National Character Area profile:

156. West Penwith

NATURAL ENGLAND

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Introduction

As part of Natural England's responsibilities as set out in the Natural Environment White Paper[1], Biodiversity 2020[2] and the European Landscape Convention[3], we are revising profiles for England's 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

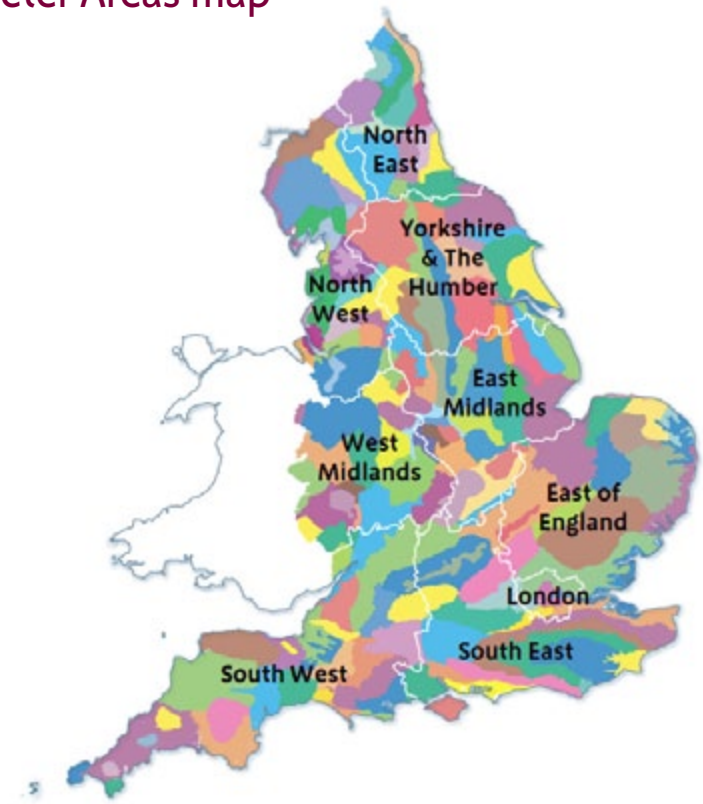
NCA profiles are guidance documents which can help communities to inform theirdecision-making about the places that they live in and care for. The informationthey contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage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

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

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

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

National Character Areas map



[1] The Natural Choice: Securing the Value of Nature, Defra (2011; URL: www.official-documents.gov.uk/document/cm80/8082/8082.pdf)
[2] Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra (2011; URL: www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf)
[3] European Landscape Convention, Council of Europe (2000; URL: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm)

Summary

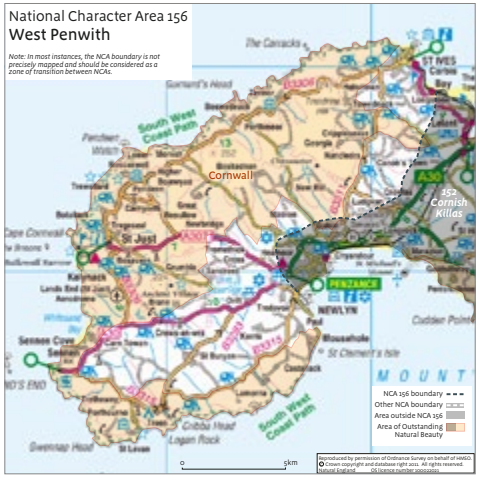
West Penwith is a sparsely populated peninsula, ringed by high cliffs and rising to high, rocky moorland at its centre. Also known as the Land's End Peninsula, it is at the south-west extremity of England, surrounded on three sides by the pounding waters of the Atlantic Ocean and separated from the rest of Cornwall by a low-lying isthmus (land adjacent to the A30 between Hayle and Penzance). The area includes the fishing settlement of St Ives and a number of small villages which originated as fishing or mining settlements, but which are now popular tourist destinations. Access around most of the landscape is by narrow ancient lanes bounded by granite walls.

