills Area of Outstanding Natural Beauty (AONB).

- www.quantockhills.com

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Designated site(s)	Area (ha)	% of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	Exmoor and Quantock Oakwoods SAC	298	<1
National	National Nature Reserve (NNR)	n/a	0	0
National	Site of Special Scientific Interest (SSSI)	A total of 1 site wholly or partly within the NCA	2,313	30

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.

Land covered by international and European nature conservation designations totals 298 ha (4 per cent of the total land area).

There are 44 local sites in Quantock Hills covering 1,150 ha, which is 15 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

Condition category	Area (ha)	% of SSSI land in category condition
Unfavourable declining	77	3
Favourable	208	9
Unfavourable no change	303	13
Unfavourable recovering	1,725	75

Source: Natural England (March 2011)

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

2. Landform, geology and soils

2.1 Elevation

The Quantocks rise to a maximum height of 381 m from a minimum of 62 m. The mean elevation is 210 m.

Source: Natural England 2010

2.2 Landform and process

The Quantock valleys form a distinctive pattern. On the steep, west-facing scarp slope they are short, steep and wooded with small villages and hamlets on the spring lines at the slope foot. To the east and south there are much more gentle valleys, commonly with plantations, ending in the larger villages and parklands at the end of the Vale of Taunton. Around the edges of the Quantock Hills there is a transition to a gentler lowland landscape.

Source: Exmoor and the Quantock Hills Natural Area Profile, Quantock Hills Countryside Character Area description

2.3 Bedrock geology

The Quantocks are formed from thick sequences of slates and sandstones of Devonian age that were deposited by large deltas that built out into a shallow sea. They are surrounded by Triassic mudstones and sandstones which represent the deposits of large river systems that crossed a desert plain. The sandstones underlying the north of the hills are Trentishoe and Hangman Sandstones, forming the highest ground of the hills. The south is underlain by Leighland Slates (with thin limestones) and Morte Slates. These rocks are bordered to the south and east by a belt of red Triassic sandstones and elsewhere by mudstones and halites from the same period. The western margin of the Quantocks is sharply defined by the major Cothelstone Fault which is part of a group of faults which display evidence of a complex history involving Variscan and later movement.

Source: Exmoor and the Quantock Hills Natural Area Profile, Quantock Hills Countryside Character Area description, British Geological Survey maps

2.4 Superficial deposits

There are minor deposits of alluvium along watercourses. Unlike much of the rest of Britain, Somerset did not experience the full effects of the repeated advances of ice sheets, as the southward movement of the most recent ice sheets did not extend into the county. During these glacial periods it is likely that much of the county resembled the tundra of today's arctic provinces.

Source: Exmoor and the Quantock Hills Natural Area Profile, Quantock Hills Countryside Character Area description, British Geological Survey maps

Autumn sees the characteristic beech avenues and fields boundaries ablaze with colour.

2.5 Designated geological sites

Designation	Number
Geological Site of Special Scientific Interest (SSSI)	n/a
Mixed interest SSSI	n/a

There are 17 Local Geological Sites within the NCA.

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

2.6 Soils and Agricultural Land Classification

The Quantock soils are mainly brown earths and many of these soils have been completely or partially podsolised.

Source: Exmoor and the Quantock Hills Natural Area Profile

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

Agricultural Land Classification	Area (ha)	% of NCA
Grade 1	0	0
Grade 2	290	4
Grade 3	2,847	37
Grade 4	1,116	15
Grade 5	2,666	35
Non-agricultural	697	9
Urban	0	0

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 classification 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.

Name	Length (km)
There are no major rivers/canals flowing through this area	n/a

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.

Along the steeper western scarp, streams have cut down to form deep, incised combes that are thickly wooded. In contrast, to the east the land falls as a more gentle dip slope with long, broad valleys through which streams flow into the Vale of Taunton.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 3,513 ha, or 46 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 2,346 ha of woodland (31 per cent of the total area), of which 1,039 ha is ancient woodland.

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

4.2 Distribution and size of woodland and trees in the landscape

Although the Quantocks are still well-wooded, conifers have replaced some of the original oak and beech trees, although remnant oak and beech trees do remain and are characteristic features of the landscape as are the notable beech hedgebanks.

Source: Exmoor and the Quantock Hills Natural Area Profile, Quantock Hills Countryside Character Area Description

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	1,386	18
Coniferous	794	10
Mixed	60	1
Other	106	1

Source: Natural England (2010), 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	304	4
Ancient re-planted woodland (PAWS)	735	10

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Beech hedgebanks bound the rectangular fields around the edge of the open plateau and on the lower agricultural land in the south. Mixed hedgerows are used elsewhere and stone-faced banks or earth banks are used within the combes. Many hedgerows were planted with beech and where these have been left to grow up there are now prominent lines of trees.

Source: Quantock Hills Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

Pastures and arable fields are divided into a patchwork of irregular shapes by a network of hedgerows dotted with trees.

Source: Quantock Hills Countryside Character Area description; Countryside Quality Counts (2003)

6. Agriculture

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

6.1 Farm type

The area is predominately pastoral, the most significant farm type being grazing livestock (lowland) with 28 holdings (42 per cent of all holdings) in 2009. There are 17 'other types' of holdings (26 per cent of holdings); the next most common farm type. There was little change in the numbers of types of farm between 2000 and 2009; over that period grazing livestock increased by 2 holdings while 'other types' reduced by 1 holding.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Farms between 5 and 20 ha in size are the most numerous with 20 holdings (30 per cent of all holdings), but cover just 228 ha of the farmed area. Farms of less than 5 ha are the next most numerous with 15 holdings that cover just 25 ha. Farms over 100 ha have seen the greatest increase in number by 5 holdings followed by farms less than 5 ha, increasing by 4 holdings. Medium sized farms between 5 and 20 ha and 20 and 50 ha have declined slightly in number by 4 and 3 holdings respectively.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

Owned land makes up 66 per cent of total farm area, while the remainder is held in tenancy. There has been a large increase in owned land, by 35 per cent over the 2000 to 2009 period, while land held in tenancy has increased by 7 per cent.

