National Character Area profile:

151. South Devon

NATURAL ENGLAND

www.naturalengland.org.uk

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.

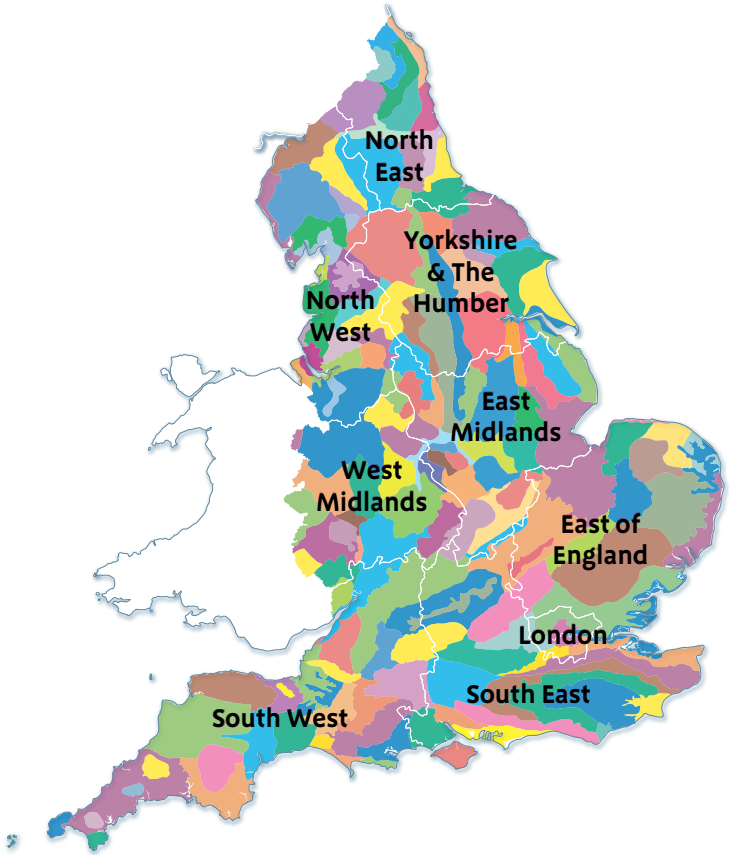
NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and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

South Devon NCA is predominantly a plateau, dissected by steep valleys and rivers, most rising on the adjoining Dartmoor NCA. Towards the coast the often wooded valleys and rias are remote and hard to access from the land. The majority of the area consists of mixed farming, with fields flanked by Devon hedgebanks and narrow winding lanes. The south of the area contains many internationally important coastal and estuarine habitats. These support populations of wintering waders and wildfowl, rare plant communities and also provide significant carbon storage. Much of the area is a popular visitor destination, with the South West Coast Path National Trail being a major asset. Historic market and coastal towns are strategically located across the area and the two major urban settlements are located at either end of the coastal stretch, Plymouth in the west and Torbay in the east.

The quality and character of the area is recognised by designation as an Area of Outstanding Natural Beauty (AONB), containing all of the South Devon AONB and part of the Tamar Valley AONB. It also includes The South Devon Heritage Coast, Cornwall and West Devon Mining Landscape World Heritage Site and the UNESCO 'English Riviera Global Geopark'. Mixed farming remains the main agricultural occupation, although there has been a slight decrease in the numbers of livestock seen in the landscape. High uptake of agri-environment schemes in recent years has led to significant increases to the largest remaining UK populations of the threatened cirl bunting. Fishing, particularly shell fishing in the area's estuaries, is a significant industry along the coast.

Statements of Environmental Opportunity

- **SEO 1**: Protect and manage the coastal and estuarine landscape with its diversity of cliffs, geology, geomorphology, historic features, habitats and associated wildlife, contributing to the livelihoods, enjoyment and education of people.

- **SEO 2**: Protect and extend the mosaic of semi-natural habitats within a mixed-farm, productive and versatile landscape of high scenic quality, rich in biodiversity. Increase the connectivity of habitats by expanding and enhancing the network of traditional, floristically diverse hedgebanks and river valley woodlands.

- **SEO 3**: Protect and manage the nationally recognised and distinctive character of the landscape, the natural beauty, scenic quality, archaeological resources and historic features, such as maritime military sites, geological features and mining heritage. Enhance recreational resources, access to nature and heritage assets, particularly along the coast, to ensure public benefit and enjoyment.

Click map to enlarge; click again to reduce.

Description

Physical and functional links to other National Character Areas

The South Devon plateau wraps around the southern and western edge of Dartmoor, the boundary between the two landscapes is clearly marked in the south by the A38. The settlements of Tavistock, an ancient stannary town associated with the tin mining industry, and Bovey Tracey, both act as 'gateways' to Dartmoor. Although there is some character transition northwards, a strong contrast between the two character areas is clear.

Cottages of cob, thatch and slate, in Thurlestone village near Kingsbridge.

Dartmoor provides a visual backdrop to much of South Devon NCA, as well as being the source of eleven of the thirteen rivers that flow through and dissect the plateau, giving the area its distinctive landform. The water from adjoining Dartmoor supplies most of the settlements in the area, supplemented by the waters of the Tamar, whose catchment spreads across the adjoining Culm and Cornish Killas NCAs, to the north and west of the South Devon NCA. To the east the wider valley basin of the River Bovey, the Bovey Basin, partly separates South Devon from the Devon Redlands.

The River Tamar, which rises only 6 km from the north Cornwall coast, forms the western boundary, separating the area from Cornwall. The NCA has many features in common with the south-east area of Cornwall, immediately west of the river. Forming the southern boundary of the area is the coast, almost entirely designated and defined as AONB and Heritage Coast. Coastal processes functionally link to the east (Devon Redland NCA) and west (Cornish Killas NCA) of the area. The South Devon NCA is within the wider coastal sediment cell covered by the Durlston Head to Rame Head Shoreline Management Plan, which stretches for 307 km along the coast from Dorset to Cornwall.

Historically South Devon has tended to be an isolated part of the country, the main communities confined to the coast and estuaries and communication being by sea. There are many agricultural and industrial connections between the adjoining 'upland' Dartmoor and the coastal plateau and its ports. Nowadays the area is linked westwards to Cornwall and eastwards to Exeter by the A38 trunk road and mainline rail network. The area is readily accessed by the urban communities of Plymouth, Torbay and Exeter.

Distinct areas

- Tamar Valley

Key characteristics

- Rounded hills, without strong patterns, separated by steep, intricate wooded valleys with fast flowing rivers.
- Diverse and complex coastline, often reaching deep inland along rias and estuaries. Distinctive cliff formations with raised beaches and caves. The classic landform of Slapton shingle ridge and lagoon, which supports many internationally important bird species and rare plant communities.
- Rias, or drowned river valleys, with large expanses of tidal water and mudflats extending far inland. The rias are often steep-sided, with broadleaved woodland down to the tidal edge.
- Arable and pasture fields, with larger fields on the higher flatter land and a more intact, smaller irregular field pattern on the valley flanks. When ploughed the characteristic red soils add to the pattern of the landscape.
- Wildflower rich, often treeless, hedgebanks providing field boundaries and borders to the typical narrow sunken lanes linking scattered farmsteads and hamlets.
- Villages and towns generally in sheltered valley locations or at the heads of rias, with the larger urban settlements located at either end of the coastal stretch. Rural buildings of local stone and slate, with some cob and thatch.
- Industrial heritage of the mineral mining in the Tamar Valley, with mine chimneys, quarries and mining settlements. Distinctive landscape of ball clay extraction in the Bovey Basin.

The dramatic coastline at Start Point.

South Devon today

At its core, South Devon is a fertile, agricultural landscape, with smooth, rounded hills separated by deep, wooded valleys; a patchwork landscape of arable and improved pasture. Larger fields occur on higher, flatter land with more intricate, smaller-scale fields on the valley sides. The resultant rich and complex mosaic of habitats, supporting many arable and grassland plants and farmland birds, is further emphasised by a network of hedgebanks providing a stronghold for important, rare species, such as cirl bunting, and foraging grounds for greater horseshoe bats. A sense of enclosure pervades, particularly alongside ancient, sunken lanes, often topped with closely trimmed hedges and accompanied by a profusion of wildflowers, connecting scattered farmsteads and hamlets.

A northerly view over the Salcombe-Kingsbridge Estuary: one of South Devon's ria estuaries, popular with visitors.

Nearer the coast the plateau rises. The few trees that exist away from shelter are windswept, and the landscape can seem remote and exposed.

Occasional views of the sea glinting on the horizon signal the proximity of the coast. The northern edge of the area merges with the pastoral landscape of the Dartmoor fringe. The mass of Dartmoor provides a backdrop to most of the NCA.

The length and complexity of river valleys and rias, which cut through the southern plateau, impair east-west travel, contributing to the feeling of remoteness. In the valleys and estuaries semi-natural and ancient woodlands of oak and ash remain, often on steep north-facing slopes inaccessible for farming. The mild climate and lack of pollution support communities of bryophytes and lichen associated with ancient woodlands. Fast-flowing streams and rivers hold Atlantic salmon and provide feeding grounds for otter and kingfisher.

Where valleys widen into floodplains, patches of marsh and belts of willow and alder abound. Larger valleys have fertile farmland enclosed by woodlands, with occasional orchards on the outskirts of small settlements. The Dart valley is the broadest, with a substantial floodplain, steep, wooded slopes and numerous settlements. In the east the Bovey valley widens to a basin ringed by wooded hills. It is characterised by the lakes, ponds, and spoil heaps of the ball clay industry, and some pockets of heathland.

Small settlements lie in sheltered valleys, at the head of creeks, or alongside watercourses at crossing points. Much of the character is derived from buildings constructed from local stone or cob, with thatched or local slate roofs.

Large 17th and 18th century corn barns, with one end dug into a bank for high-level loading, are unique to the area. Some larger settlements, such as Kingsbridge, developed at the head of the rias, while other towns including Dartmouth, Salcombe and Newton Ferrers, grew up near the mouths of the estuaries. Modern bustle in the settlements, on and off the water, contrasts with nearby tranquil tidal creeks with steeper wooded sides.

Torbay and Plymouth contrast with the rural areas. Plymouth remains an important naval city with an historic waterfront, while Torbay, with its distinctive clumps of Monterey pine, palm trees and sandy beaches, has developed into a popular tourist destination.

Though the rias each have individual characters, they display similarities with convex sides, cultivated where gradients are gentle or wooded where steeper. Their winding nature and steep sides restrict access, except from the water. Around some of the estuaries, internationally important mudflats, salt meadows and sandbanks provide habitats for bass nurseries, shell fish as well as wintering waders, such as avocet, wildfowl, and a rich marine life.

Away from the rias and beaches is a long rocky coastline. Sandstone and slate form cliffs of great variety, including the spectacular craggy ridge of Start Point and rugged cliffs of Prawle Point, Bolt Tail and Bolt Head. Berry Head is a distinctive limestone headland; the Torbay limestone supporting a number of rare calcareous plants. Across the whole area the varying underlying geology, combined with a coastal climate results in the occurrence of many rare plants. The active and ever-changing shingle bank of Slapton Sands, developed over the last 2,900 years, is particularly notable, cutting off the freshwater lake of Slapton Ley from the sea. It supports a variety of valuable habitats, flora, lichen, fungi and invertebrates, and is important for migratory and wintering birds. There are numerous historic coastal features; lighthouses, daymarks, coastguard cottages, forts and wrecks.

The Tamar Valley has some distinctive features relating to the topography, land use and underlying geology. Principally the granite ridge that runs across the Tamar Valley results in a gorge-like landscape, with thickly wooded sides and rocky outcrops. Associated with the granite are rich mineral veins giving rise to the tin and copper mining industries that dominated the area well into the 19th century. Mine chimneys, engine-houses, and small mining settlements remain. Ports and quays, now often used for leisure activities, dot the riversides and estuary. Railways superseded river transport and railway bridges and viaducts are characteristic features.