Cornwall Area of Outstanding Natural Beauty (AONB) accounts for 67 per cent of the area, with 37 per cent focused within the northern coastal area, identified as an Environmentally Sensitive Area. With over 800 ha of nationally and internationally important nature conservation sites, supported by a further 2,000 ha of high-quality UK Biodiversity Action Plan Priority Habitat, the area is a highly valued natural asset.

The entire area is underpinned and influenced by granite geology, the westernmost mainland expression of the Cornubian Batholith formed by igneous intrusions through the surrounding Devonian rocks. The granite defines the nature of the area: the massive columnar cliffs, tors and clitter slopes, the thin soils of high moorland ridge, and the associated mineral veins of tin and copper. It was the exploitation of these minerals in the 18th and 19th centuries that resulted in globally influential technological advancements. Much of the area now makes up a significant portion of the Cornwall and West Devon Mining Landscape World Heritage Site, the world-famous St Just Mining District.

West Penwith contains one of the best preserved and legible records of continuous human occupation of the landscape in Western Europe. The surviving and still functional pattern of bronze-age fields, associated with well-preserved settlement and ritual sites, is of international importance and reflects a cultural heritage common along the Atlantic seaboard. This is displayed in many designated and non-designated historic features, parks and gardens. The area is characterised by scattered small settlements with main centres at St Ives, St Just, Newlyn and nearby Penzance.

The area continues to provide a source of inspiration for artists, writers and photographers as the home to the Newlyn School and the artists' community at St Ives. The area also provides inspiration for the many visitors who come to experience the distinctive landscape and settlement character, and to enjoy the wide range of recreation and access opportunities including the South West Coast Path, high-quality beaches and many water-based activities. Some 64 km of the South West Coast Path run around the edge of the area including the turning point for many on the 1,014 km journey from Minehead to Studland.



Click map to enlarge; click again to reduce.

Statements of Environmental Opportunity

- **SEO 1:** Conserve, manage and increase understanding of the valuable and interlinked geological and cultural heritage assets including the mining legacy, recognised as part of a World Heritage Site, the distinctive granite tors, prehistoric and later settlements and ritual remains, the unique Cornish hedges and field patterns, which combined produce a unique historic and cultural landscape acknowledged as being of international importance.

- **SEO 2:** Manage, restore, link and enhance the area's rich mosaic of rare and endangered wildlife habitats, enhancing and extending their range where appropriate, while encouraging sustainable agricultural practices which contribute to the soil quality, water quality and habitat condition, as well as the local economy.

- **SEO 3:** Conserve the distinctive landscape and settlement character, strong sense of history, high tranquillity levels and long coastal views to the Isles of Scilly and beyond which have led to the area's designation as an Area of Outstanding Natural Beauty (AONB).

- **SEO 4:** Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation opportunities such as the South West Coast Path and high-quality beaches continue to be enjoyed by the local community and visitors, and develop volunteering opportunities for visitors.

Carn Calver Mine with relics of the wheel house in the foreground.

Description

Physical and functional links to other National Character Areas

Located at the tip of Cornwall, and lying directly adjacent to only one other National Character Area (NCA), West Penwith has few but nevertheless important transport and agricultural links to the Cornish Killas NCA. There are wide views seaward and across Cornwall which extend on clear days towards Carnmenellis and the Lizard (NCA) and seaward to the Isles of Scilly.

The A30 is the principal road connection from and to the area. Similarly, the south-west mainline railway terminates at Penzance, just outside the area, but provides a principal transport connection. Services continue into the NCA through the St Ives branch line and also bus services. The main connections to the Isles of Scilly depart from Penzance and the small airport at St Just.

Many of the streams flow directly into the sea, forming narrow, steep-sided valleys to the coast. Some of the rainfall flows from numerous small streams and rivers and is collected in Drift Reservoir, which supplies water for west Cornwall, and particularly Penzance and St Ives. While the Penwith area is a discrete hydrological unit, small amounts of the water from the area flow into and help to support the interests of the Marazion Marsh Special Protection Area (SPA), maintaining important fen and reedbed communities.