2009: Total farm area = 3,340 ha; owned land = 2,207 ha
2000: Total farm area = 2,138 ha; owned land = 1,424 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

The vast majority, 2,690 ha or 81 per cent, of the total farmed area is recorded as grass and uncropped land. The second most common land use is for cereals, 364 ha or 11 per cent of the total farmed area. Over the period from 2000 to 2009, grass and uncropped land increased by 920 ha or 52 per cent and cereals by 164 ha or 82 per cent. Cash roots dwindled from 19 ha to nothing.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Sheep are the most numerous livestock animals with 14,100 animals, followed by cattle with 2,700. During the period 2000 to 2009 livestock numbers increased; sheep by 4,500 or 47 per cent and cattle by 600 or 30 per cent.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

Most farms are run by principal farmers (81). The number of owner farmers fell between 2000 and 2009 by 17 but both full time and part time worker numbers rose by 5 and 7 respectively. Casual/gang worker numbers fell by 8.

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

Heath characterises the higher hills and ridges of much of the western, central and northern parts of the area. The higher hills and ridges are covered by tracts of upland heath, changing in floristic character and content to form lowland heath in the north as the hills reduce in height. The transition between upland and lowland heath occurs repeatedly along the crest of the scarp slope as the high ridge undulates. To the east, much of the dip slope, and particularly the valleys and combes are cloaked in woodland; upland oak woods, lowland beech and yew woods, and lowland mixed woods. Lowland mixed woods are also found on more gentle slopes and valleys to the south of the area.

Source: Exmoor & Quantock Hills 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
Upland heathland	1,448	19
Broadleaved mixed and yew woodland (broad habitat)	1,084	14
Lowland heathland	539	7
Lowland dry acid grassland	186	2
Blanket bog	15	<1
Lowland meadows	12	<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

Settlement is sparse, consisting of isolated farms, hamlets or small villages located along the spring line or tucked into the narrow combes and valleys. The pre-enclosure settlement pattern below the heathland can still be seen today. Scarp-foot villages lie along the western edge and there is scattered settlement on the gentler eastern slopes. Larger villages like Nether Stowey lie at the junction with the Vale of Taunton.

Source: Quantock Hills Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main settlements

There are no main settlements in the area. West Quantoxhead to the north and Kingston St Mary in the south are the largest villages.

Source: Quantock Hills Countryside Character Area description; Countryside Quality Counts (2003)

8.3 Local vernacular and building materials

Many farmsteads are built of local slate and sandstone rubble; the Triassic red sandstone of the Quantock Hills is widely used in the area. The design of the church towers is notable; ambitious, prominent and decorated towers. Larger manor houses and mansions, many of Tudor or 18th century origin, lay around the fringes of the area with estate lands and estate cottages a component of the landscape running up to the high ridge. Notable houses and estates include Crowcombe Court, Cothelstone Manor and Tetton to the west; St Audries and East Quantoxhead (both outside of the area, but closely associated with it) to the north; Hestercombe and Fyne Court to the south; and Doddington, Enmore Castle and Halswell to the east. These larger buildings also make use of the Triassic red sandstone, although red brick is also used in some of the larger country houses and estate buildings that are scattered about the Quantock landscape.

Source: Quantock Hills Countryside Character Area description; Countryside Quality Counts (2003)

A small-scale farming landscape with abundant hedgerows, lanes and small woodlands forms an important aspect of the NCA character away from the open plateaux.

9. Key historic sites and features

9.1 Origin of historic features

The landscape of the Quantock Hills has been shaped by human influences since the Bronze Age when numerous small round burial mounds, which can still be seen throughout the hills, were constructed. The name of the hills is thought to be derived from the Celtic word Cantuc, meaning rim or circle and relating to the curved line of the hills above the surrounding lowlands. Although there is evidence of Mesolithic and Neolithic occupation around the edges of the area, the standing stones, stone circles and barrows of the Bronze Age are by far the most prominent survivors from the prehistoric landscape.

Trendle Ring, a possible iron-age enclosure of uncertain function.

The Quantock Hills were never densely wooded, but substantial parklands were developed, many of which were the basis of 18th and 19th century landscaped parks. Settlements were probably more frequent than they are today and deserted sites can still be seen around the edges of the area. In the late 18th and early 19th centuries, small trials for copper mining developed in the Quantock Hills. In the 1920s, the planting of large conifer plantations on the Quantock dip slopes brought further change.

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

9.2 Designated historic assets

This NCA has the following historic designations:

- 1 Registered Park and Garden covering 95 ha
- 0 Registered Battlefields
- 59 Scheduled Monuments
- 120 Listed Buildings

Source: Natural England (2010)

- More information is available at the following address: www.english-heritage.org.uk/caring/heritage-at-risk/
- www.english-heritage.org.uk/professional/protection/process/national-heritage-list-for-england/

10. Recreation and access

10.1 Public access

- Forty per cent of the NCA or 3,076 ha is classified as being publically accessible.
- There are 203 km of public rights of way at a density of 2.7 km per km^2.
- There are no National Trails within the NCA.

Source: Natural England (2010)

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

Access designation	Area (ha)	% of NCA
National Trust (Accessible all year)	470	6
Common Land	1,728	23
Country Parks	0	0
CROW Access Land (Section 4 and 16)	2,779	36
CROW Section 15	529	7
Village Greens	<1	<1
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	26	<1
Local Nature Reserves (LNR)	0	0
Millennium Greens	0	0
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	32	<1
Woods for People	951	12

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.

The extensive access network on the Quantock Hills makes them a popular destination for walking, cycling, and horse riding. Balancing access pressures with maintaining the landscape is a key management concern.

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) the Quantock Hills are relatively and universally tranquil. The area is least tranquil at its edges where it is close to larger roads and more settlement.

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

Category of tranquillity	Score
Highest	44
Lowest	-36
Mean	14

Sources: CPRE (2006)

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

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that the Quantock Hills continue not to suffer a great deal of intrusion. A breakdown of intrusion values for this NCA is detailed in the table below.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	0	2	6	6
Undisturbed	100	98	94	6
Urban	0	0	0	0

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are a considerable increase in the area of intruded or disturbed land by 18 per cent.

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

Tranquil, remote and inspirational. Visitors have always appreciated these qualities of the Quantock Hills.

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 per cent. The convention <1 has been used to denote values less than a whole unit.

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- Older conifer plantations (including plantations on ancient woodland sites) are being brought into a more varied type of management that enhances wildlife features.

- The deciduous woodlands are under management which allows for some wood-fuel production. In recent years there has been great progress in removing rhododendron from some valleys, allowing regeneration by native flora. In the south of the NCA, conifers are now being grown and sold as Christmas trees.

Boundary features

- The deterioration of some hedges is continuing due to unsuitable management of cutting, although in other areas the hedges are laid and are in better condition. Beech hedgebanks have been managed by removal of certain trees and replacement by young specimens.