Estate woodland and parkland contrast with semi-natural oak woods and fields bounded by neat hedgerows. Around the Bere Peninsula the favourable mild micro-climate led to a dominance of market gardening that still characterises the area today. Though the industry has greatly declined, orchards, in particular cherry orchards, were once a great feature, and remnants are still found on the valley sides. Strawberry and daffodil farms remain a colourful feature of the Tamar Valley.

The landscape through time

South Devon primarily consists of Devonian sandstone, mudstone and shale laid down in a tropical sea around 395 to 370 million years ago. Sea-levels fluctuated throughout this period with shallow water deposits forming the fossil-rich Devonian limestones that outcrop around Torquay and Chudleigh, and east of Plymouth. The Devonian sediments, following deep penetration of iron oxides under desert conditions during the late Permian and Triassic, were exhumed and weathered to produce the deep, fertile red soils that support the area's strong agricultural base. During the Variscan Orogeny, the mountain building period 320 to 280 million years ago, burial, compression, folding and the propagation of low angle faults resulted in the formation of slates and allowed the intrusion of granite. Heat generated by the granites produced mineral veins of tin, copper, lead and silver. Folded and faulted slates and schists are most visible along the coast on the Start Peninsula. In the east the Bovey beds, comprising gravels, sands, clays and lignite, were laid down during the Oligocene.

Though the area was not glaciated during the Ice Age, fluctuating temperatures and subsequent sea-levels created relic cliffs and raised beaches. Cave systems formed in the Devonian limestone during the Pleistocene, 2 million to 10,000 years ago, sometimes contain rich fossil vertebrate assemblages, such as those found in Kent's Cavern. These can be a valuable record of environmental change. As ice sheets melted at the end of the last glaciation, rising sea levels inundated the lower reaches of river valleys creating rias.

Evidence of human activity from at least the Palaeolithic era has been found in coastal caves, especially at Torbay, though evidence of earlier occupation may have been masked by later activity. Fertile soils encouraged farming activity and the Bronze Age, from 2,000 BC onwards, saw increasing amounts of cultivation. Iron-age culture centred round small settlements, though the most obvious remains are coastal and inland hillforts, such as Slapton and Blackdown Rings. There is evidence that a complex iron-age society had substantial impacts on the landscape. Roman activity appears limited, though recent discoveries in the Tamar Valley suggest early exploitation for minerals, including silver.

From the 6th century, Saxon influence spread westward, establishing a settlement pattern of hamlets and scattered farms; many of today's place names indicate Saxon origin, for example, 'ham', and 'wick'. Domesday Book records the eastern part of the area as among the most prosperous in Devon.

The Calstock viaduct in the Tamar Valley.

Enclosure occurred early in this landscape, and was largely complete by the 16th century. Small, irregular enclosures and a pattern of dispersed settlement linked by winding, deep lanes are characteristic of the area.

The area fed itself and provided for the merchant and fishing fleets based in nearby ports and victualling yards around Plymouth. Orchards, present around most farms, made this the principal cider making district of the county. Market gardens featured in the Tamar Valley by the 19th century. The many 18th century and earlier buildings comprise one of the highest concentrations of rural buildings in England. Dairy farming was the main activity by the early 20th century, but mixed and arable farming has always been characteristic.

Wool and cloth were major medieval industries with many villages involved in carding, combing and spinning produce for sale at central markets such as Modbury. The wealth generated from the cloth trade, resulted in a golden era of church building in the 14th and 15th centuries, a legacy that remains a feature.

Access was poor until the arrival of the turnpikes in the 18th century. In many places it remained poor until roads were surfaced in the mid-20th century. Pack horses persisted as a means of transport until then.

Rias made safe natural harbours, and coastal traffic and sea fishing made the coastal area prosperous from an early date. Boroughs like Totnes, probably the first of the boroughs that characterised the area in the Middle Ages, and Plympton, exported cloth produced from wool sheared in the hinterland, while Torbay developed as a resort from a number of fishing ports. Salcombe, nowadays popular with tourists, developed as a fishing port and then through foreign trade in fresh fruit. The harbour is lined with villas built by the sea captains from the profits of the fruit trade.

Dartmouth and Plymouth were both important maritime centres, with Dartmouth the fourth wealthiest town in Devon by the end of the 15th century. Plymouth developed from the medieval period into the region's major port. Its naval dockyard opened in the 1690s, massively expanded from the 18th century, and remains an important base. Around Plymouth Sound and the Dart estuary is a wealth of military sites dating from the medieval period to the Second World War.

Quarrying and mineral industries have left their mark and are important elements. Quarrying of slate was important from medieval times, trade dying out due to competition from Cornwall and Wales. Similarly, tin and copper extraction and processing had a long history. Three of the four Devon Stannary towns, Tavistock, Plympton and Ashburton, developed in response to the availability of tin. Production in the Tamar area continued into the 18th and 19th centuries. Features include quays and ports, such as Morwellham Quay, mine buildings and disused railways. Arsenic was also produced in large quantities; in the later part of the 19th century Devon Great Consols was the largest producer in the world of both copper and arsenic. The open cast clay industry in the Bovey Basin left a number of features, such as pottery works and the Stover Canal. The industry continues today creating pits, spoil heaps, settling lakes and other prominent features.

Tourism began in the 18th century and accelerated in the 19th century with the arrival of the railways. Concentrated around Torquay ('The English Riviera'), the population of Torbay rapidly expanded at the beginning of the 20th century. Despite the railways extending to Totnes and Kingsbridge, tourism did not impact greatly on the rest of South Devon. Even with the development of the fashionable hotel on Burgh Island in the 1930s, beyond Torbay the area remained a relatively unknown tourist destination.

During the 1950s and '60s, with the rise of prosperity, the motor car and interest in yachting, tourism expanded. Despite the move towards foreign holidays in the 1970s and '80s, tourist numbers have continued to increase with easier access by motorway and trunk roads.

During the 1990s, moves to intensive arable farming on the plateau led to the removal of many hedgebanks with negative consequences for farmland birds. The rate of loss has declined, but lack of management has meant deterioration of many of the remainder. Tourism has contributed to the urbanisation of some settlements, with demand for bungalows and retirement homes, increased traffic and expanding caravan sites. Demand for recreation has also increased pressure for access to estuarine waters for boating, with increasing numbers of moored boats and developments around slipways. However, tourism and recreation are an important part of the local economy and the South Hams part of the area has become a market leader in green tourism.

Ecosystem services

The South Devon 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 (under the constituent headings) Further information on ecosystem services provided in the South Devon NCA is contained in the 'Analysis' section of this document.

Provisioning (food, fibre and water supply)

- **Food provision:** The area supports a mix of different farming systems reflecting fertile soils, and favourable climate. While there has been a general decline in the number of livestock enterprises, livestock retains an important role in the landscape, with dairy and beef production dominating ahead of early-season lamb. Traditional breeds for this area include South Devon and Ruby Red cattle, which are still produced in good numbers and are a distinctive element in the landscape. The extent of arable cropping can vary in response to market prices but this is largely confined to the NCA's Grade 2 and 3 soils. Traditional orchards, many with ancient fruit varieties such as the Plympton Pippin, remain a key landscape feature across the area but particularly in the Tamar Valley where there are cultural associations with cherry orchards. Much of the fruit is now used as a source of high value local produce. Market gardening and horticulture, notably the daffodils from the Tamar Valley, are becoming more noticeable at the local scale. Some of the high value products now have a national reputation. For example Riverford farm Organics, which started in South Devon, now distributes 45,000 vegetable boxes every week.

A mixed agricultural landscape, with larger fields on the higher flatter land.

The area is nationally significant for its fishing industry associated with the rivers, estuaries and rias, many of which support commercial shell fisheries, oyster and mussel farms, being the main reason why Brixham has the highest valued catch landed in England (£22 million in 2010). More than 50 per cent of the catch landed is shellfish. Most of the estuaries are designated bass nursery areas and several rivers have Salmon Action Plans in place to ensure the salmon can migrate from the estuaries to the spawning grounds upstream.

- **Water availability:** The NCA overlies formations of impermeable rock and there is no significant groundwater resource. All the rivers within the NCA have catchments that spread into adjoining NCAs and are considered diverse in nature, incorporating reservoirs and tributaries. There are large abstractions from these catchments for public water supply and industry and many smaller abstractions, for example, for agriculture, the dominant land use. Five of the catchments in the south-east of the NCA, have water available for abstraction, but the majority of catchments across the NCA are over-abstracted or have no water available for additional abstraction.

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

- **Regulating water quality:** Water quality is particularly important to this NCA because of its large number of integral estuaries and rias, many of which are designated for their biodiversity value and support a valuable fishing industry. Water quality also affects the recreation and tourism sectors, in particular the beach users and the sailors and kayakers of the coast and estuaries. Management of water quality is currently being promoted and facilitated through the England Catchment Sensitive Faming Delivery Initiative, which has identified a significant part of the NCA (from the Dart in the east to the Yealm in the west, from source to sea) as a priority area. The key issues identified to be addressed in this priority area are the reduction of run-off of soil and nutrients, the reduction of faecal contamination entering watercourses and limiting pollution pathways on farm holdings.

- **Regulating coastal flooding and erosion:** The cliffs are generally formed from resistant rocks that erode at a slow and gradual rate, making the coast relatively static compared to reaches of coastline to the east. However, there are parts of the coast that are characterised by low lying lagoons, salt marshes and other less resistant coastal features. If relative sea level continues to rise, potentially 80 cm higher by 2080, and with more extreme storm events, challenges will be created for some coastal locations including Slapton Sands, Beesands, South Milton Sands and Challaborough. The Slapton Line is the subject of a national demonstration programme in coastal adaptation. The Slapton Line Partnership has worked with local communities to anticipate and prepare for future coastal change.

- **Regulating climate change:** The capacity of soils in the area to contribute to climate regulation is low. The soil carbon content of the largely mineral soils is only 0 to 10 per cent. However, it is known that estuarine mud and silt and fringe habitats, particularly reed beds and marsh, have high carbon content. There are 8 estuaries across this NCA and further salt marshes and reed beds along the coast. This potentially provides notable carbon storage.

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** The area has a strong and clear sense of identity and place. Sense of place is provided by the area's much-dissected plateau of steep wooded valleys separating intricate but smooth rounded hills with a dense network of Devon hedgebanks, defining the field pattern, and settlements linked by sunken winding lanes frequently fringed by woodland. Distinctive rias, 'drowned river valleys', with Special Area for Conservation-designated estuarine habitats of tidal water, saltmarsh and mudflats and oak-clad slopes falling down to the sheltered water's edge, are an essential part of the coastal character. The coast, much of it Heritage Coast, offers spectacular cliffs and sandy beaches with distinctive clumps of Monterey pine. Collectively, these are many of the special qualities that define the South Devon AONB that covers much of this NCA while the Tamar Valley, another AONB within this NCA, has the additional heritage of extensive traditional orchards, mining and market gardening.

Hedgebanks border narrow, winding, sunken lanes such as at Sorley, near Kingsbridge.

- **Sense of history:** A strong sense of history is associated with the wealth of archaeological remains including prehistoric field systems, drovers' tracks and ridgeways, burial mounds, earthworks and iron-age hillforts such as Slapton and Blackdown Rings. Historic coastal features, particularly castles, blockhouses, batteries, pillboxes and slipways, mark the area's strong links to military defences. There are good examples of these around Plymouth Sound and the Dart Estuary. Coastal settlements map historic links to the sea through fishing and maritime trading. In addition, a small proportion of the NCA lies within the Cornwall and West Devon Mining World Heritage Site, reflecting the area's strong mining heritage.