Surrounded by the fertile waters of the Atlantic seaboard, the area has many close associations with the maritime environment. These associations are deep-rooted and reflect a common historic and cultural development with other Western European coastal landscapes. The hard nature of the cliffs results in little erosion but equally little absorption of wave energy, meaning that the full force of the Atlantic is often felt in the dune systems within the Cornish Killas NCA.

Rugged, rocky coastline below the hamlet of Rosemergy.

Key characteristics

- An exposed, open and wind-swept granite plateau forms the core of the area with boulder-strewn slopes leading to an intricate matrix of spectacular sea cliffs, coves and coastal valleys.
- Lowland heath, rough species-rich grassland linked by lichen-encrusted granite walls and sycamore-dominated copses provide niches for a wide range of species.
- Intensive horticulture for early vegetables and flowers in the south and east of the area.
- Woodlands are generally limited to the more sheltered valleys with areas of scrub woodland developing on the higher moor areas.
- Impeded drainage and hard rock have given rise to shallow streams and wet heathland. Streams wind through the higher ground and cut down sharply in their lower reaches.
- A rich, internationally important cultural heritage tracing human occupation and activity from prehistory. One of the best surviving functional patterns of field enclosure originating in the Romano-British era or earlier; an ancient pattern of often tiny, irregular fields enclosed by Cornish hedges.
- Dispersed settlement of hamlets and farmsteads with occasional fishing and mining villages and small towns. The mining of tin has taken place in the area over a long period but became industrialised during the 18th century. This is now recognised as internationally important, reflected in the Cornwall and West Devon Mining Landscape World Heritage Site.
- Buildings constructed from local granite with Cornish slate roofs and located in sheltered dips and pockets, and terraces of miners' cottages often overlaying earlier settlement present a simple and austere vernacular.
- The outdoor opportunities presented by beaches, the South West Coast Path and the area's wild character, combined with its artistic influence, make it a significant tourist destination.

Minack Theatre perched on the cliff above Lamorna Cove.

West Penwith today

West Penwith is a granite bastion jutting out into the Atlantic, ringed by sea-swept high cliffs. The coastline is irregular and complex, indented by many small, intimate coves and narrow inlets known locally as 'zawns'. The granite is extremely hard wearing with slow erosion rates. The higher ground is predominantly moorland and rough pasture with a rugged and remote character. It has a simple land use pattern of wind-swept, rock-strewn heaths, ancient field systems and settlements, with frequent remains of a bygone mining industry clearly evident. The settlements have an austere and simple architecture which make good use of the hard local stone and slate. The coast dominates this landscape and provides the background and influence for many of the activities. It has also led to the erection of lighthouses following numerous shipwrecks around the peninsula.

The higher northern section of the plateau is dominated by a north-facing heath-covered ridge sloping down through a farmed coastal plain and a narrow strip of coastal heath to steep cliffs that plunge into the Atlantic. The landscape is criss-crossed by narrow lanes and tracks. The high granite cliffs rise up in great columnar steps and blocks. These are considered to be some of the most magnificent cliffs in Britain. They support nesting and passage seabirds and, in combination with adjacent terrestrial habitats, are important for populations of chough, stonechat, peregrine and raven. The southern half of the plateau presents a softer, more undulating landscape of enclosed pasture and arable fields, and small wooded valleys with narrow, fast-flowing streams running towards a coast of lower cliffs and small coves with white sand, as at Porthcurno.

The high rainfall of the area either flows through a number of short streams via wooded valleys to sheltered coves or high waterfalls, or is collected in Drift Reservoir and then used to supply clean drinking water for the residents and businesses of the area. The area has few hydrological links with the adjoining area although a few streams do flow east to feed the Red River.

Treen Cliff.