Agriculture

- Loss of dairy herds is causing the fragmentation of holdings, as small farms are broken up and the scale of farming is changing, with a decline of small units.

- Sheep are the most common livestock with 14,100 animals, and during 2000–09 they saw a marked increase of 4,500. Cattle numbers increased by 600 to a total of 2,700.

- There has been an increase in arable land with some increase in cereals and horticulture, and loss of mixed and general cropping. Over the period from 2000 to 2009, grass and uncropped land increased by 920 ha or 52 per cent and cereals by 164 ha or 82 per cent. Cash roots dwindled from 19 ha to 0 ha.

- Miscanthus is now widely grown in some areas and was recently planted in fields on the southern plateau.

Settlement and development

- The fragmentation of small holdings has lead to the conversion of outbuildings to housing.

- The pre-enclosure settlement pattern below the moorland can still be seen today. Little development has occurred in the area in recent years.

- There has been further infrastructure related to horse keeping, such as stables and sand schools.

Semi-natural habitat

- Three-quarters of the SSSI resource is categorised as 'unfavourable improving' as a result of better management.

- The break-up of traditional landholdings for use as horse paddocks, resulting in fragmentation and changes in management, is increasingly a problem. Both overgrazing and under grazing remains a significant problem, resulting in species losses.

Historic features

- Parklands and orchards are actively being managed with tree planting when appropriate. Some Quantock parkland is benefiting from agri-environment schemes ensuring appropriate management and in some cases the reinstatement of parkland features. Current Quantock targeting offers support for orchard management as part of a wider scheme and the local authorities can offer management grants.

- Currently some historic features, especially those which are not immediately obvious, such as bronze-age barrows, are at risk from vehicles being inadvertently being driven over them.

Minerals

- Triscombe Quarry was the last working quarry; it closed in 1999.

Traditional grazing management of the commons maintains semi-natural habitats and, importantly, maintains cultural links with the past.

Drivers of change

Climate change

- Changes in weather patterns may lead to a longer growing season and the ability to grow new crop varieties.
- Increased prevalence of summer droughts could lead to an increase in water demand for crop growth and the drying out of peat soils.
- Increased storminess of rainfall could overcome the NCA's water holding potential, leading to increased risk of flooding in the surrounding Vale of Taunton and Quantock Fringes NCA.
- Prolonged periods of drought are likely to have adverse affects on peat soils and habitats, making them more prone to erosion, wildfire events and significant changes in flora and fauna. Damper areas of permanent pasture may similarly be affected by prolonged periods of drought. Desiccation of peat soils could result in damage to buried archaeology and loss of palaeo-environmental records.
- Increased storminess, periods of drought and the prevalence of pests and diseases may have an impact upon the area's characteristic semi-natural woodlands and plantations.

Other key drivers

- There might be increased demand for food production which would pose a challenge of how to try to balance agriculture and biodiversity.
- The drive for renewable energy might lead to increased pressure for new energy infrastructure.
- Potential for further removal of alien species from woodlands and encouraging regeneration of native trees restoration of PAWS and targeted woodland creation where appropriate.
- Partnership working at a landscape scale is ongoing, to deliver benefits for the full range of habitats and species within them through the strengthening of ecological networks and the maintenance and restoration of large areas of habitat.
- Management of upland areas to withhold water for more prolonged periods and reducing the velocity of sporadic peak flow events, have the potential to be highly beneficial.
- Pressure to develop within the area is generally low. Given the overall sensitivity of the landscape and natural environment great attention to detail needs to be employed to ensure enhancement of character and quality environment results from any development.
- Changes in agri-environment payments under the replacement for Environmental Stewardship may either benefit or disadvantage aspects of the Quantock Hills. New schemes, for example, local wood fuel initiatives, may provide alternatives ensuring continued positive management.
- Increased visitor pressure will require a balancing of the needs of visitors with the natural environment. There is a need to manage roads and paths infrastructure in order to maintain the essentially uncluttered nature of the landscape.

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.

Ancient and modern - Hinkley Point nuclear power station is an inconguous element of a scene otherwise ancient in character.

Statement of Environmental Opportunity	Ecosystem Service: Food provision	Timber provision	Water availability	Genetic diversity	Biomass provision	Climate regulation	Regulating water quality	Regulating water flow	Regulating soil quality	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Sense of place / Inspiration	Sense of history	Tranquillity	Recreation	Biodiversity	Geodiversity
SEO 1: Protect, manage and enhance the landscape of wild and open summits, wooded combes and rolling fields, which support a wide variety of habitats and species, helping to regulate water quality and flow, protecting soil structure and storing carbon.	↔ **	↗ **	↔ **	o	↗ *	↑ **	↗ *	↗ **	↑ ***	↑ ***	↑ **	o	o	↑ ***	↔ **	↑ ***	↔ **	↑ ***	↔ **
SEO 2: Protect and maintain the many heritage assets, from prehistoric monuments to 19th-century farmsteads, the wealth of geodiversity, the dark skies, and the sense of tranquillity and remoteness found throughout the area, which contribute strongly to the sense of history, recreation and enjoyment of the Quantocks landscape.	↔ ***	↔ ***	↔ ***	o	↔ ***	↗ **	↗ **	↗ **	↗ **	↗ ***	↑ ***	o	o	↑ ***	↑ ***	↑ **	↗ **	↑ ***	↑ ***
SEO 3: Reinforce and protect the rural and historic character of the agricultural landscape with its distinctively sparse settlement character, scattering of isolated farmsteads, tiny hamlets and small villages. Protect and manage the longstanding agricultural land use for its important role in the local economy, for the habitats it supports and to ensure that it contributes to the regulation of soil and water quality.	↘ **	↔ ***	↔ ***	o	↘ **	↔ ***	↔ **	↔ **	↔ **	↔ **	↗ ***	o	o	↑ ***	↑ ***	↗ ***	↗ ***	↗ ***	↔ ***
SEO 4: Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation, education, access and health opportunities continue to be enjoyed by the local community and visitors alike.	↔ ***	↔ ***	↔ ***	o **	↔ ***	↗ *	↗ *	↗ *	↗ **	↗ **	↔ ***	o	o	↑ **	↗ ***	↑ **	↗ ***	↗ ***	↗ ***

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.