- **Tranquillity:** Tranquillity is high in certain areas, for example the tidal creeks with their steep wooded sides. There are large areas of rural, unsettled inland landscape and coast which remain relatively undisturbed and tranquil. In contrast, the urban areas, particularly in the vicinity of Plymouth, have low levels of tranquillity, as do the main road corridors, in particular the A38 trunk road.

- **Recreation:** An extensive network of public rights of way, which includes the South West Coast Path National Trail, several regional trails and parts of the National Cycle Network, provides a valuable recreational resource. Further recreational opportunities are offered by open access land around most headlands and along much of the coastal corridor, and access to beaches. The maritime environment and estuarine systems provide considerable opportunity for water sports and fishing. The many historic towns and villages provide other leisure and recreation opportunities including access to local food, culture and heritage. The area has become a market leader in green tourism. The award-winning South Hams Green Tourism Business Scheme has 69 accredited businesses in the AONB improving their own environmental performance.

- **Geodiversity:** The geodiversity of South Devon is considered to be of sufficient international importance for the Torquay to Brixham area to be recognised by UNESCO as the 'English Riviera Global Geopark'.

The South West Coast Path at Torcross.

Statements of Environmental Opportunity

SEO 1: Protect and manage the coastal and estuarine landscape with its diversity of cliffs, geology, geomorphology, historic features, habitats and associated wildlife, contributing to the livelihoods, enjoyment and education of people.

For example, by:

- Restoring and enhancing estuarine habitats such as Plymouth Sound and Estuaries Special Area for Conservation (SAC) and the Tamar Estuary, for the benefit of biodiversity, particularly the bass nursery areas and shell fish, assemblages of flora, invertebrates, and passage and wintering waterbirds, such as avocet and little egret, teal, widgeon, shelduck and curlew and further reinforcing coastal landscape character.
- Maintaining and enhancing important geological exposures notably, the metamorphic rocks of the Start Peninsula, the sandstone, slate and limestone cliffs that support important assemblages of species (including nesting birds) and the caves of the South Hams SAC which support internationally important populations of greater horseshoe bats.
- Maintaining and managing geomorphological processes along the coast, that promote the development of estuarine and intertidal elements such as, mudflats, sandflats and shingle bars, and resultant saltmarsh, freshwater lagoons and marshes, for example, Slapton Ley, which contribute to flood risk management, coastal defence, landscape character, biodiversity and recreation, while maximising carbon sequestration and storage in intertidal sediments.
- Maintaining and managing natural and semi-natural habitats and features backing the coast and estuaries which currently serve to alleviate coastal flooding and which would aid resilience to future sea-level rise.
- Incorporating coastal heritage sites into adaptation plans and realignment measures through recording, promoting, understanding and recognising their historic significance and contribution to coastal landscape character.
- Identifying and creating areas inland of existing habitats that would accommodate new coastal fringe habitats, particularly marshes, lagoons and wetland, with the capacity to withstand or absorb coastal and/or riparian flooding.
- Increasing opportunities for people to deepen their understanding of the natural and historic environment and to take action to improve it.

SEO 2: Protect and extend the mosaic of semi-natural habitats within a mixed-farm, productive and versatile landscape of high scenic quality, rich in biodiversity. Increase the connectivity of habitats by expanding and enhancing the network of traditional, floristically diverse hedgebanks and river valley woodlands.

For example, by:

- Extending and reconnecting fragments of calcareous grassland on steep inland slopes and maritime grassland on cliff-tops, benefitting water quality and infiltration, reducing soil erosion and enhancing biodiversity and landscape character.
- Restoring, repairing and enhancing wildflower-rich Devon hedgebanks and repair and replacement of locally distinctive stone walls in the southern coastal plateau area of the NCA, particularly to support and reinstate extensive grazing regimes and restrict livestock access to river and streams in the Catchment Sensitive Farming priority catchments.
- Encouraging uptake of environmental stewardship options to build on recent increases in the cirl bunting population and for the benefit of farmland birds generally and the conservation of the historic environment.
- Maintaining the balance between pasture and arable use, utilising permanent grassland buffer strips and grass margins in arable fields, encouraging cultivation across slopes to reduce soil erosion, especially within the Catchment Sensitive Farming priority catchments, and catchments in the east of the NCA including the Bovey.
- Realising the opportunities to make further connections between arable and pastoral land use through the expansion of semi-natural linear features including hedgebanks, streams, sunken lanes and woodlands particularly on and across steeper slopes of valleys containing rivers and streams, reducing soil and nutrient run-off into watercourses.
- Restoring and extending areas of lowland heath, notably on the northern boundary of the area, in the Bovey Basin and adjacent to the coast where appropriate, improving water infiltration and quality, and supporting associated species.
- Supporting and reintroducing sustainable, traditional woodland management techniques, such as selective felling and coppicing, particularly on steeper valley and ria sides in areas where soil erosion is not a risk, providing a sustainable source of woodfuel and biomass.
- Re-planting or planting woodlands on former woodland sites or adjacent to existing semi-natural ancient woodland sites where this results in enhanced ecological connectivity and function.

SEO 3: Protect and manage the nationally recognised and distinctive character of the landscape, the natural beauty, scenic quality, archaeological resources and historic features, such as maritime military sites, geological features and mining heritage. Enhance recreational resources, access to nature and heritage assets, particularly along the coast, to ensure public benefit and enjoyment.

For example, by:

- Restoring, enhancing and creating landscape features, informed by the special qualities of the South Devon AONB and Tamar Valley AONB.
- Maintaining open views, tranquillity, a sense of 'wildness' and connection to the maritime environment by sensitive, responsive planning of future land use and off-shore developments, such as off-shore wind farms.
- Ensuring the character and network of existing sunken lanes remains intact and promote their use for non-motorised transport and quiet recreation.
- Maintenance and enhancement of the distinctive settlement pattern and vernacular building by encouraging design that draws on historic precedent and uses traditional building materials such as cob, stone, thatch, and slate.
- Managing and interpreting of mining sites and features of the Tamar Valley in support of the Cornwall and West Devon Mining World Heritage Site objectives, and maintaining and enhancing ponds and lakes created by ball-clay extraction in the Bovey Basin.
- Encouraging practices that conserve, restore and manage historic parklands and ancient traditional orchards, introducing new trees and reinstating traditional management techniques.
- Sympathetically managing standing ancient and veteran trees for biodiversity and heritage value, enhancing landscape character and a strong sense of place and history.
- Managing the integrity of important earthworks and remains, for example iron-age hillforts at Slapton and Blackdown Rings, by extensive grazing and scrub removal where current land cover and use threatens them.
- Improving access along, and connecting with, the South West Coast Path National Trail, promoted routes throughout the rights of way network.
- Improving the number, quality and accessibility of greenspaces and recreation opportunities near to where people live and stay.
- Promoting enjoyment, awareness and understanding of the NCA, particularly less well-known sites and features to relieve pressure on busier destinations in order to maintain existing levels of tranquillity, remoteness and landscape character.
- Recognising, managing and promoting military sites around the naval dockyard at Plymouth dating from the medieval period to the Cold War, of international importance for their range and survival and contributing to a strong sense of history and identity.

Additional opportunities

1: Use and enhance the existing strong landscape framework that forms the context to the major settlements of Plymouth, Torbay and Newton Abbot in planning high quality growth within a green infrastructure network delivering multiple benefits.

For example, by:

- Creating new accessible, natural greenspace and links to help integrate new areas of development around Torbay, Plymouth and Newton Abbot, providing a range of natural and cultural benefits through the implementation of the Plymouth area, and Torbay Green Infrastructure Delivery Plans.
- Significantly extending woodland north of Plymouth and replanting areas affected by phytophthora, helping to contain and integrate built development in close proximity to Dartmoor National Park.
- Using the traditional character of the nationally recognised natural beauty of the South Devon AONB and Tamar Valley AONB as a foundation for new development.
- Promoting the use of sustainable and locally sourced materials and the integration of renewable energy technologies as part of new low-carbon developments.
- Ensuring contact and access to nature and open spaces providing local opportunities for education, play, exercise and quiet enjoyment.
- Supporting sustainable transport connections to major existing visitor attractions, notably around Torbay (the 'English Riviera') and Plymouth (Saltram House) as well as along the distinctive rias and salmon and trout fishing rivers.
- Developing and improving the network of public rights of way and promoting open access land that provides more opportunities for informal recreation, access to nature and public enjoyment.

2: Maintaining the existing landscape character framework.

For example, by:

- Maintaining and enhancing the distinctive pattern of settlement and vernacular building by encouraging design that draws on historic precedent and uses traditional building materials such as cob, stone, thatch, and slate.
- Ensuring the character and network of existing sunken lanes remains intact and promote their use for non-motorised transport and quiet recreation.
- Sensitively planning future land use to help maintain open views, tranquillity, a sense of 'wildness' and connection to the maritime environment.
- Identifying suitable and sustainable locations for new development including recreation and tourism sites.

Supporting document 1: Key facts and data

Total area: 121,079 ha

1. Landscape and nature conservation designations

The South Devon NCA contains the following landscape designations: Dartmoor National Park 7,288 ha, South Devon Area of Outstanding National Beauty (AONB) 32,091 ha, Tamar Valley AONB 9,849 ha, and the South Devon Heritage Coast 75 km.

Management plans for the designated landscapes can be found at:

- www.dartmoor-npa.gov.uk/
- www.tamarvalley.org.uk/

Source: Natural England (2011)

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	Percentage of NCA
International	Ramsar	n/a	0	0
European	Special Protection Area (SPA)	Tamar Estuaries Complex SPA	112	<1
	Special Area of Conservation (SAC)	Plymouth Sound and Estuaries SAC; South Devon Shore Dock SAC; South Hams SAC; South Dartmoor Woods SAC; Blackstone Point SAC.	756	<1
National	National Nature Reserve (NNR)	Slapton Ley NNR, Berry Head NNR	248	<1
National	Site of Special Scientific Interest (SSSI)	A total of 66 sites wholly or partly within the NCA	2,135	<1

Source: Natural England (2011)

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

There are 387 Local sites in the South Devon NCA covering 7,563 ha which is 6 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 – select 'Designations/Land-Based Designations/Statutory'

1.2 Condition of designated sites

SSSI condition category	Area (ha)	Percentage of SSSI in category condition
Unfavourable declining	149	7
Favourable	1,336	63
Unfavourable no change	361	17
Unfavourable recovering	274	13

Source: Natural England (March 2011)

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

2. Landform, geology and soils

2.1 Elevation

Elevation in South Devon ranges from 0.2 m below sea level to a maximum height of 340 m above sea level. The highest ground occurs as the NCA rises to merge with the granite outcrop of Dartmoor. The lowest land is found around the rias.

Source: Natural England (2010)

2.2 Landform and process

Active coastal processes maintain both the dramatic cliff and foreshore exposures as well as active sedimentary features such as the shingle barrier and coastal lagoon at Slapton Ley. Rias formed during glacial periods of lower sea level became flooded as sea level rose during glacial retreat producing rias (drowned river valleys) such as the Dart and Yealm estuaries.