The land cover of the central uplands is a mosaic of heather, extensive grassy marshes, wet heaths and gorse scrub. The moorland core of the rest of the peninsula falls away from the highest land to the east and south in gently rolling plateaux and hills cut by the sheltered valleys of small streams. In the valleys

there is a wide variety of scrub, some woodland and enclosed pasture field. Cattle are increasingly a feature of the grazed heathland and coastal slopes, with local hardy breeds being favoured owing to their ability to survive in this damp, exposed environment.

The Atlantic coastal climate and underpinning granite geology dictate land use. High rainfall and hard rock combine to give rise to thin and peaty-topped soils, shallow, fast-flowing streams and wet heathland, forming a mosaic of habitats with dry heathland, rocky outcrops and cliff slopes, particularly in the north of the area. Rough, extensive grazing is predominant in more elevated areas. In sheltered and lower-lying areas more productive pasture and some cultivation is present, notably around St Buryan. While modernisation of farming practices – dairying and horticulture in particular – has resulted in changes to the farmed landscape throughout the area, the land use remains predominately extensive, mixed agriculture.

Across the West Penwith landscape can be found the often prominent marks of more than 4,000 years of human occupation: megalithic tombs (quoits), cairns and standing stones, and ancient field enclosures in the form of massive Cornish hedgebanks. The historical ecologist Oliver Rackham has said that the great stone banks are "the world's oldest artefacts still in use". Bronze-age hut circles, Romano-British enclosed farms, iron-age hill forts and cliff-castles punctuate or dominate the landscape, as do the solid mass and tall chimneys of engine houses marking the heads of mines which pursued rich mineral veins often far below and out to sea. West Penwith has a greater concentration of archaeological and heritage sites than any other comparable area in Western Europe. This is a landscape where nature combines with hard industry, long-standing agricultural practice and ritual, steeped in heritage and cultural associations.

The settlement pattern is one of dispersed hamlets and farmsteads. There is hardly any settlement on the open moorland. Older buildings are almost universally built of granite with slate roofs and some slate-hung walls. The occasional widely spaced, granite-built farms and hamlets in this historic farming landscape are thought to be fairly ancient in origin, many on the site of prehistoric settlements. Modern farm buildings are significant on farmsteads situated on the more sheltered sites and associated with the better land. The farming pattern is overlaid by groups of miners' cottages and small villages, some recent and rather shapeless, others of medieval origin with buildings clustered around the square-towered granite churches. Within the mining areas, Methodist chapels are also prominent. Many of the small coves have developed into small fishing villages such as Penberth, Priests Cove and Portherras Cove, which have historically supported a small number of inshore boats.

Penwith has developed as a significant visitor destination; the towns of Penzance and St Ives are gateways to the area, and Newlyn and the fishing village of Mousehole popular destinations. With growing visitor interest have come opportunities for some diversification; numerous old farm buildings and bothies have been converted for accommodation and local produce is valued. Many of the potential activities that draw people to the area are inextricably linked to its wild, rugged and remote character. Popular recreation assets include one of the more challenging sections of the South West Coast Path National Trail, the popular surfing beaches at Sennen Cove and Porthmeor beach, and the attraction presented by Land's End and Cape Cornwall.

The landscape through time

The granite outcrop that forms the West Penwith peninsula is the most westerly of the series of mainland granite intrusions stretching to Dartmoor 100 miles to the east. These are linked at depth to the Cornubian Batholith. During the Devonian and Carboniferous this area formed part of a marine gulf where sand and mud deposits accumulated. These were intruded by dolerite sills which sometimes reached the sea floor where they formed pillow lavas. This gulf closed during the Carboniferous-Permian 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 greenstones from the sands, muds and dolerites; these are found along the south-eastern edge of the area and along the north-west coast. The Land's End granite was intruded towards the end of this period. The granite forms a high ridge or plateau, the steep columnar cliffs and boulder-strewn moorlands; it is widely used as a building material throughout the area. At the margins of the granite intrusion, the heat generated produced mineral veins of principally tin and copper, with some lead and silver.