National Importance; Regional Importance; Local Importance

Landscape attributes

Landscape attribute	Justification for selection
A rural landscape of a combination of small irregular ancient fields and larger rectangular fields. The fields are bounded by mixed species hedges or by beech hedgebanks.	■ The field patterns reflect the history of the area, from the small bronze-age fields to the larger fields of the parliamentary enclosure. ■ Beech hedgebanks are a characteristic feature of the Quantock landscape. ■ Hedges form wildlife corridors between larger habitats. ■ The pattern of hedgerows helps to prevent soil erosion.
The heathland on the top of the Quantocks which represents the southern outlier of upland heath, mixed with Atlantic (western) heaths and lowland heath. Damper areas contain acid flushes and streams flow down from the hill tops to the farmland below.	■ The mosaic of dwarf shrub heath that covers much of the plateau is the most characteristic habitat of the NCA. The heathland is designated as an SSSI. ■ The heath is of high biodiversity value, being home to some rare species such as the nightjar and skylark. ■ The heath is of high value for pollinating insects. ■ The heathland, especially the acidic flushes, works as a carbon store. ■ The area is attractive for walkers, horse riding and mountain bikers. ■ Streams form a valuable freshwater habitat and the Quantock streams tend to be of good water quality.
Broadleaved woodlands concentrated in combes and the valleys of the NCA.	■ Woodlands are designated as SAC and SSSI. ■ At the head of the combes, tongues of scrubby woodland merge with the heathland to create an edge habitat of considerable value. ■ The woodlands are an integral part of the Quantock landscape. ■ They increase biodiversity and provide cover for iconic species such as red deer and nesting sites for birds such as pied flycatchers. ■ Much of the western oak woodland is classified as ancient woodland.
A scattered settlement pattern of individual houses, tiny hamlets and small villages. The area shows a surprisingly diverse array of vernacular building styles which arises from the rich variety of local building materials.	■ Each of the Quantock villages has its own identity which helps to create the character of the area. ■ There are many listed buildings. ■ Interesting examples of a distinctive style of farm building, constructed with rough blocks of sandstone, smaller blocks of sandstone with cob or brick above and thatched or tiled roofs.
The many historic features of the landscape, including bronze-age barrows, Saxon field patterns, medieval manors and parkland.	■ There are 49 Scheduled Ancient Monuments within the NCA. ■ The ancient field patterns, barrows, standing stones and other monuments help to provoke a sense of place. ■ There are veteran trees in the parks these are often a significant ecological resource.

Landscape opportunities

- Protect and manage the historic hedgerows and hedgerow trees, replanting where necessary, for example where old beech trees have fallen or hedgerows have developed gaps.
- Protect and manage the valuable semi-natural habitats to maintain and increase biodiversity by use of appropriate management techniques, for example grazing the heathland.
- Protect historic features across the NCA, including earthwork remains, standing stones, medieval field systems and manor houses for their strong contribution to the sense of place and sense of history and so that the nationally important record of the past remains.
- Protect the current historic settlement pattern by encouraging any new building to be within current settlements and to match the local vernacular.
- Manage parklands to retain ancient and veteran trees whenever possible.
- Conserve and manage the plateau landscapes for their local distinctiveness and high levels of tranquillity with exposed high open moorland and more intimate wooded valleys, ancient pasture fields, mixed agriculture and historic settlements.
- Protect from damage and appropriately manage the area's rich cultural heritage, most notably bronze- and iron-age remains, hill-top enclosures and earthworks and estates and planned landscapes.
- Manage sustainably the herds of red deer so that they do not damage biodiversity but remain an integral part of the Quantocks landscape.
- Protect and manage ancient and semi natural woodland, restoring paws and creating targeted new woodland where appropriate.
- The regeneration of overgrown beech hedgebanks represents a challenge in how to retain these distinctive Quantock features by means of a sensitive long term management plan.
- Manage and extend the biodiverse wet heathland and acid flushes which help to control the water quality and flow of water to the lower land of the Vale of Taunton and Quantock Fringes NCA.