Source: South Devon Countryside Character Area description

2.3 Bedrock geology

The South Devon NCA has a complex and varied geology. Most of the NCA is underlain by deformed Devonian rocks, typically dominated by shales and slates (Middle Devonian 394 – 345 million years ago). There are numerous classic fossil-rich sites. Massive limestone outcrops of Middle Devonian age are found at Plymouth and Torbay. Metamorphic rocks are also found within the NCA (formed 320 – 280 million years ago). A gigantic collision between two continental masses (the Variscan Orogeny) led to conversion of shales to slates and produced the metamorphic complex of rocks associated with the Start Peninsula. New Red Sandstone (c.290 – 210 million years ago) occurs though mainly found in the Devon Redlands NCA, there also distinctive

Permian sandstones in South Devon, representing predominantly water lain deposits of a desert basin. The Bovey Basin formed during the Tertiary period (65-60 million years ago) and associated with the Sticklepath Fault line, subsequently filled with river sediments comprising clays, sand and lignite. Ball clays have been extensively mined. There are raised beaches, for example the Raised Beach at Hopes Nose at 8 m above present sea level, and also rias – river valleys formed during glacial periods of lower sea level, which became flooded as sea level rose during glacial retreat such as the Dart and Yealm estuaries. Caves formed during the glacial/interglacial climate of the Pleistocene epoch (around 2 million – 10,000 years ago).

Source: South Devon Countryside Character Area description, South Devon Natural Area Profile

2.4 Superficial deposits

Shingle bars and beaches are distinctive coastal features in the NCA, In Start Bay shingles of flints, granites, slates and quartzites are constantly recycled. Slapton Ley is considered to have developed as a consequence of a shingle bar forming across the mouth of the River Gara eventually damming the estuary.

Source: South Devon Countryside Character Area description

2.5 Designated geological sites

Tier	Designation	Number
National	Geological Site of Special Scientific Interest (SSSI)	26
National	Mixed Interest SSSIs	10
Local	Local Geological Sites	82

Source: Natural England (2011)

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

2.6 Soils and Agricultural Land Classification

The soils of South Devon are mainly loamy – reflected in traditional mixed farming of arable, dairying, sheep and beef production

Source: South Devon Countryside Character Area description

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

Agricultural Land Classification	Area (ha)	Percentage of NCA
Grade 1	0	0
Grade 2	10,855	9
Grade 3	76,060	62
Grade 4	18,171	15
Grade 5	1, 120	1
Non-agricultural	2,772	2
Urban	11,486	9

Source: Natural England (2010)

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

3. Key waterbodies and catchments

3.1 Major rivers/canals

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

Name	Length in NCA (km)
River Tamar	29
River Avon	21
River Tavy	19
River Plym	13
River Teign	12
River Dart	11
River Yealm	10
River Erme	9
River Bovey	7
River Walkham	7
River Lyd	4
River Meavy	2
River Inny	<1

Source: Natural England (2010)

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

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 2,881 ha, 2 per cent of NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

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

4. Trees and woodlands

4.1 Total woodland cover

The area contains 12,374 ha (10 per cent of NCA), including 3,446 ha (3 per cent of NCA) of ancient woodland.

Source: Natural England (2010)

4.2 Distribution and size of woodland and trees in the landscape

There are important ancient woodland sites on valley and ria sides and substantial areas of ancient woodland are concentrated in the Dart and Erme valleys. Generally oak or ash dominate, while alder and hazel occur in damper areas. Sweet chestnut, beech and sycamore are also common.

Source: South Devon Countryside Character Area description, South Devon Natural Area Profile

4.3 Woodland types

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

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

Woodland type	Area (ha)	Percentage of NCA
Broadleaved	8,894	7
Coniferous	2,223	2
Mixed	623	<1
Other	634	<1

Source: Forestry Commission 2012

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

Woodland type	Area (ha)	Percentage of NCA
Ancient semi-natural woodland	1,474	1
Planted ancient woodland sites (PAWS)	1,972	2

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Wildflower rich, often treeless Devon banks, separating fields of irregular shape.

Source: South Devon Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

South Devon is a patchwork landscape, with larger fields on high flatter land and a more intact, smaller field pattern on the valley sides. Historically, farmsteads had access to 'infield' areas ploughed into strip fields and 'outfield' areas located in large fields or enclosures subject to intermittent cultivation and sometimes retaining strip fields. Enclosure characteristically retained curved shapes of medieval strips on at least one of longer sides – these are generally concentrated on valley sides close to settlements. Some medieval fields on grange farms or high status barton farms, retained more square forms with generally irregular boundaries, occasionally with post-medieval subdivision within. The larger fields on the higher flatter land and high coastal plateau, is the result of both boundary loss and enclosure of late 18/19th centuries.

Source: South Devon 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 areas mixed farming character is supported by figures on farm type: there are 520 grazing livestock farms, 188 mixed farms, 192 cereals and general cropping farms and 73 horticultural units. Farms classified as 'other (likely to be small holdings) total 425, which accounts for 26 per cent of total agricultural holdings. There has been a notable drop in dairy units in the NCA, which fell from 251 dairy units (in 2000) to 134 holdings (in 2009), a drop of 46 per cent.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

Out of a total of 1,621 units (covering 84,628 ha of land), units of more than 100 hectares account for 257 of all holdings (47,744 ha), units of 5 hectares or less account for 240 (359 ha) of all holdings.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

From 2000 to 2009 the total farmed area increased slightly from 82,628 to 84,628 ha, while the number of holders decreased from 2,475 to 2151.

- 2009: Total farm area = 84,628 ha; owned land = 52,762 ha
- 2000: Total farm area = 82,646 ha; owned land = 58,866 ha

Nearly 63 per cent of the agricultural land (17,292 ha) is farmed by the owner.

Source: Agricultural Census, Defra (2010)

6.4 Land use

There has been a decrease in livestock numbers (cattle/sheep/pigs) during the years 2000 to 2009 (from 378,493 to 279,424) while there was an increase in the area of arable crops, though the area of oilseed rape decreased.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

There are 93,500 cattle in the NCA (2009 figures), which represents a dip in numbers from the 105,666 in 2000. The number of sheep has dropped by 30 per cent from 257,900 in 2000 to 177,900 in 2009. There has also been a drop in pig numbers in the area from 15,000 to 8,080.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

Part-time workers and salaried farm managers have increased in number while full-time worker numbers have decreased.

Source: Agricultural Census, Defra (2010)

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

7. Key habitats and species

7.1 Habitat distribution/coverage

Estuarine habitats around the Dart, Salcombe-Kingsbridge, Avon, Erme, Yealm, Plym and Tamar-Tavy estuaries include areas of estuary mudflats, sandflats and saltmarsh communities. Characteristic species include peppery furrow-shell, telin and lugworm.

The estuaries support very large numbers of passage and over-wintering birds including teal, widgeon, shelduck, curlew and dunlin. Eelgrass communities can be found in the sub-littoral and littoral zones. Saltmarsh is generally limited to small areas in the upper reaches and at the head of tributary creeks in most estuaries in the NCA. Plant communities include cordgrass, common saltmarsh-grass, red fescue, sea aster, sea plantain and sea purslane.

Caves and mines in the Devonian limestone support important bat populations including (together) the largest population of greater horseshoe bats in Britain. Freshwater marsh and coastal freshwater lakes include Slapton Ley and South Milton Ley. Slapton Ley's open water areas are eutrophic and support a representative aquatic flora including white water-lily.

The margins of open water and the extensive rich fen areas are dominated by common reed, with lesser reedmace, hemlock water dropwort, yellow iris, great willow-herb and reed sweet-grass found more locally. Slapton Ley is important for its abundance and diversity of aquatic invertebrate fauna.

Lowland heath is found primarily in Bovey Basin and along stretches of the coast in mosaic with maritime grassland and also on mining spoil in the Tamar Valley. Species-rich grasslands include calcareous grassland on Devonian limestone substrates found at Plymouth, Torbay, Kerswell Down, Orley Common and Whilborough Common. Ancient woodlands down valley and ria slopes support a number of uncommon plant species such as hay-scented fern and bird's nest orchid. Sea cliffs and cliff tops have varied geology, diversity of habitats and an abundant wealth of associated wildlife – including cliff-breeding birds.

Source: South Devon Natural Area Profile

7.2 Priority habitats

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

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

Priority habitat	Area (ha)	Percentage of NCA
Broad-leaved & Yew Woodland (Broad Habitat)	6,544	5
Maritime Cliff & Slope	2,047	2
Floodplain grazing marsh	574	<1
Lowland Calcareous Grassland	18	<1
Lowland Dry Acid Grassland	260	<1
Lowland Meadows	364	<1
Purple Moor Grass & Rush Pasture	21	<1
Upland Calcareous Grassland	1	<1
Upland Heathland	152	<1
Coastal Vegetated Shingle	48	<1
Lowland Heathland	247	<1
Mudflats	36	<1
Reedbeds	278	<1

Source: Natural England (2011)

Maps showing locations of priority habitats are available at: http://magic.defra.gov.uk – Select 'Habitats and Species/Habitats'

7.3 Key species and assemblages of species

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

- Maps showing locations of S41 species are available at: http://data.nbn.org.uk/

8. Settlement and development patterns

8.1 Settlement pattern

There is predominantly dispersed settlement pattern with high concentration of scattered farmsteads and hamlets, including a high proportion of medieval or earlier origin. This ancient pattern of settlement is intermixed with a large amount of nucleated settlements, evident by late 11th century but also developing in the 12th and 13th centuries. Settlements are typically located on folds of sheltered valleys, hidden at the head of a creek, or alongside the water at a crossing point or port. Larger settlements are mainly agricultural market towns, but others developed through associations with a local industry such as fishing, mining or quarrying. Ports which benefited from cloth trade are characteristic – for example, Kingsbridge, Totnes at the head of rias, and Dartmouth, Plympton, Salcombe and Newton Ferrerson estuaries. Fishing ports were absorbed from the early 19th century into Torbay conurbation. Plymouth developed from the medieval period into the region's major port and remains an important naval base. Estuary towns are now popular for tourism activities with Torbay a major holiday destination.

Source: South Devon Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main settlements

Plymouth is the only city on the NCA and is the largest centre of population. Torquay, Paignton and Brixham, collectively known as the English Rivera, are not far behind especially in the summer months when populations swell due to the influx of tourists to the area. The total estimated population for this NCA (derived from ONS 2001 census data) is: 542,969.

Source: South Devon Countryside Character Area description; Countryside Quality Counts (2003)

8.3 Local vernacular and building materials

Traditional buildings are built in local Devonian sandstone, shale and slate, the latter being used for slate hanging on walls. There are some with thatched roofs and some cob, and timber frame in town houses of the 17th century and earlier.

Source: South Devon Countryside Character Area description; Countryside Quality Counts (2003)

9. Key historic sites and features

9.1 Origin of historic features

There is extensive evidence for prehistoric activity and settlement; occupation of coastal caves in the Palaeolithic era, to coastal and inland hillforts of the Iron Age. A rich variety of churches especially of the 14th and 15th-century age were built from the wealth of the cloth trade. The wool and cloth towns of Ashburton and Buckfastleigh is where 18th and 19th-century shuttered wool lofts survive. There are frequent manor houses, especially in the Tamar and Tavy valleys, some surrounded by small parks. The World Heritage Landscape in Tamar and Tavy valleys is a mining landscape.

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

9.2 Designated historic assets

This NCA contains the following numbers of designated heritage assets:

- 22 Registered Parks and Gardens covering 1,337 ha.
- 0 Registered Battlefield/s covering 0 ha.
- 204 Scheduled Monuments.
- 5,680 Listed Buildings.

Source: Natural England (2010)

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

10. Recreation and access

10.1 Public access

- 4 per cent of the NCA 5,337 ha is classified as being publically accessible.
- There are 997 km of Public Rights of Way at a density of 0.8 km per km2.
- There is 1 National Trail (South West Coast Path) covering 139 km within NCA.