In the geologically-recent past, the ice sheets of the Quaternary did not reach as far south as Cornwall, which instead experienced cold, dry, tundra-like conditions. The lower-lying coastal plain formed as a result of marine and weather erosion. Also a product of erosive action, some of the moors are topped with granite tors and strewn with half-buried granite boulders, or clitter. Deposits of granitic sand and gravel moved down slope and collected in gullies between the hills, resulting in a gently rounded topography. These isolated deposits remain today as the superficial geology. The raised beach deposits at Porth Nanven demonstrate changes in sea level, wave energy, sediment supply and climate during the Quaternary.

Gurnard's Head, a narrow headland composed of slates and igneous intrusive rocks, capped by basalt pillow lavas.

The acidic rocks and high rainfall have led to the formation of shallow peaty soils which become deeper and more waterlogged on the higher ground, and often have an iron pan where the rain has washed iron down into the soil. Lower lying soils may have a thinner peaty surface layer, but under agriculture form freely draining acid brown earths over much of the south of the area.

Post ice-age palaeo-environmental records show that vegetation cover was primarily oak (probably sessile) and hazel. Common alder was dominant in

damp valley bottoms. Historic clearances over many centuries for agricultural activity led to the progressive reduction of woodland cover and the development of the current combination of enclosed pasture fields and open rough grazing ground. Woodland remained largely in the sheltered and more difficult-to-work steep-sided stream valleys. Dutch elm disease devastated the formerly well-treed hedgerows of southern and eastern areas. The relatively recent arrival of sycamore with its vigorous seeding habit has changed the species balance of regenerating woodland in the localised absence of remaining native tree seed sources.

The influence of the most ancient settlers, from the Neolithic onwards, remains one of the most striking aspects of the Penwith peninsula. Monuments and signs of habitation and management of the landscape abound. Early occupation is most clearly seen in the well-known Romano-British courtyard house sites of Carn Euny and Chysauster. Hut circles, enclosed farms, courtyard houses and iron-age hill forts all testify to continued and developing occupation and management of the landscape. The patchwork of prehistoric fields to the north of the area along the coastal plateau forms one of the oldest continuously farmed landscapes in the world. They illustrate the deliberate and structured creation of farmland from the wild moorland. The great granite block field boundaries, made from rocks cleared from the land, have retained their original shape and function.

The higher ground has megalithic tombs, or quoits, cairns, stone circles, standing stones and other monuments, which today form a 6,000-year-old ritual landscape. This higher ground reverted to moorland by the 9th century, when churches and settlements were established (sometimes resisted, sometimes on the sites of ancient farmsteads). Christianity has left its mark on the landscape in the form of wayside crosses marking the boundaries of medieval cultivation, rare early Christian memorial stones, holy wells, churches, chapels and numerous place names prefixed with 'St'.

Settlement across the area tends to perpetuate the pattern of dispersed farmsteads and hamlets established before the 9th century. This ancient pattern is intermixed with a small number of 12th- and 13th-century 'churchtowns', with buildings clustered around square-towered granite churches as at Morvah and Zennor. Farming hamlets formed the basic unit of settlement, many of which continued to contract from the 14th to the 19th centuries to form the farmsteads of today. Many of the farmsteads around the moorland retain the ancient dispersed layouts typical of these areas, although much of the architectural character of rural areas results from rebuilding in the late 18th and 19th centuries. This was also associated with the enclosure of formerly extensive rough ground and the establishment of new farmsteads, smallholdings and settlements, and the reorganisation of earlier enclosures with straight boundaries and enlarged fields (especially to the south of the area). Expanding or new settlements were particularly dense in the St Just area, and many were colonised by miners' families out of unimproved moorland. These are associated with Nonconformist, particularly Methodist, chapels, Methodism being exported along with mining technology to other parts of the world. Coastal settlements, rebuilt in the same period with cellars for processing pilchards and other fish, have long nestled around sheltered coves. In the far west, around Mousehole and Sennen Cove, settlement is often marked by the dark silhouettes of conifers such as Monterey pine and Monterey cypress. Introduced from California in the 19th century, they thrive despite the cutting, salt-laden winds, and have become an integral part of the landscape.