Ecosystem service analysis

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	Arable Orchards Dairy Sheep and beef rearing	Livestock rearing is the most common land use in the NCA with sheep being the most common livestock type followed by cattle. The richer soils of the northern part of the NCA are mostly arable land. In recent years some farmers have diversified to grow crops such as field beans, maize, peas and linseed. There are a handful of historic Quantock orchards remaining. They provide fruit for cider making.	Regional	The Quantock hills have a long history of food production and so agriculture has done much to shape the landscape that we see today. A sustained message for nationally recognised landscapes such as the Quantocks is that it remains difficult for many farmers to maintain their incomes from farming alone. This is a particularly acute problem for small- and medium-sized farms making it a real threat to the intimate scale of the enclosed Quantock farmed landscape, the removal and decline of hedgerows being an example of this. The diversification to subsidised crops such as peas and linseed creates bright splashes of colour in the more muted tones of the landscape but they do not dominate the hills. Livestock grazing has an important part to play in retaining the traditional character of the Quantock landscape. However, significant changes in the economics of farming have been taking place over the last few decades. Livestock farming is struggling to cope with the rapidly increasing price of fuel and animal feed stuffs, coupled with higher standards of animal welfare and a lack of local infrastructure such as abattoirs. In recent years there has been a resurgence of interest in local food and drink products such as cider. This means that there is now support from Somerset County Council and cider makers for protecting old orchards and the planting of new orchards.	Work with the local farming community to safeguard future food production, especially meat and dairy while enhancing key ecosystem services such as biodiversity, water quality, water regulation (flooding), soil erosion and quality, pollination services and genetic diversity. Encourage the purchasing of local produce to benefit climate regulation and local culture. Encourage sensitive management practices by supporting the provision of agri-environment advice on schemes and organic conversion in the Quantocks. Further develop links with the County Farms Estate to provide local examples of good environmental practice and protect, enhance and reinstate management of Quantock hedges and traditional field boundaries, particularly beech-associated banks hedgebanks.	**Food provision** **Biodiversity** **Regulating water quality** **Regulating soil erosion** **Regulating soil quality** **Pollination**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Timber provision	Timber from conifer plantations	The NCA contains 2,346 ha of woodland (31 per cent of the total area), of which 849 ha is coniferous plantation and 122 ha is felled land/prepared for planting.	Regional	Interest in large-scale conifer plantation has abated and the older conifer plantations are being brought into a more varied type of management that enhances wildlife and visual interest. Invasion by rhododendron and grey squirrel damage are particular management problems. The NCA has several varieties of broadleaved woodlands such as ash-hazel woodlands, Western sessile oak woodlands and small farm woodlands. Opportunities for the production of wood fuel at the local level are strong in these woodlands, potentially benefitting the farmer, the local economy and renewable energy production. Decline in traditional management including small-scale felling, replanting, coppicing and the clearing of unwanted alien species such as rhododendron may have led to a reduction of wildlife interest in many Quantock woodlands. Loss of economic significance in the produce of these woods in part generated by the availability of cheap alternative materials for markets such as fuel and fencing is mainly responsible for this decline; however wood fuel initiatives may be able to counteract this.	The role of forestry plantations in providing sustainable building materials is increasingly significant for climate change mitigation. In 2007 The Forestry Commission launched 'A Woodfuel Strategy for England' with an ambitious target to bring an additional 2 million tonnes of wood from English woodlands to the market per year by 2020. The Quantock Hills AONB is a key partner in (and geographic part of) the successful Western Somerset Local Action Group bid for European funding. This will provide significant funding to stimulate low-carbon economy initiatives in the area over the life of this plan. The use of farmland in the southern AONB to grow Christmas trees is a recent development which will be monitored for landscape and biodiversity impact.	**Timber provision** **Climate regulation** **Biodiversity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability	Catchment for Hawkridge and Durleigh reservoirs, private water supplies and for the River Parrett	There are no major rivers or canals. Along the steeper western scarp, streams have cut down to form deep, incised combes that are thickly wooded. In contrast, to the east the land falls as a gentler dip-slope with long, broad valleys through which streams flow into the Vale of Taunton Water habitats include acid flushes or mires on the upland heath, and the streams flowing from them through heath, wood and farmland. The NCA has an important role as a catchment both for public water supply through Hawkridge and Durleigh reservoirs, in the Vale of Taunton and Quantock Fringes NCA and for many private sources. The area is also part of the upland catchment for the River Parrett.	Regional	The hedgerows of the NCA, especially those which incorporate a stone wall also help to slow surface run-off. Heathland, woodland and permanent pasture also serves to slow the rate of surface run-off. This allows water to be absorbed into the ground to feed the water supply. As there is currently no public abstraction of water within the NCA, there is little risk of low flow levels caused by over-abstraction.	Maintain and improve hedgerows, paying special attention to the placement of gateways with regard to the direction of water flow. Encourage an assessment of impact on water flow and quality before turning any pasture to arable. Encourage the maintenance of the upland mires by appropriate grazing levels.	**Water availability** **Food provision** **Regulating water flow** **Regulating water quality** **Regulating soil erosion** **Regulating soil quality**
Genetic diversity	N/A					
Biomass energy	Broadleaved woodland Miscanthus production	Opportunities for the production of wood fuel at the local level are strong in many of the broadleaved woodlands, potentially benefitting the farmer, the local economy and renewable energy production. However as yet, cutting for wood fuel is on a very small scale. Miscanthus now features significantly on the farmed coastal strip and on the southern slopes of the hills.	Regional	The Coordinated Woodfuel Initiative has already helped with the installation of wood-burning boilers in many premises, including an educational facility at Yeo Valley Farms in Somerset and estate buildings at Cothelstone in the Quantock Hills AONB. Coppice of hazel, ash and other suitable species provides fuel for woodburners. Miscanthus fields can look out of place in a traditional rural landscape and the fairly intensive farming methods required to plant the rhizomes might damage the soil and require the widening of gateways. As yet, the impact of this comparatively new crop has yet to be fully assessed.	There is scope to bring more areas of woodland back into traditional coppice for further small scale wood fuel production and benefits to biodiversity. Consideration on the effects of miscanthus should be encouraged, so it generally should be restricted to arable fields within existing cropping patterns, rather than large blocks of contiguous fields.	**Biomass energy** **Climate regulation** **Biodiversity** **Regulating soil erosion**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	Wet heathland soils Soil carbon and stable microbial community under permanent pasture Woodlands, orchards and an extensive network of hedgerows	About 100 ha of wet heath is known on the Quantocks. This is on a peaty, carbon rich soil which makes an excellent carbon store. Formerly, there was probably much more blanket bog within the NCA, but management such as burning, grazing and drainage has led to the degradation of considerable blocks. The concentration of permanent pasture contributes through soil carbon storage which would otherwise be released by aerobic microbial activity on exposure of the soil to air through activity such as ploughing. Hedgerows and the trees of woodland, parkland and orchards also contribute to carbon storage.	Regional	The wet heath on the top of the Quantocks is currently an excellent carbon store due to the peat that makes up the soil. However if the peat were to dry out due to climate change or poor management then its carbon storage capabilities would be lost. High concentrations of permanent pasture also retain carbon, an increased proportion of which would be released through microbial action if the soil was ploughed and exposed to air. However, grazing of permanent pasture by cattle and sheep, in this area, can result in release of methane by the animals themselves. Production of inorganic fertilizer is particularly energy intensive and large volumes of greenhouse gases emitted during production. Soil testing enables the calculation of optimal fertilise application rates, so reducing excess use of fertiliser, saving energy, money and benefiting water quality.	