Sources: Natural England (2010)

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

Access designation	Area (ha)	Percentage of NCA
National Trust (Accessible all year)	836	<1
Common Land	1,899	2
Country Parks	124	<1
CROW Access Land (Section 4 and 16)	3,135	3
CROW Section 15	1,799	1
Village Greens	24	<1
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	577	<1
Local Nature Reserves (LNR)	427	<1
Millennium Greens	1	<1
Accessible National Nature Reserves (NNR)	247	<1
Agri-environment Scheme Access	103	<1
Woods for People	1,774	2

Sources: Natural England (2011)

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

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) tranquillity is high in certain areas, for example the tidal creeks with their steepwooded sides. There are large areas of rural, unsettled inland landscape and coast which remain relatively undisturbed and tranquil. In contrast, the urban areas, particularly in the vicinity of Plymouth, have low levels of tranquillity and tourism centres also temporarily lose their sense of tranquillity in the tourist seasons.

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

Tranquillity	Score
Highest value within NCA	49
Lowest value within NCA	-86
Mean value within NCA	-4

Sources: CPRE (2006)

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

11.2 Intrusion

The 2007 Intrusion Map (CPRE) shows the extent to which rural landscapes are 'intruded on' from urban development, noise (primarily traffic noise), and other sources of visual and auditory intrusion. This shows that approximately 50 per cent of the area is considered to remain 'undisturbed' provided by large areas of rural, unsettled inland landscape and coast. However, the 10 per cent of the area defined as urban, particularly in the vicinity of Plymouth, is considered disturbed. Light pollution issues from these areas can encroach into rural areas. A breakdown of intrusion values for this NCA are detailed in the table below.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	17	34	42	17
Undisturbed	74	57	49	25
Urban	7	7	n/a	n/a

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are the significant increase in disturbance since the 1960s.

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

12. Data sources

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

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

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- The woodland character of the area has been maintained. The modest increase in the uptake of Woodland Grant Schemes covering established woodlands (36 per cent of which is ancient woodland) and new plantings supports this. However, the trend also reflects the inaccessible nature of much of the woodland in the area, located in deep coastal valleys and rias. There is a continued, general absence of hedgerow and in-field trees across the inland plateau.

Boundary features

- In some areas there has been a move toward large fields and gateways, and fenced paddocks inconsistent with the historic character of the area. A gradual loss of hedgebanks, often through neglect of management has further departed from the historic character of the area. Hedgerow trees are also being lost due to erosion of banks and excessive flailing of hedges. The introduction of Environmental Stewardship (ES) in 2005 led to a significant increase in positive environmental management of boundary features. In March 2011, 1,478 km of hedgerows, 155 km of earthbanks and 75 km of stone-faced earthbanks were managed by land managers under ES.

Agriculture

- Between 1998 and 2003 total grassland areas returning to 1990 levels and the uptake of agri-environment schemes consistently above the national average.

Recent agricultural statistics from 2000 to 2009 show a decrease in livestock numbers, including a significant reduction in the numbers of sheep (a reduction in the region of 80,000 animals) and an abandonment or under-grazing of marginal agricultural land. At the same time the area of land under arable cultivation has remained generally constant.

Settlement and development

- There is evidence of expansion into the peri-urban zones around Torbay, Newton Abbot, Plymouth and Tavistock. There is also scattered new development in open countryside and within and on the edge of smaller settlements especially on the eastern side of the NCA.

- A number of larger agricultural buildings including cattle and grain storage facilities, have been erected across the more open plateau landscape and can be visually prominent.

Semi-natural habitat

- Change in agricultural practices has meant a decline in the mixed farming systems in the area. This has had an impact on a number of extensively managed habitats and dependent species, particularly grassland sites. Recent agri-environment schemes have aimed to redress this trend.

- Semi-natural habitats, such as coastal calcareous grassland and lowland heath, remain under pressure. Coastal sites can be 'squeezed' by increasing pressure for productive agricultural land, development and coastal erosion. Lowland heath may suffer from lack of management and scrub encroachment, and pressure from commercial agriculture.

- Although the total area of Sites of Special Scientific Interest is small, they are mostly in favourable condition or recovering. Some maritime cliffs and slopes may be more susceptible to negative change as a result of rapid erosion of softer head deposits, inland coastal 'squeeze' or scrub encroachment.

Historic features

- Many small traditional farm buildings, particularly field barns which are characteristic of the area, have been either falling into neglect or have been converted. In some areas changes in agricultural practice have increased the risk of loss of field patterns and buried archaeology.

- Many coastal heritage features and assets will be lost to natural erosive processes. It is important that they are identified and recorded before such loses occur.

Coast and rivers

- Though the quality of the water courses in the NCA appears to have been maintained, the need to protect rivers and streams from diffuse pollution and soil erosion has been recognised. There is some evidence that other pressures, such as development, are changing the character of the coastal areas.

Drivers of change

Climate change

- Potential sea-level rise may place the area's internationally important estuarine habitats, including the Plymouth Sound and Estuaries Special Area of Conservation, under pressure and threat, squeezing intertidal habitats particularly where development impairs landward migration of habitats, and if suitable adaptation strategies are not developed.

- Important wetland habitats in river valleys including marshy grasslands and mire, may suffer from increasing drought conditions and an increased demand for irrigation, lowering groundwater levels.

- Increased storminess, prolonged periods of drought and an increased prevalence of pests and diseases may all have an impact upon the area's characteristic valley oak woodlands, parklands and distinctive remnant orchards particularly combined with sudden oak death disease.

- As is common across the south coast, the area will be more susceptible to colonisation by migratory species currently not native to England, and particularly flying invertebrates. Northward migration in response to a changing climate may be first recorded throughout this and other coastal areas.

- Conversely, warmer winters could promote increased tree growth, as well as the suitability of new non-native species such as Corsican pine and Holm oak, further affecting woodland composition. Other non-native plants such as montbretia and pampas grass are becoming better established and more prominent across the area.

Other key drivers

- The reduction in dairy cattle and livestock numbers generally, reflects a recent national trend, and may have implications for maintaining levels of pasture. Changes in climate resulting in hotter, drier conditions may require a dramatic and dynamic response in agricultural practice, and consideration given to non-traditional cropping such as grapes and olives, and more stress resistant varieties of existing crops. Equally, land of marginal agricultural viability may need to be cultivated to meet increased demands for food, particularly locally sourced 'low-mileage' produce.

- Increased demand for sources of secure, renewable energy may result in proposals for wind energy developments, utilising resources found across the exposed plateau of the area.

- Increased demand for new housing and development may place pressure on sensitive areas and sites on the fringes of urban areas. Opportunities for enhancement of natural assets and services may also result from responsive and well-informed developments. Plymouth and Torbay are significant growth areas. In Torbay much of the growth is planned to be within the existing settlement, with some likely to be on 'greenfield' sites outside the urban area. Substantial levels of growth are planned within the urban area of Plymouth, as well as urban extensions to the east of the city, together with a new community at Sherford. There are also plans for new infrastructure projects, including energy and transport schemes.

- The Plymouth Green Infrastructure (GI) Delivery Plan is a proactive response to Plymouth's growth agenda, and will deliver a sustainable GI Network. It plans to provide a coordinated, cross boundary approach to creating, managing and enhancing the natural assets of Plymouth and the rural hinterland. A Torbay Green Infrastructure Delivery Plan was produced in April 2011 and will provide supporting evidence for the Torbay Core Strategy and help deliver the strategic objectives which aim to help regenerate Torbay and achieve economic prosperity, while ensuring growth is accompanied by a sustainable natural environment.

[4] http://www.plymouth.gov.uk/gi_delivery_plan_part1.pdf
[5] http://www.torbaygreeninfrastructure.org.uk/

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.

A prized South Devon Bull.

Statement of Environmental Opportunity	Ecosystem service: Food provision	Timber provision	Water availability	Genetic diversity	Biomass energy	Regulating climate	Regulating water quality	Regulating soil quality	Regulating water flow	Regulating soil erosion	Pollination	Pest regulation	Regulating coastal erosion	Recreational opportunity	Sense of place/inspiration	Biodiversity	Geodiversity	Tranquillity	Sense of history
SEO 1: Protect and manage the coastal and estuarine landscape with its diversity of cliffs, geology, geomorphology, historic features, habitats and associated wildlife, contributing to the livelihoods, enjoyment and education of people.	O	O	O	O	O	↗ *	↗ *	↗ *	↗ *	↗ *	↑ *	↗ *	↑ **	↗ *	↑ **	↑ ***	↑ **	↗ *	↑ ***
SEO 2: Protect and extend the mosaic of semi-natural habitats within a mixed-farm, productive and versatile landscape of high scenic quality, rich in biodiversity. Increase the connectivity of habitats by expanding and enhancing the network of traditional, floristically diverse hedgebanks and river valley woodlands.	↗ *	O	↗ *	O	↗ *	↗ *	↗ *	↗ *	O	↗ **	↑ **	↗ *	n/a	↗ **	↗ **	↑ ***	O	↗ *	O
SEO 3: Protect and manage the nationally recognised and distinctive character of the landscape, the natural beauty, scenic quality, archaeological resources and historic features, such as maritime military sites, geological features and mining heritage. Enhance recreational resources, access to nature and heritage assets, particularly along the coast, to ensure public benefit and enjoyment.	O	O	O	O	O	O	O	O	O	O	O	O	n/a	↑ ***	↑ *	↗ *	↑ *	↗ *	↑ ***

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

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

Landscape attributes

Landscape attribute	Justification for selection
A distinct coastal plateau of smooth rounded hills, dissected by steep valleys running towards a dramatic and complex coastline of cliffs, tidal waters, rias and mudflats; the southern 'shoulder' of Dartmoor.	■ The inaccessible nature of much of the NCA, caused by the steep valleys making east west travel difficult, gives the area a remote and tranquil character that is much valued. ■ The contrast between the smooth rounded hills of the coastal plateau with long views to the coast or the backdrop of Dartmoor and the enclosed nature of the steep wooded valleys give the essential character of the NCA. ■ The variety and complexity of coastal features and the dynamic nature of the coast provide experiential, historic and natural interest reflected in the Heritage Coast designation ■ The special and outstanding qualities of part of the area are expressed in the designation of the South Devon AONB.
Diverse coastal landscape exhibiting outstanding geology and geomorphology with cliffs and estuarine features including saltmarsh, freshwater marsh and lakes, mudflats and sandflats; a rich collection of habitats containing correspondingly diverse plant and animal communities.	■ Nearly all the coast is defined as Heritage Coast. The cliffs provide extensive exposures of deformed Devonian rocks in an area where the Devonian system was first defined, and retains its value for research and study. A number of coastal caves show evidence of occupation in the Palaeolithic era. ■ The sea cliffs and cliff tops show varied geology and support a diverse range of habitats, with a wealth of associated wildlife, including cliff breeding birds and coastal grassland communities. ■ Slapton Ley shingle bank and freshwater lake supports an abundant and diverse aquatic invertebrate fauna. ■ Tamar Estuaries Complex Special Protection Area (SPA). ■ Plymouth Sound and Estuaries, and South Devon Shore Dock Special Areas of Conservation (SAC). ■ The estuaries support bass nursery areas, shellfish and very large numbers of passage and overwintering birds.