For many centuries the extraction of metals contributed significantly to the Cornish economy. Mining of tin, copper and other minerals seems to have taken place at a small scale over a long period; tin was probably being won in the Bronze Age. Most of the present-day remains, and particularly the cliff-top engine houses at the heads of mines as at Levant, Botallack and Geevor, are the result of deep mining and large-scale expansion in the industry that began in the 18th century. The significance of the development of mineral extraction in the area is now recognised through the definition and inscription of the Cornwall and West Devon Mining Landscape World Heritage Site.

The expansion of mining and associated industrial activities also resulted in the growth and extension of earlier settlements, with the addition of terraced miners' cottages and smallholdings on the unimproved moorland abutting towns and villages. Further enclosure of the remaining and adjacent moor during this period is marked by a typically rectilinear, planned field pattern, a marked contrast with the ancient, 'organic' field pattern. The mining economy remained dependent on and combined with versatile and productive agricultural activity.

Cattle rearing was the most significant element of the area's agriculture until the late 18th and 19th centuries, when there was a great increase in stocking levels, corn production and finally dairying, the last becoming more intense since 1950. The arrival of the main rail line from Penzance to London in the 1870s saw a dramatic rise in the production of early vegetables and flowers, exploiting the more productive soils of the southern part of the area and expanding onto cliff-top enclosures to make use of available land. Early season crops retain a high market value and are still distributed throughout the country.

Lanyon Quoit, a dolmen dating from the Neolithic period.

The arrival of the railway also brought a group of pioneering artists who formed the Newlyn School. Focusing on the life and work of local people, the Newlyn School at first drew little from the landscape. But with a splinter group formed in the valley of Lamorna, the dramatic scenic landscape, granite outcrops, coastal scenery, evocative historic features and unique qualities and effects of the light began to influence and define the work of the school. A little later an avant-garde artists' colony developed in St Ives with sculptors and landscape painters taking inspiration from the Penwith area. The landscape has

inspired many artists, writers, poets, film-makers and photographers including Barbara Hepworth, Daphne du Maurier and a one-time resident of Zennor, DH Lawrence, who wrote:

"The most beautiful place, a tiny village nestling under high shaggy moorlands, a big sweep of lovely sea beyond, lovelier than the Mediterranean... all gorse now flickering with flowers, and then it will be heather, and then hundreds of foxgloves. It is the best place I have been in."

In 1959 West Penwith was designated an Area of Outstanding Natural Beauty, one of twelve parts of Cornwall designated for their special scenic beauty and qualities. In 1988, West Penwith benefited from being one of the first six areas in England to be classified as an Environmentally Sensitive Area (ESA), which provided funding to encourage farmers to protect the most important wildlife, heritage and landscape features. The ESA ended in 2012 and has been replaced by Environmental and Countryside Stewardship. In 2006 the area received UNESCO World Heritage Site status as part of the Cornwall and West Devon Mining Landscape World Heritage Site in recognition of its important role in the mining of tin.

Porth Mear to Zennor showing the small fields, the moorland and proximity of the coast.

Ecosystem services

The West Penwith NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the West Penwith NCA is contained in the 'Analysis' section of this document.

Mosaic of small fields enclosed by drystone walls and set within moorland bounded by a rocky coast.

Provisioning services (food, fibre and water supply)

- **Food provision:** Extensive high-quality beef from the upland and moorland area, and production of early vegetables and flowers, mainly distributed nationally, in the south of the area, relatively small dairy herds and farms exist throughout the area. Fishing from the surrounding waters and the Bay of Biscay is landed within the NCA at Newlyn and in smaller communities for local and national suppliers.

- **Water availability:** While the area has high rainfall, a combination of the hard granite and the short streams and rivers means that much flows straight to the sea. Some water is abstracted and this is stored in Drift Reservoir for public water supply and agriculture. Water is a scarce resource in the area and often there is pressure on supply resulting in the need to import water.