Increase sequestration of CO_2 through expansion and creation of areas of favourably managed wetland habitat. Maintain carbon storage particularly on peat soils and buried peat deposits for example on Quantock Common. Prevent CO_2 release by maintaining permanent pasture and ensuring it is managed within a sustainable regime. Some opportunity for carbon storage through small-scale woodland expansion on appropriate sites and increasing the number of hedgerow trees where these have declined. Maintain traditional orchards, wood pasture and parkland, stores carbon both through the trees themselves and the permanent grassland beneath. Work with the farming community to ensure they have adequate access to; soil analysis to enable the calculation of appropriate levels of fertilizer inputs to reduce energy wastage and benefit water quality.	**Climate regulation** **Biodiversity** **Regulating water flow** **Regulating water quality** **Water availability**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	Hedgerows and buffer strips across steeper slopes Permanent grassland Appropriate tillage Good livestock management Wet heathland	The total area of Nitrate Vulnerable Zone is 3,513 ha, 46 per cent of the NCA. Impacts on the lower courses of Quantock streams have followed changes in arable farming, including nitrate run-off from farming and silting from soil erosion resulting from deeper and more regular cultivation of soils.	Regional	The heath and permanent pastures of the NCA are generally good for water quality. Areas of arable land, especially where there are crops that require high fertiliser levels, cause high levels of nitrates in the local water. Arable crops can also cause a decrease in water quality due to ploughing and exposed soil as the plants grow. The cropping and planting pattern of miscanthus requires ploughing in the winter which increases the rate of waterway sedimentation. Farmyards and overwintering livestock can reduce water quality when not properly managed.	Maintain ecological flow levels in water courses by managing private water abstraction to avoid over abstraction resulting in low flow levels. Expand the network of semi-natural wetland habitats adjacent to watercourses including; heathland mires and reedbeds, plus creation of grassland buffer strips, restoration of hedgerows across slopes within river catchments, to reduce the amount of soil entering the rivers through run-off. Work with farmers to reduce any point source emanating from farmyards.	**Regulating water quality** **Regulating soil erosion** **Biodiversity** **Climate regulation**
Regulating water flow	Wet heath Hedgerows Woodland Mires on the upland heath reduce peak flow events across landscape	Woodland, wet heath and hedgebanks regulate water flow, reducing the 'flashiness' of rivers and streams. Along the steeper western scarp, streams have cut down to form deep, incised combes that are thickly wooded. In contrast, to the east the land falls as a gentler dip-slope with long, broad valleys through which streams flow into the Vale of Taunton and Quantock Fringes NCA.	Local	Due to the hilly nature of the Quantock landscape as well as the benefits from heathland, permanent pasture, woodland and hedgerows, there is little problem from flooding within the NCA. The mires on the upland heath provide a valuable service for the surrounding Vale of Taunton and Quantock Fringes NCA by slowing water run-off into the lower catchment. This helps to reduce the chances of flash flood events.	Seek to restore semi-natural habitats, particularly wetland habitats to regulate water flow across the landscape. Seek opportunities to restore or improve hedgerows across slopes. Where appropriate, improve soil quality to increase water retention and reduce run-off.	**Regulating water flow** **Regulating water quality** **Biodiversity** **Regulating soil erosion** **Regulating soil quality**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil quality	Unimproved pastures Appropriate stocking levels Appropriate tillage Hedgerows and woodlands	The most widespread soil type found within the NCA are the typical brown earths of Milford Association which are ideally suited to livestock rearing enterprises and cover the lower, south eastern end of the hills. The red Mercia Mudstones found on the fringes of the NCA and on the coastal lowland, weather to a fertile, moisture retaining, clayey loam which is suitable for mixed dairying and arable farming. Semi-natural habitats such as broadleaved woodland help to maintain a build up of organic matter and thus increase soil quality. Man-made hedgerows also help to achieve the retention of organic matter.	Regional	The soils under heath and woodland are generally not under much threat from livestock compaction. There is more of an issue on pastures where the grazing density tends to be higher and there is a risk of soil compaction and poaching which weakens the topsoil structure, opening it up for further damage. Soils under arable use are at an increased risk of compaction and loss of organic matter. Broadleaved woodland and hedgebanks seldom receive much disturbance, these days so they are valuable assets for retaining or increasing the soil quality by addition of organic matter.	Support measures which employ minimal tillage to increase soil organic matter and relieve soil compaction on a landscape scale. Work with the farming community to achieve appropriate stocking regimes, which avoid poaching and reduce erosion. Support measures which increase the volume of organic matter within the soil to improve soil structure and conditions for soil fauna, increasing water infiltration.	**Regulating soil quality** **Regulating water quality** **Biodiversity**
Regulating soil erosion	Hedgerows across steeper slopes Permanent grassland Heathland Sustainable systems of arable cultivation Well-managed livestock systems	Soil erosion is a concern where arable farming is prevalent. There is also a problem of soil erosion on the hills where the topsoil has been removed to make tracks and parking areas. Soil erosion is not much of a problem where there is a good layer of permanent vegetation such as on heath and permanent pasture. On the hill tops, legal and illegal use of vehicles as well as to some extent, horse riding and cycling, cause soil erosion of current tracks and sometimes create new tracks, or areas with no turf which suffer from erosion.	Local	Woodlands, dense hedgerows and buffer strips across slopes and alongside water courses can reduce the velocity of water as it flows across farmland, potentially reducing soil erosion and safeguarding soil quality. On some areas of the hills, the topsoil has been removed to reveal bare sandstone as a hard base for parking. There is generally no barrier between these car parks and the Site of Nature Conservation Interest (SNCI) grassland, which creates a risk of the slow enlargement of the parking area, through loss of topsoil from the edges. Once lost it is very difficult to regenerate.	Place barriers around parking areas to allow a buffer layer of vegetation to cover the soil, preventing drying and erosion. Work with landowners to produce sustainable systems of arable cultivation and well managed livestock to reduce poaching and soil exposure, particularly on the steeper slopes of the NCA, using measures such as expanding areas of permanent grassland, woodland, dense hedgerows and buffer strips across steeper slopes. Maintain and create areas of semi-natural habitat and permanent grasslands to minimise soil compaction to improve water retention and reduce soil run-off across the NCA.	**Regulating soil erosion** **Regulating water flow** **Regulating water quality** **Biodiversity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Species-rich grassland Heathland Well-dispersed networks of traditional orchards and hedgerows Flower-rich road verges	Pollination services are quite important in this NCA due to the pollination requirements of commercial orchards and horticulture. Grassland and heathland provide nectar sources for pollinating insects in this NCA. Hedgerows and traditional orchards also provide additional resource both during the blossom and in the ground flora, if managed appropriately. The Quantock Beekeepers Association apiary for the breeding and monitoring of bees.	Local	The heathland that covers the top of the hills provides an excellent nectar source for pollinators which then go on to help with pollination of orchards and arable crops. The heather and gorse on the heath are a valuable source of late flowering nectar. Traditional orchards, while benefiting from pollinators themselves, also provide nectar-rich blossom which helps to maintain pollinator densities in areas where commercial orchards also benefit. Incorporation of flower-rich headlands, hedgerows and buffer strips into agricultural systems maintains a network of nectar sources throughout the farmed landscape. Sympathetic management of road verges can be a beneficial addition to this network and also are aesthetically pleasing instilling a sense of place in people.	Increase the area of semi-natural habitats, with particular emphasis on heathland, unimproved flower-rich grasslands and traditional orchards. In addition, encourage the use of nectar and forage mixes in arable land, and species-rich hedgerows, to increase the availability of nectar sources in close proximity to food crops requiring pollination. Work with local authorities and parishes to create multi-functional green spaces incorporating sympathetic management for pollination including appropriate management of road verges into cutting regimes, adding to the network of nectar sources close to pollinated food crops.	**Pollination** **Food provision** **Biodiversity** **Sense of place / inspiration**
Pest regulation	N/A					