Landscape attribute	Justification for selection
Steep wooded river valleys and rias (drowned valleys) with hidden inlets and creeks opening out on the coast to wider estuaries, supporting many ancient woodland sites dominated by oak and ash, with alder and hazel in the damper valley floors.	■ Nearly 3 per cent of the NCA is defined as ancient woodland with sites predominantly located in inaccessible steep and deep river valleys running towards the coast. ■ In contrast and reinforcing the significance of the wooded valleys, tree cover is sparse on the exposed and productive plateau areas of the NCA. ■ The rivers and valleys, mainly flowing from Dartmoor, cut through the coastal plateau. They support Atlantic salmon and provide feeding grounds for otter, kingfisher and bats. ■ Though the rias have similarities each has its own character, adding to the interest of the area.
A fertile, remote mixed-farm landscape, based on distinctive red soils defined by underlying Devonian sandstones. Field patterns delineated by a close network of species-rich hedgebanks, with larger fields on the plateau and smaller, more irregular fields on the valley sides.	■ This is a mixed farm landscape, partly the result of varied soil types and a favourable climate and aspect, where enclosure and land use are closely linked to versatility and productivity. The pattern of historic agricultural improvement is recognisable in the form and scale of enclosure. Deep-rooted agricultural traditions create a landscape where food and farming are the dominant and defining characteristics. ■ The mosaic of arable and pastoral fields provides for a corresponding wealth of farmland birds. ■ Rich red soils formed from the Devonian sandstones show a striking red colour when ploughed. ■ The hedgebanks, often covered with a profusion of wildflowers such as bluebells and ramsons, give a sense of history and continuity of enclosure that is characteristic of the NCA. ■ Distinctive Devon Red and South Devon cattle still graze significant areas of traditional pasture.

Landscape attribute	Justification for selection
Historic elements of the landscape and settlement, with extensive remains of early field systems and nucleated villages.	■ Some coastal and inland caves with evidence of occupation from the Palaeolithic era. ■ Iron-age remains with coastal and inland hill-top enclosures. ■ The pattern of settlement is distinctive, with nucleated villages sheltered in valley locations still evident. ■ Local building materials that draw on locally occurring 'natural' resources such as cob, thatch and slate, are still evident. ■ A rich variety of churches from the 14th and 15th centuries built from the wealth of the cloth trade, and also the cloth and wool towns of Ashburton and Buckfastleigh on the northern edge of the NCA, near to Dartmoor, where shuttered wool lofts survive. ■ A number of historic parks and gardens occupy naturally advantageous sites with impressive views and benefitting from a favourable climate. Many originate from the wealth generated by the medieval and Tudor wool industries.
Continuous occupation of the landscape and close relationship with the sea evident in settlements, military defences and access along and to the coast, providing opportunities for recreation and tourism offshore, along the coast and inland.	■ Important coastal settlements mark a long and close relationship with the sea, coastal trading and transportation. Many coastal settlements remain vibrant and industrious locations, some with active ports with small fishing fleets. ■ The South West Coast Path National Trail allows continuous access along the coastline. ■ Coastal and maritime leisure and recreation has grown in recent years, the NCA providing a rich variety of attractions and activities that appeal to a wide audience. ■ Public rights of way and open access land provide for quiet contact with the pastoral landscape of the inland elements of the NCA and access to remote and secluded valleys. ■ Strong links to the remaining presence of military and maritime defences, notably around Plymouth Sound and the Dart Estuary.

Landscape attribute	Justification for selection
Sunken, meandering lanes linking small communities with little major transport infrastructure other than the main line railway traversing the south part of the NCA and the A38 connecting Plymouth to the motorway network in the east.	■ Transportation is hampered by the undulating topography and deeply incised valleys leading to a continuing dependence on traditional lanes, resulting in a tranquil and un-hurried landscape. ■ The railway line from Exeter to Plymouth provides views down valleys, passes close to the edge of Dartmoor and through a varied landscape. ■ The A38 is the only trunk road in the NCA, contouring around the south Dartmoor fringe creating a significant corridor of visual intrusion and in some ways accentuating the 'isolation' of the coastal area to the south. Ribbon development has become characteristic along this corridor.
Tamar Valley landscape, designated an AONB in 1995.	■ A granite ridge crosses the area creating a gorge-like landscape, with thickly wooded sides and rocky outcrops. Heat generated by the formation of the granites produced mineral veins of tin, copper, lead and silver. ■ The area has a strong mining and industrial heritage with many mine buildings, quarries, ports and wharves, all part of a World Heritage Site. ■ Some areas of estate woodland and parkland, associated with grand houses, punctuate the landscape. ■ Market gardens and orchards that contain rare examples of local fruit varieties.
A tranquil and remote character, rich and productive, occasionally exposed to the forces of nature along a rugged coast and the lower slopes of Dartmoor.	■ The topography of the area has limited modern development and intrusion from transport infrastructure and large scale commercial development. ■ In places where the undulating topography limits light pollution from nearby major conurbations, dark night skies can be experienced. ■ The landscape is popular with tourists, providing for quiet enjoyment and ready access to the natural environment.

Landscape opportunities

- Preserve the characteristic pattern of farmsteads, hamlets and small settlements, the historic pattern of field enclosure, linked by sunken lanes and flower-rich hedge banks forming a rural mixed-farm landscape.
- Manage rivers, wetlands, intertidal areas, estuaries and rias to maintain and enhance the diversity of the landscape and hydrological processes in the NCA, supporting important plant and invertebrate communities, and over-wintering birds including teal, widgeon, shelduck and curlew.
- Protect coastal cliffs and outstanding geological and geomorphological formations, for example, at Slapton Ley or Start Point, and important nesting sites for cliff-breeding birds.
- Protect the area's archaeological resource and historic features from damage and loss, preserving the connections to cultural heritage present from all eras, for example, the mining activities present in the Tamar Valley supporting the Cornish and West Devon Mining World Heritage Site objectives.
- Maintain levels of tranquillity and the remote nature of the NCA and seek to protect dark night skies, and coastal and inland views.
- Manage the broadleaved woodlands,and particularly ancient woodlands on the steep river valley sides reinstating and supporting traditional management opportunities such as coppicing, and protect and expand important lichen and bryophyte communities.
- Encourage the maintenance of mixed farming practices to retain the diverse mosaic and rich pattern of fields and land use; pastoral, arable, woodland and semi-natural elements and protect and expand the range of species-rich grassland, rare arable 'weed' species and farmland birds such as cirl bunting.
- Positively manage the network of hedgebanks to maintain the historic pattern of enclosure and connectivity of habitats.
- Maintain and manage parklands and traditional orchards to ensure consistent or expanded tree cover, integrity of design and enhanced productivity.
- Manage semi-natural grassland and lowland heath, primarily along the coast and in the Bovey Basin, extending and linking fragmented elements to increase the diversity of landscape character and function.
- Create new landscapes at the fringes of major settlements, including Plymouth, Torbay, Newton Abbot and Sherford, which make the most of existing landscape features and elements and support the diverse landscape character and biodiversity.
- Adapt to a changing coastline with pressure on areas of intertidal habitat, estuaries, marshes and lagoons, eroding cliff lines and shingle bars.
- Plan for the restoration and creation of landscapes and habitats following the extraction of minerals such as ball clay, china clay and metalliferous ores.

Ecosystem Service analysis

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

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

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Food provision	Fertile soils Dairy, meat and fish products, some specialist Arable crops Shell fisheries Bass nurseries Salmon	Approximately 14,500 ha of land is commonly used for cereal production, but the area also supports nearly 100,000 cattle and nearly 200,000 sheep. Livestock numbers have fallen slightly between 2000 and 2009. The number of dairy farms has fallen from 251 in 2000 to 134 in 2009. Grass and un-cropped areas have remained constant at approximately 60,000. Locally significant market gardening, particularly of organic products. Riverford Organics produces 45,000 organic vegetable boxes every week, started and remains in the area. **Continued on next page...**	Regional	Food production from a mixed farming landscape is a key service in this area. The levels and type of food produced reflect the versatility and productivity of the area, the favourable climatic conditions and availability of water. Changes in climate and weather patterns may challenge the traditional outputs from the area, but new opportunities may also arise. Maintaining soil structure and condition will also be necessary to maximise adaptability.	Work with the local farming community to consider how to safeguard food provision while enhancing a range of key ecosystem services regulating soil quality, biodiversity, regulating soil erosion, water quality, regulating water flow.	**Food provision** **Biodiversity** **Regulating soil erosion** **Regulating water quality**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Food provision cont.		14,300 tonnes of fish were landed in Plymouth in 2010, the largest in England, and valued at £13.5 million. 12,800 tonnes were landed at Brixham in 2010, with a value of £22 million, the highest value in England and reflects the large proportion of shell fish landed, more than 50 per cent of the tonnage.	National	The provision of sea food from the estuaries is a significant national service. Changes in climate and weather patterns, particularly the co-incidence of spring high tides and flooding cause real threats to the shell fishing industry. Management of water quality is essential to ensure the provision of this service. Food provision is intrinsically linked to the cultural services of South Devon underpinning a strong sense of place and the range of biodiversity in this area.		
Timber provision	Areas of existing commercial plantation and accessible broadleaved woodland	Provision of timber is currently low. Timber exists in the form of just over 2,223 ha of coniferous plantation across the area, although the majority of woodland is broadleaved at approximately 8,894 ha with nearly 3,500 ha recognised as ancient semi-natural woodland. Commercial timber extraction is not a major feature of the area with much of the woodland resource difficult to access in steep areas.	Local	Opportunities for commercial timber production from conifer plantation are limited within this area and much of the broadleaved woodland is either of high nature conservation value or of limited accessibility. Timber from plantations does not make high returns. Broad-leaved woodland provides some potential for medium-value 'artisan timber' products.	Identify locations where increased woodland planting could help combat soil erosion on steeper slopes and reduce the speed of water run-off without an adverse effect on open habitats beneficial for biodiversity. Identify and realise opportunities for woodland creation that reinforce landscape character, provide access for expanding urban areas and minimise the impact of development on surrounding, tranquil areas.	**Timber provision** **Regulating soil erosion** **Biodiversity** **Regulating water flow** **Sense of place/ inspiration** **Tranquillity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Biomass energy	Woodland Existing short rotation coppice (SRC) Miscanthus plantations	Local The existing woodland cover is 10 per cent, meaning that there is biomass potential from bringing existing woodlands under management and as a by-product of any commercial forestry operations. The potential miscanthus yield appears high throughout the area but the potential SRC yield is low.	Local	Carefully located miscanthus and SRC can provide potential climate regulation benefits without significant impact on other services. SRC can also help improve connectivity between woodland areas helping woodland biodiversity. Inappropriately sited, both can have negative impacts on sense of place and biodiversity. Woodland areas also offer potential biomass but would require additional infrastructure to utilise this. For information on the potential landscape impacts of biomass plantings within the NCA, refer to the tables on the Natural England website .	Identify opportunities for planting of SRC and miscanthus, appropriately sited within the existing pattern of woodland, hedgebanks and semi-natural habitats on the inland plateau, especially within the floodplains of wider valleys while avoiding remnant wetland habitats and small-scale field patterns.	**Biomass energy** **Biodiversity** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Water availability	Rivers Coastal, Atlantic climate	The NCA overlies formations of impermeable rock and there is no significant groundwater resource. All the rivers within the NCA have catchments that spread into adjoining NCAs and are considered diverse in nature, incorporating reservoirs and tributaries. There are large abstractions from these catchments for public water supply and industry and many smaller abstractions, for example, for agriculture, the dominant land use. Five of the catchments in the south-east of the NCA have water available for abstraction, but the majority are over-abstracted or have no water available for additional abstraction. **Continued on next page...**	Local	The South Devon NCA receives significant quantities of potable water from the adjacent Dartmoor NCA, although predominantly via reservoirs outside the area. While some of the smaller catchments have water available for extraction, the majority do not and the area with greatest demand, Plymouth and the west of the area, are over-abstracted. High levels of rainfall and soils with reasonable water-retention properties results in little water being required for irrigation, however, climate change, new crops and cropping patterns may place higher demands on future water resources.	Seek opportunities to maximise the availability of water by reducing the rate that water flows through the area through the reinstatement of natural, meandering drainage patterns and channels and reinstating functional flood meadows adjacent to main water courses. Encourage good environmental management of semi-natural habitats and in particularly unimproved permanent grasslands, increasing the capacity of habitats to retain water.	**Water availability** **Regulating water quality** **Food provision** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Water availability (cont.)		**... continued from previous page.** The NCA has the lower catchments of all the rivers that drain south off Dartmoor and of some rivers that drain south from the adjoining Culm and Cornish Killas NCAs, the Tamar being the most notable. There are eight reservoirs outside the NCA on rivers that run into it, affecting water flows in these downstream catchment areas. The Plym catchment area is over abstracted, due in part to the impact of Burrator Reservoir, outside of the NCA but upstream. Burrator Reservoir has a comprehensive flow release system ensuring there is sufficient water in the river throughout the year [6]. In all catchments licences are being issued, but often on a case by case basis or with a "hands off" approach, limiting abstraction during low flow conditions.		Maintaining adequate river flows and avoiding over-abstraction is also essential for wild salmon, sea and brown trout populations, requiring adequate flows to reach their spawning grounds and are needed to maintain populations of fresh water shrimp. High water tables are also needed to maintain nationally and internationally important water-dependent habitats, such as species-rich maritime, neutral and calcareous grasslands, shingle bars and freshwater marsh.		