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

- **Climate regulation:** The peaty nature of many of the area's topsoils means that they have an important role to play in carbon storage. Preventing disturbance and drainage of these soils will be key to retaining and protecting this carbon store.

- **Regulating soil erosion:** All the soil types within the NCA are susceptible to erosion both from water, wind and inappropriate agricultural techniques. Part of the NCA falls within the West Cornwall Priority Catchment which has identified the problem of soil erosion caused by surface run-off.

- **Regulating water quality:** Recent crop changes and production intensity combined with intensive land management have reduced the capacity to

regulate water quality within the area. While some streams have a 'good' ecological status, a number have 'bad' status owing to pollution from historic mining and from throughflow through the naturally acidic bedrock.

- **Regulating coastal flooding and erosion:** The hard geology in the area leads to a coastline that is resilient to coastal erosion. However, sea level rise will increase flooding risks in small coves, such as Lamorna

Cultural services (inspiration, education and wellbeing)

- **Sense of place/inspiration:** The area has a strong sense of place with high cliffs, intimate coves with sandy beaches, deep zawns and rolling moorland, complemented by the irregular and ancient field patterns and variety of intermixed land uses. The sense of place is enhanced owing to the ever-present influence of the Atlantic Ocean. This rugged environment is a complex and contrasting landscape of natural and cultural assets: stormy, wild winter weather complemented by the squat granite cottages, stark industrial mining structures, intimate villages and hamlets, brooding, boulder-strewn moors and small, enclosed fields. The landscape has been and continues to be the inspiration for many artists, writers, poets and photographers.

- **Sense of history:** The area has a rich cultural heritage stretching back at least 6,000 years, from prehistoric tombs, cairns and standing stones to the prominent beam engines of the recent tin-mining past. It has one of the richest archaeological records in Western Europe and a common cultural heritage with the 'Celtic' Atlantic seaboard from Iberia to the Western Isles and western Scotland. This importance is increased further by the ability to read the prehistoric features as a coherent landscape.

- **Tranquillity:** The remoteness and isolation of the area result in a high level of tranquillity enhanced by a lack of main roads and infrastructure, little development and light pollution, a rugged coastline and dominant sea views. Levels of intrusion around the villages have increased with some development both for housing and in support of the tourist industry over the last 50 years.

- **Recreation:** The area benefits from a dense network of rights of way, many based on historic track ways and supply routes, and open access land, and most notably the South West Coast Path National Trail. The area's beaches also provide many recreation opportunities including sea kayaking, diving and surfing. The area is a popular visitor destination with the 'art villages' of Mousehole and Lamorna and the active fishing port of Newlyn an important draw.

- **Biodiversity:** The area includes one Special Protection Area, ten Sites of Special Scientific Interest (SSSI) covering 800 ha and over 3,000 ha of Biodiversity Action Plan priority habitats made up of lowland heathland (2,000 ha), maritime cliffs and slopes (1,000 ha) and a wide selection of smaller habitats. These areas are all connected by a dense network of sunken lanes and Cornish hedgerows that provide commuting routes for bats, breeding and nesting sites for birds and important nectar sources for insects. In recent years choughs have returned, and successfully breed in the areas around St Just.

- **Geodiversity:** The geological processes that underpin the area have generated much of the area's industrial and now cultural heritage. This is acknowledged in the Cornwall and West Devon Mining Landscape World Heritage Site, and the identification of the St Just Mining District. Despite being almost entirely underlain by granite, a diversity of soils has developed through the interplay of climate, topography, vegetation and human influence, which in turn support the characteristic habitats and land uses across the peninsula.

Statements of Environmental Opportunity

SEO 1 - Conserve, manage and increase understanding of the valuable and interlinked geological and cultural heritage assets including the mining legacy, recognised as part of a World Heritage Site, the distinctive granite tors, prehistoric and later settlements and ritual remains, the unique Cornish hedges and field patterns, which combined produce a unique historic and cultural landscape acknowledged as being of international importance.