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of place/ inspiration	Rolling hills, upland heathland and long views over the surrounding area Sense of remoteness when up on the heathland Traditional orchards Broadleaved woodlands Traditional rural landscape	Sense of place is provided by the wild and remote feeling of the hill tops and the traditional rural landscape of the lower lands. There are long views from the hill tops, which are fairly unencumbered by the workings of modern man. The Quantocks have a strong association with artists and writers such as Wordsworth and Coleridge. The strong sense of place and landscape character contributes much to the designation of AONB for much for the NCA.	National	The upland landscape provides a sense of wildness and remoteness and is very empty of human infrastructure. Tracks and parking areas are the most notable human impacts on the area and poor placement of new infrastructure could easily have a detrimental effect on the landscape. Visitor pressures – wheel, hoof and foot traffic can erode and ultimately destroy fragile and vulnerable features, which need safeguarding measures as well as interpretation to encourage the visitor to appreciate their importance to the NCA. On the lower land, the pattern of small fields interspersed by traditional farmhouses and small villages and hamlets provides a different feeling of rural tranquillity. Changes in farming methods and the rising popularity of keeping horses on smallholdings is having an effect on the feel of the landscape, as they require different fencing methods, new large buildings and other items of infrastructure. There are few historic orchards remaining but those that do remain are an important part of the heritage of the area and integral to the rural sense of place. The maturing of conifer plantations will allow strategies for developing mixed woodland or reversion to open moorland to be considered.	Maintain the openness and tranquillity of the hill-top heathland and continue to avoid the cluttering of the landscape, for example continuing to use subtle signage where appropriate. Maintain the dispersed settlement pattern with a local vernacular of local stone and some thatch. Maintain the historic division of field patterns; small fields with open commons and a regular pattern of straight-sided Parliamentary enclosure. Maintain and restore the distinctive traditional orchards and work to find markets for produce to ensure their future viability and sustainability. Maintain and restore the heathland, beach hedgebanks, traditional orchards, parklands, woodlands and unimproved grasslands. Maintain the long-distance views from the hill tops and towards the coast. Maintain the setting of villages together with the integrity of their vernacular styling. Maintain and restore livestock farming associated with parts of the landscape and which provides variability of habitat found across this area.	**Sense of place / inspiration** **Sense of history** **Biodiversity** **Recreation** **Tranquillity**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Bronze- and iron-age archaeological features Ancient field patterns Medieval manors at Kilve and Quantoxhead Remnants of industrial heritage such as limestone kilns and 20th-century oil retort at Kilve Historic parkland and estates	Sense of history is provided by a wide variety of highly significant archaeological features such as iron-age hill forts, bronze-age barrows and Neolithic standing stones such as the Long stone on Longstone Hill. Historic features range from the bronze- and iron-age remains on upland common, which has particular prehistoric significance, to the surrounding farmland, much of which is Saxon in origin and shape. Superimposed on this are the mainly 17th- and 18th-century parklands, and the enclosures and boundary modifications of subsequent years, evolving as marginal land came into, and drifted out of management. There are 49 statutorily protected Scheduled Ancient Monuments forming part of the historic environment of the AONB, with a total of 474 significant Quantock features recorded on the Sites and Monuments Record maintained by Somerset County Council. There are also listed buildings and six nationally scheduled parks and gardens, three in the NCA and three just outside. Scheduled and listed sites, however, represent only part of the historic environment of the NCA.	National	The wealth of historic elements found in the NCA have great value, both to archaeologists and historians but also to general public, who often enjoy the recreation of visiting such sites. They also have an educational value, helping to link people with their historic environment. Often within historic parkland veteran trees are threatened for a number of reasons. Hollow trunks and dead branches are valuable elements of these trees and not necessarily signs of disease; however, such features can lead to a veteran tree being cut down as dead or dying and a threat to the public where access is associated. Felling large trees because of age and assumed threats can have a major impact on landscape. Wildlife, concerns about public safety and landowner liability make this a particular issue for roadside trees.	Protect known archaeological and conservation sites, enhancing historically significant sites and recording newly discovered historic and culturally significant Quantock features. Through partnership landscapes and archaeological features projects with archaeology and historic landscape specialists This will help to increase enjoyment and understanding for all visitors to the Quantock landscape. Continue to develop a detailed evidence base on the historic environment of the Quantocks. Reinstate lost or damaged features of the historic environment in the NCA involving local communities. Develop a project to assess Quantock parkland and associated heritage trees and seek their effective conservation and management. Identify traditional orchards in the Quantock area and offer owners support and information for their management and protection. Develop an oral history project involving Quantock communities in recording stories, customs and traditions from the Quantock area.	**Sense of history** **Biodiversity** **Sense of place / inspiration** **Recreation**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	Ancient woodlands and parklands Rural landscape Heathland hill tops	Based on the CPRE map of Tranquillity (2006) the Quantock Hills have a high tranquillity rating. The area is least tranquil at its edges where it is close to larger roads and more settlement. 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 the Quantock Hills continue not suffer a great deal of intrusion. In 2007 Intrusion category 94 per cent undisturbed, only a 6 per cent change since the 1960s. On a national scale, this is a very low intrusion rate and an asset which needs protecting and managing.	National	There is very little visual, noise or light intrusion within the NCA. There are no main roads within the area and only a few minor roads cross the hill tops. There is also very little visual intrusion from infrastructure such as electricity pylons. It is unlikely that any new roads or amenities will be needed in the immediate future. There are relatively few buildings in the landscape and most that do exist are in the local vernacular. New farm buildings and conversions might increase the 'business' of the landscape, as well as increasing traffic which could eventually lead to a decline in tranquillity. There is a mast at Lydeard Cross indicating potential pressure for further communication masts and potential cluttering of a visually sensitive skyline.	Protect the undisturbed and tranquil nature of the NCA, a feature highly valued by those who visit, by ensuring careful management of the visitor pressure, development and infrastructure Limit the visual impacts of large infrastructure through careful design and planning. Try to keep infrastructure for tourists in areas where it is least intrusive upon the landscape.	**Tranquillity** **Sense of place / inspiration**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation	Walking, cycling, horse riding, shooting, deer hunting Stately homes/ parks	40 per cent of the NCA 3,076 ha is classified as being publicly accessible. There are 203 km of public rights of way at a density of 2.7 km per km^2. There are no National Trails within the NCA. 2003 Quantock hills visitor survey – the 2003 survey indicates that Somerset-based visitors still make up 73 per cent of the total, the majority of visitors to the Quantocks are day-trippers rather than tourists from further afield.	