[6] Tamar Catchment Abstraction Management Strategy http://publications.environment-agency.gov.uk/pdf/GESW0307BMCH-E-E.pdf

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Climate regulation	Higher-carbon soils Woodland Estuarine habitats Low-input crops/ grassland	The capacity of soils in the area to contribute to climate regulation is low. The soil carbon content of the largely mineral soils is relatively low at 0 to 10 per cent. These mineral soils can be low in organic matter particularly where under continuous cultivation. There are small areas of higher soil carbon levels of 20-50 per cent fringing Dartmoor, as a result of the peaty soils found across much of the upland. Estuarine mud and silt and fringe habitats, particularly reed beds and marsh, have high carbon content. There are 8 estuaries across this NCA and further salt marshes and reed beds along the coast.	Local	The majority of the soils in South Devon offer limited potential to improve climate regulation, therefore woodland is expected to be the most significant contributor to climate regulation in this NCA. Expansion of woodland on suitable sites could help increase carbon sequestration while also offering increases in biodiversity, regulating soil erosion and water availability. Estuarine habitats, particularly mud flats, reed beds and marsh, have high carbon content secured in deposit. While expanding the areas of these habitats may be restricted by topographic and fluvial systems, they should be allowed to develop and expand naturally and remain undisturbed. Reductions of inputs can also play a role (where achievable) and will in turn help improve water quality and aquatic biodiversity services if located correctly.	Increase sequestration of carbon dioxide through increasing woodland area and encouraging sustainable management of woodlands, and the expansion of wetland and estuarine habitats in the river valleys. Encourage sustainable and extensive grazing regimes on permanent pasture, particularly areas of floodplain and coastal grazing marsh, and areas with peaty soils on the fringe of Dartmoor, with a low input of artificial fertiliser, increasing soil carbon levels and the ability to sequester carbon dioxide.	**Climate regulation** **Regulating soil erosion** **Water availability** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating soil erosion	Wooded valleys Uncultivated areas on steep slopes Cross-field hedgerows (in arable)	There is an enhanced risk of soil erosion for most of the soils that characterise this NCA on moderately or steeply sloping land where cultivated or bare soil is exposed, exacerbated where organic matter levels are low after continuous cultivation or where soils are compacted. A significant part of the NCA is identified as a priority catchment for England's Catchment Sensitive Farming Delivery Initiative. All catchments from the Dart in the east to the Yealm in the west, from source to sea are identified. This target area has 3 key issues to address, one of which is the reduction of soil and nutrient run-off.	Local	Efforts to increase vegetation cover on cultivated or bare soil on steep slopes, for example by reverting to grassland or through afforestation, will help to increase the regulation of soil erosion. Where this is not possible hedgerows also provide potential to help impede flows and subsequent erosion, while having a positive impact on landscape character. In addition, taking measures to avoid bare soil conditions and exposed soils on steep slopes will also be beneficial. This can be achieved through avoiding clear felling of woodland in sensitive areas.	Avoid clear felling areas of woodland on steep river valley slopes-, and encourage new woodland planting to impede cross land flows. Encourage change from cultivation on steep slopes to permanent grassland and semi-natural habitats with extensive grazing and low fertiliser inputs. Plant new hedgerows, particularly to replace previously removed hedgerows restoring the historic pattern of the landscape and to impede cross land flows.	**Regulating soil erosion** **Regulating water quality** **Water availability** **Regulating soil quality** **Sense of place/ inspiration**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating soil quality	Unimproved pastures	The freely draining slightly acid loamy soils covering 66 per cent of the area, have potential for increased organic matter content to improve soil structure through management interventions. The freely draining slightly acid but base-rich soils, 16 per cent of the area, have calcareous horizons near the surface that help provide some natural resilience and enhanced workability. Some component soils are at risk from topsoil compaction and poaching or may suffer from the development of an iron pan. Careful management of weak top soils will help to maintain a good soil structure. In the areas of freely draining acid loamy soils over rock, 11 per cent of the area, the soils have a short grazing season and management is difficult due to the steep and often very stony nature of the land. These soils are generally at low risk of poaching but organic top soils can poach when wet.	Local	Improving soil quality through increasing soil organic matter will have potential benefits for regulating soil erosion. It may also help with climate change regulation, though the capacity of these soils to make a significant contribution is limited.	Increase grazing and sward diversity to increase laying down of organic matter. Manage with extensive grazing regimes to reduce stocking densities to reduce or minimise soil compaction and poaching. Promote good management of weak top soils; minimum tillage to maintain good soil structure. Where organic matter is low, increase organic matter inputs to improve soil structure.	**Regulating soil quality** **Regulating soil erosion** **Regulating water quality** **Regulating water flow**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating water quality	Watercourse fencing Wooded valleys Uncultivated areas on steep slopes Cross-field hedgerows (in arable)	A significant part of the South Devon NCA, from the Dart to the Yealm, is identified as a priority catchment for England's Catchment Sensitive Farming Delivery Initiative. The three key issues to address within this priority area include the reduction of run-off of soil and nutrients, the reduction of faecal contamination entering watercourses and limiting pollution pathways on the holding. These issues will all have an impact on the shell fishery industry, bass nursery areas and the wider biodiversity of the area.	Regional	Water quality is particularly important in this NCA due to the relationship between the river catchments and the coastal designated sites. Improvement of water quality through buffering water courses, reducing pollution pathways and run-off of both soil and nutrients could have significant impacts on regulating erosion, biodiversity and soil quality. In addition improvement in the status of bathing water could have a positive impact on recreational use of the waters.	Increase amount of farmland managed under principles established under the Catchment Sensitive Farming initiative. Increase amount of reed beds and wetlands to act as silt traps. Fencing watercourse and introducing cross-field hedge and tree planting, where appropriate will reduce sedimentation and nutrient loading. (See also measures under regulating soil erosion).	**Regulating water quality** **Regulating soil erosion** **Regulating soil quality** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating water flow	Wooded river valleys Vegetated steep slopes Heathland Geodiversity	The area has an annual rainfall of 1,000 mm on the coast. The area south of Dartmoor has wide valleys, rolling farmland, and heaths that hold water flowing down from steeper river courses on Dartmoor. These lower reaches have sandstones and mudstones overlain with alluvial silts and clays as well as terrace deposits from rivers and the sea that are relatively permeable. These features result in flood peaks being reached more slowly than the upper catchments. However, extreme storm events of recent years have resulted in more localised flooding. The main flood risk comes from insufficient channel capacity and problems associated with culverts. This is more prevalent in the west of the NCA where the valleys remain much more enclosed by steep valley sides, for example, above New Bridge near Gunnislake the Tamar flows down an incised valley that naturally limits floodplain storage and confines the flow of floodwater, channelling it downstream to combine with tidal influences to flood Calstock. Climate change is likely to increase flood **Continued on next page...**	Local	Following the principles of the Catchment Flood Management Plan, there is potential to increase the regulation of river flooding, but also to increase biodiversity and water availability through the expansion of wetlands. Similarly efforts to increase the area of woodlands on steep slopes will also aid the regulation of water flow and subsequently soil erosion. Efforts to regulate river flooding are heavily affected by activities in adjacent NCAs particularly Dartmoor and the Culm.	Follow the principles described in the Catchment Flood Management Plans for the area. Reconnect rivers and estuaries to natural floodplains, to utilise natural flood storage and enhance wetland habitats. Change land management practices to reduce flood risk by reducing soil compaction. Expand areas of semi-natural woodland on steep slopes, extend the network of hedgerows to reduce cross land flows. Increase areas of wetland habitats where possible.	**Regulating water flow** **Biodiversity** **Water availability**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating water flow (cont.)		**... continued from previous page.** frequency and depth. The development of a new town at Sherford, and other major building developments also have the potential to increase storm water runoff rates.				
Regulating coastal flooding and erosion	Shingle ridges and bars, and beaches Estuaries and estuarine habitats Cliffs	Slapton Line is the subject of a national demonstration programme in coastal adaptation. The Slapton Line Partnership has worked with local communities to anticipate and prepare for future coastal change. Relative sea level continues to rise and could be as much as 80 cm higher by 2080. With more extreme storm events, this creates particular challenges for some coastal locations including Slapton Sands, Beesands, South Milton Sands and Challaborough.	Regional	Much of the coast of the area is formed from rock cliffs which are slowly eroding. Major settlement along the coast has historically been located at sites that lay protected from the sea by natural formations and are less at risk from coastal flooding, for example Plymouth and Torbay. However, there are parts of the coast that are characterised by low lying lagoons, salt marshes and other less resistant coastal features, for example, at Slapton Sands, Beesands, South Milton Sands and Challaborough. Here there is continued pressure for new infrastructure and other developments, including coast defences around individual properties. **Continued on next page...**	Allow for the formation of natural coastal flood defences in the form of developing sand bars, mud flats, saltmarsh and shingle ridges. The expansion of marginal habitats along rias and estuaries should be allowed and promoted to further contribute to the protection of nearby settlements. Seek opportunities to minimise damage to highly distinctive coastal features and habitats, and encourage the development of natural, 'soft' defences wherever possible.	**Regulating coastal flooding and erosion** **Biodiversity** **Sense of place/ inspiration**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Regulating coastal flooding and erosion (cont.)				**... continued from previous page.** Natural coastal processes form new defences, and where these natural defences are vulnerable, natural processes should be allowed to occur to form new alignments.[7]		
Pollination	Heathland Meadows and other species-rich grassland Hedgebanks	There are small areas of heathland, species-rich grassland and meadows scattered across the area that provide an important nectar source for pollinating insects. The network of flower-rich Devon hedgebanks extending across the area also provides a valuable nectar source.	Local	The contribution of pollination services to food production in this NCA is currently limited. Pollination is required for oil seed rape crops and also supports traditional orchards in the area. An increase in pollination may be required in order to provide greater options for future cropping, and allow for consideration of a greater range of crops given a change in climate. Increases in the number and range of pollinators are also likely to be associated with an increase in biodiversity.	Increase the area of land covered by semi-natural habitats, including woodland, hedgebanks, wetlands and grasslands to increase the diversity and number of flowering plants and increase the area and range of habitat mosaics where different habitats lie in close proximity. Increase the number of characteristic Devon orchards, ensuring they are sited within close proximity to areas of key and specialist food crop production.	**Pollination** **Biodiversity** **Food provision**

[7] The Seascape character area assessment for the South inshore and offshore marine plans can be seen here: http://www.marinemanagement.org.uk/evidence/1037.htm