Regional	Quantock visitor patterns show that the majority of the heavy recreational use in the AONB continues to take place in the sensitive upland areas, based on parking locations on or adjacent to Quantock Common. Public transport to these sites is not available, and visitors step out of their cars straight into a sensitive Site of Special Scientific Interest where wildlife disturbance and erosion are significant concerns. A small number of parking areas without clearly defined boundaries remain in the heart of the sensitive hill-top heathland. Visitor parking at these sites, particularly along the Crowcombe to Stowey road is difficult to manage, and can "spillover" causing damage, erosion and loss of vegetation from the heath. As local shops and services are located almost entirely in settlements around the base of the hills these visitors are given no opportunity to buy goods or services in the NCA and Quantock villages tend to experience the problems of visitor traffic rather than the benefits of visitor spending. A wide range of events including orienteering, school groups, horse riding events, sponsored walks, training for the military or emergency services, hunting and guided walks take place throughout the year on the hills. Large or clashing events can have focused environmental impacts in respect of wildlife disturbance and erosion, and affect wider public enjoyment of the area. Walking and riding use away from the hill-top commons area have been encouraged by the provision of circular walks and improved way marking further down the hills. The Quantock Greenway21 has been developed allowing walkers to follow a medium-length (two-day) way marked circular route all the way around the hills.	Widen and adapt access opportunities. Encourage all events and group users of the NCA to protect wildlife, to benefit the hills, to notify the AONB partnership well in advance of visits and support local businesses. Those planning events should seek advice on community uses as agreed with landowners and in the Code of Conduct. Minimise active promotion of the sensitive Quantock hill tops as a tourism destination to prevent visitor numbers becoming damagingly unsustainable. Define hill-top parking areas where necessary with boulders, low timber posts or banking subject to the agreement of landowners and commoners to reduce the impact of parked vehicles on and around the Common. Clear, or arrange the clearance of, litter and fly tipping and work with partner organisations to seek prosecutions where possible. Provide, maintain and locally promote guided walks and circular routes including sites of local interest and based on Quantock villages and parking areas off the hill tops in consultation with parish councils. Gather survey information to identify including impacts on Special Areas of visitor trends and policies, include monitoring of impacts on Special Areas of Conservation where active restoration or re-routing may be appropriate. Explore opportunities to work with partners and organisations supporting volunteering in the natural environment; to help connect people with the natural environment, increase people's knowledge of the unique biodiversity and special features of the area and to maintain, enhance and promote the biodiversity and natural features.	**Recreation** **Sense of place / inspiration** **Sense of history**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity	Wide range of semi-natural habitats including heathland, especially wet heath and acid flushes, broadleaved woodland, permanent pasture and hedgebanks.	Exmoor and Quantock Oakwoods SAC 298 ha. One SSSI covers 2,313 ha which is 30 per cent of NCA. There are 44 Local sites in the Quantock Hills covering 1,150 ha which is 15 per cent of the NCA. The area contains six different priority habitat types. The Quantock Hills are of great importance for nature conservation. The combination of geology, landform, soils and its history of human land use has resulted in a wide range of semi-natural and farmed habitats in close proximity. This makes the NCA a biodiversity resource of the highest significance. The Quantock hill tops provide the two most significant Quantock habitats of sessile oak woodland with a wealth of lichens and bryophytes and lowland heath, which includes heather, whortleberry, bell heather, western gorse and cross leaved heath. The heathland habitats include boggy areas known as acid flushes, botanically the richest habitats in the NCA, with streams flowing from them through the wooded combes to the farmland below.	National	Regular surveys of bird populations are carried out on the Quantocks through the RSPB/AONB partnership. The latest national heathland surveys show Quantock populations of nightjar are over one per cent of the UK population, a recognised indicator of national importance. The hill-top heathland and sessile oak woodland habitats together form one of the most extensive areas of semi-natural habitat in south west England and fall chiefly within the main Common "CL10". They are designated as a Site of Special Scientific Interest (SSSI) and additionally the sessile oak woodland is listed under the EC Habitats and Species Directive and protected at an international level, along with similar parts of Exmoor, as a Special Area of Conservation (SAC). This level of protection may also be appropriate for Quantock heathland based on the results of AONB/RSPB heathland bird surveys. Much of Quantock common is under a countryside stewardship agreement however significant areas of the common are not within the agreement area. The common has previously suffered from under grazing and overgrazing. Around 75 per cent of the SSSI resource is currently described as unfavourable recovering which is hopefully an indicator of positive changes to come. Projects such as that to remove rhododendron are having a very positive impact on the biodiversity.	Agri-environment schemes that favour inland extension of the cliff-top limestone grassland are valuable in maintaining and enhancing the AONB's biodiversity. A good example of this can be seen at Quantoxhead, where cattle are grazed on pasture rather than the previous production of arable crops. The monitoring of wildlife species and their habitat is important to indicate whether changes are taking place. The broad key habitats in the NCA are semi-natural heath and grassland, woodland, parkland and farmland. Periodical aerial and fixed-point photography can show if the areas of habitat remain the same or change, while wildlife surveys can monitor changes in populations of particular species. Encourage the maintenance and replanting of hedgerows, allowing the growth of some mature trees, in order to provide habitat corridors.	**Biodiversity** **Sense of place / inspiration** **Tranquillity** **Climate regulation** **Recreation**

Service	Assets/attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Stone for building	There are 17 Local Geological Sites within the NCA. There are three broad divisions in the Quantock geology. The northern plateau is underlain by hard Hangman Grits. The central area is where the varied Ilfracombe slates overlie the Hangman Grit and in the southern area the Ilfracombe beds are overlain by softer Morte Slates which have weathered to create lower, more rounded hills.	National	The geology of the Quantock hills is formed mainly by rocks of the Devonian period. There is a long history of quarrying the stone for building as evidenced by the many small abandoned quarry sites. Triscombe quarry was the last working quarry; it closed in 1999.	Some disused quarries may offer significant opportunities for geological interpretation, particularly some of the smaller ones. Some disused quarries may offer opportunities as wildlife reserves. Protect and enhance coastal areas of geological interest, through partnerships, projects and distinctive landscape contribution initiatives supporting sensitive management of the landscape and wildlife of these areas.	**Geodiversity** **Sense of place / inspiration** **Sense of history** **Biodiversity**

Photo credits

Cover photo: The gentle lower slopes of the Quantock Hills have been farmed for thousands of years and have developed a tranquil, strongly rural character.

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