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Sense of place/ inspiration	Open and expansive inland plateau; undeveloped and farmed Dramatic and varied coast of cliffs, estuaries and rias, woodland and grassland Uninterrupted views Flower-rich hedgebanks	Sense of place is provided by the area's much-dissected plateau of steep wooded valleys separating intricate but smooth rounded hills with a dense network of Devon hedgebanks, defining the field pattern, and settlements linked by sunken winding lanes frequently fringed by woodland. Distinctive rias ('drowned valleys') with SAC-designated estuarine habitats of tidal water, saltmarsh and mudflats and oak-clad slopes falling down to the sheltered water's edge are an essential part of the coastal character. The coast, much of it Heritage Coast, offers spectacular cliffs and sandy beaches with distinctive clumps of Monterey pine. Together these are many of the special qualities that define the South Devon AONB that covers much of this NCA while the Tamar Valley AONB has the additional heritage of extensive traditional orchards, mining and market gardening.	National	The area has a strong and clear sense of identity and place, reflected in part, by more than a third of the area being designated as AONB. The coastal areas and inland plateau are distinctive and composed of coherent patterns of elements and features. Unifying elements such as the rias, coastal cliffs, mixed farming, hedgebanks and winding lanes produce a harmonious yet clearly productive landscape. Much of the area has an 'unspoilt' character, although the major conurbations of Plymouth and Torbay bare influence on the surrounding rural landscape and in places are encroaching significantly. The area continues to be a major tourist destination and inspiration for artists, writers and photographers, drawn by the quality and character of the landscape and coast.	Maintain the historic pattern of species-rich and florally diverse hedgebanks, which define field patterns and line the sunken lanes that link settlements, and provide a sense of enclosure. Maintain historic settlement patterns and vernacular building styles, and encourage the use of traditional building materials, especially the use of cob, thatch and slate, in new buildings. Protect the distinctive rias from inappropriate development and enhance semi-natural woodland on steep valley sides. Protect and enhance the dynamic coastline, with its distinctive estuaries, cliffs and wetlands. Maintain the essentially farmed character of the landscape and the many traditions associated with the area.	**Sense of place/ inspiration** **Biodiversity** **Sense of history** **Tranquillity** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Sense of history	Range of heritage assets reflecting human occupation since the Palaeolithic Maritime and maritime military heritage Historic settlements and vernacular buildings Long-established farming culture and traditions	Sense of history is associated with a wealth of archaeological remains, including the earliest known human remains in the UK, prehistoric field systems, drovers' tracks and ridgeways, burial mounds, earthworks and iron-age hillforts, such as Slapton and Blackdown Rings. Historic coastal features, particularly castles, blockhouses, batteries, pillboxes and slipways mark the area's strong links to military defences particularly around Plymouth Sound and the Dart Estuary. A small proportion of the NCA lies within the Cornwall and West Devon Mining World Heritage Site, reflecting its mining heritage. The historic character of the landscape is further reinforced by a pattern of dispersed farmsteads, hamlets and villages often constructed in characteristic cob, stone, slate and thatch, and larger towns associated with quarrying, the cloth trade, fishing, tourism or defence. Isolated out-barns, open-fronted linhays, ancient orchards, numerous manor houses including Saltram House, a variety of churches and masonry bridges all add historic interest to the landscape.	National	Many heritage assets are fragile and highly susceptible to loss or damage due to direct impacts or inappropriate management. The range of features present in the area allows for concentrated study of past human activity. Emphasis should be placed on the need to continue to protect and interpret the wealth of heritage present. Maritime and coastal heritage assets are at particular risk from erosion and coastal realignment. Assets likely to be lost due to changes in the coastline need timely and accurate recording.	Protect the extensive archaeological remains both exposed and buried remains, including the prehistoric field systems, drovers' tracks and ridgeways. The protection of heritage assets should be ensured at every opportunity. Also, opportunities to enhance the setting, interpretation and legibility of heritage assets should be identified and realised. Historic coastal features, especially those related to the area's strong link to military defences around Plymouth Sound and the Dart Estuary should be protected where possible and access and interpretation enhanced. Continue to positively manage, protect and enhance the mining heritage of the Tamar Valley, including the World Heritage Site. (See also sense of place). The restoration and conversion of vernacular buildings should be sympathetic, use local materials and preserve local distinctiveness.	**Sense of history** **Sense of place/ inspiration** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Tranquillity	Undeveloped, rural inland plateau Undeveloped, intricate and less accessible valleys, rias and estuaries Urban greenspace	Tranquillity is associated with large areas of the rural inland landscape, with just under 50 per cent of the area classed as undisturbed on the CPRE Intrusion Map (a decline of 25 per cent since the 1960s). Less than 10 per cent of the area is urban. The main areas of low tranquillity are around the main towns of Plymouth, Torquay, Paignton, Kingsbridge, Newton Abbot, Ivybridge and Tavistock as well as around smaller towns. There are also low levels of tranquillity along the main roads, such as the A386 and the A38. The intimate pastoral landscape and intricate, spectacular coastline still convey a strong sense of tranquillity.	Regional	Much of the area remains undeveloped, uncluttered and free from recent development, particularly on the inland plateau and less accessible parts of the coast. Seasonally, much of the coast and many of the estuaries become a little less tranquil due to the many tourists and visitors to the area.	Increase areas of tranquillity around urban areas through a network of green spaces and routes. Support sustainable transport options to visitor destinations.	**Tranquillity** **Sense of place/ inspiration**
Recreation	South West Coast Path National Trail Public rights of way network Rias, estuaries and rivers	The NCA offers a network of rights of way totalling 1,000 km at a density of 0.8 km per km2 which includes 140 km of the South West Coast Path National Trail, the Erme-Plym Trail, the Avon Estuary Walk, the Dart Valley Trail, Two Moors Way, Tamar Discovery Trail, the Coast to Coast Cycle Trail and part of the National Cycle Network[1]. Open access land covers 2,500 ha or just over 2 per cent of the NCA, in strong contrast to neighbouring Dartmoor. **Continued on next page...**		The coastal strip of this NCA has long been popular with tourists and visitors; both those seeking the benefits of a warm coastal, sheltered climate, and those seeking the quiet solitude of the intimate, secluded rias and estuaries. The inland plateau also attracts visitors seeking a quiet rural landscape to walk, ride and cycle. The area is accessed for recreation by residents of Plymouth and Torbay within the NCA by people from across the south-west and as a holiday destination from across the UK.	Maintain and improve the quality of recreational assets, including the South West Coast Path National Trail and other quiet recreational routes along rivers and coast by supporting opportunities to connect and link with new multi-user routes, urban green spaces extending from built-up areas and sustainable transport schemes, particularly in areas close to where people live, to give more opportunities to more people to access the natural environment.	**Recreation** **Sense of place/ inspiration** **Tranquillity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Recreation (cont.)		**... continued from previous page.** The area is also well known for its fishing rivers (salmon and trout), its coastline, characteristic busy ria harbours for sailing and boat trips and popular sandy beaches, as well as the distinctive tourist hubs of Torbay in the east,Plymouth in the west and the southern South Hams villages and coast. Coast and countryside tourism and recreation are significant contributors to the local economy. South Hams district has pioneered green tourism since the 1990s and has the highest concentration of award-holder businesses in the country		Public rights of way, the rivers, rias and estuaries, beaches and the sea are the main recreational attractions; however, local food and produce, culture and tradition complement and add to the overall experience of the landscape.	Support proposals in the Devon, Plymouth and Torbay Rights of Way Improvement Plans and in the Plymouth area and Torbay Green Infrastructure Delivery Plans. Support Green Tourism initiatives. Water-borne recreation in the rias and estuaries and along the coast can provide close access to natural environment assets, both biodiversity and geodiversity, reducing the need for land-based infrastructure and vehicle movements. Balancing an increasing demand for water-based leisure with any potential resulting disturbance should be given careful consideration.	

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Biodiversity	Internationally and nationally designated sites and habitats	International designations cover less than 2 per cent of the area. The Tamar Estuaries Complex is designated as SPA, and there are five SAC; Plymouth Sound and Estuaries; South Devon Shore Dock; South Hams; South Dartmoor Woods; Blackstone Point. There are two National Nature Reserves; Berry Head and Slapton Ley. National designations currently cover 2 per cent of the NCA. With a further 6 per cent of the area designated as local wildlife sites. At present the majority of the designated resource is in unfavourable condition but recovering. A wide range of important species are found throughout the area. Important assemblages of species are also found, reflecting the coastal climate and range of opportunities. Of particular note is the large population of greater horseshoe bat, the range of farmland birds, including a significant number of cirl bunting. Lowland heath and species rich grassland support a wide range of plant species, and a number of uncommon plants. Hay-scented **Continued on next page...**	National	Across much of the area many habitats occur in coherent and heterogeneous mosaics. Improvement in the condition of designated sites (SSSI) is likely to have a positive impact on biodiversity as well as other services. Improvement in the condition of coastal habitats will also assist in the storage of carbon dioxide. Connectivity of habitats and the current mosaic of habitats are essential to supporting and maintaining the numbers of the more mobile species found in the area (mammals, birds and many invertebrates). Less mobile species (many plants, lichens and mosses, and some invertebrates) will benefit from new and permanent opportunities to extend their current range, particularly in the face of climate change.	Concerted action should be taken to improve the condition of all important sites and habitats. Further action should be taken to increase the area of important habitats where possible, increase the connectivity of sites and habitats, and create more habitats where appropriate and possible.	**Biodiversity** **Sense of place/ inspiration** **Climate regulation** **Pollination**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunity	Principal services offered by opportunities
Biodiversity (cont.)		**... continued from previous page** fern and bird's nest orchid are found in ancient woodland. Cord-grass, common saltmarsh-grass, red fescue, sea aster, sea plantain, sea purslane, are found in and around saltmarsh, and common reed, with lesser reedmace, hemlock water dropwort, yellow iris, great willow-herb, and reed sweet-grass are found in freshwater marsh and coastal freshwater lakes.				
Geodiversity	UNESCO English Riviera Global Geopark Cliffs, caves and geological exposures Coastal geomorphology	The range and variety of geology and geodiversity across the area allows for the study and interpretation of earth sciences up to the earliest occupation of the landscape by man. Devonian limestones and sandstones, granite intrusion, faulting, folding and compressive forces can be observed both in the topography of the area and the coastal and inland exposures (cliffs and quarries). More recent coastal geomorphological features including rias, sand and shingle bars and beaches, are present.	National	Geodiversity sites and features occur across the area with concentrations and particular features of interest along the coast, including hard rock features and coastal processes. Caves, quarries and fluvial geomorphological sites also feature in the rich range of geodiversity present. The underlying geology, particularly the red Devonian sandstones and limestone, granite intrusion and subsequent metalliferous mineral deposits, and ball clay have influenced the agriculture, industry, culture and traditions across the area.	Identify and realise opportunities for enhanced access to and recognition and understanding of the internationally important geodiversity across the area. Maintain natural geomorphological processes, particularly along rivers, estuaries and at the coast that contribute to the regulation of coastal erosion and flooding.	**Geodiversity** **Regulating coastal flooding and erosion** **Food provision** **Biodiversity** **Regulating soil quality** **Sense of place/ inspiration** **Sense of history**

Photo credits
Front cover: View across the Kingsbridge Estuary© South Devon AONB Unit
Pages 3, 11: ©South Devon AONB Unit
Page 4: © Natural England/David Glaves
Pages 5, 9, 33: © Natural England/Clare Pawley
Page 7: © Natural England/Chris Chapman
Page 12: © Natural England/Paul Glendell

NATURAL ENGLAND

Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

Catalogue Code: NE338
ISBN 978-1-78367-146-5

Should an alternative format of this publication be required, please contact our enquiries line for more information: 0845 600 3078 or email enquiries@naturalengland.org.uk

www.naturalengland.org.uk