For example, by:

- Contributing to the management of the Cornwall and West Devon Mining Landscape World Heritage Site and providing interpretation and public access to the features of outstanding value, without damaging the assets themselves.
- Conserving and enhancing through careful management the historic environment of this area, including its designated and undesignated historic assets, the landscape's potential to reveal the prehistoric and later archaeology of land use and settlement, and the potential to enhance the interpretation of features in recognition of the area's importance as one of the most highly concentrated areas for archaeological artefacts in Western Europe.
- Appropriately managing the impact of the visitor and tourism-based business within the area, while understanding the importance of the cultural heritage to this industry, and its importance for the local economy.
- Ensuring that future development, particularly associated with the settlements, enhances and makes a positive contribution to local communities, for example by using local building stone and techniques of the area such as locally sourced granite and slate.
- Instigating a programme of scrub and secondary woodland removal on important historic features to enhance their settings, especially Scheduled Ancient Monuments and those that enhance the understanding of the World Heritage Site.
- Conserving the Cornish hedges as both wildlife corridors and internationally important cultural landscape features.
- Protecting and increasing understanding of the cultural and biodiversity importance of the ancient field systems and Cornish hedgerows, and how with other forms of connected habitat they reflect the millennia of changes and provide stepping stones for the area's habitats and species.
- Providing interpretation and sustainable access to the geology of the area which underpins all aspects of the landscape and has significantly influenced the human history of the area, especially the important tin-mining industry. Ensuring that geological features and exposures remain accessible and legible to enable the study and understanding of the internationally important geodiversity and exploring how the area's soils might be better interpreted with relation to geology, landscape and land use.

SEO 2: Manage, restore, link and enhance the area's rich mosaic of rare and endangered wildlife habitats, enhancing and extending their range where appropriate, while encouraging sustainable agricultural practices which contribute to the soil quality, water quality and habitat condition, as well as the local economy.

For example, by:

- Conserving the moorland, heathland and rough acid grassland and linking remnant areas of mire, bog and open moorland to strengthen and expand the valuable habitats in the area.
- Expanding the links provided by semi-natural habitats, hedgebanks, walls and valley woodlands to form a connected and resilient network of habitat that can allow species and habitat space to adapt to a changing climate.
- Managing, establishing and sustaining appropriate grazing levels on the central moorland and along coastal heath to maintain the existing balance of open habitats, for example by establishing viable populations of hardy livestock breeds suited to the conditions of the landscape and the requirements of the heathland habitat.
- Encouraging sustainable grazing regimes on permanent pasture and rough land, particularly in areas with peaty soils within moorland habitats to manage the carbon storage capacity of the soils positively.
- Continuing to produce high-quality food and supporting farming at a sustainable level with grazing and cultivation regimes that lead to improved soil quality, reduced soil erosion and benefits to biodiversity.
- Encouraging the use of local products, for example beef and dairy, within suitable businesses, for example pubs, restaurants and tourist markets, and ensuring that links are made to the landscape from which the product is sourced.
- Maintaining the tradition of market gardening and horticultural production in the southern section of the peninsula, increasing sustainability in the processes where possible.
- Seeking to enhance whole catchment water systems, from the moorland ridge to discharge into the sea, improving water quality and securing water availability, while reducing flood risk associated with coastal settlements.
- Seeking opportunities to maximise the availability of water by increasing the retention of the water flows through the area by the reinstatement of natural, meandering drainage patterns and channels, and reinstating wet habitats to intercept and retain increased volumes of water within the landscape to account for less continuous rates of rainfall.
- Introducing, where appropriate, buffer strips across fields to help to reduce soil erosion and migration on slopes and improve water quality.

SEO 3: Conserve the distinctive landscape and settlement character, strong sense of history, high tranquillity levels and long coastal views to the Isles of Scilly and beyond which have led to the area's designation as an Area of Outstanding Natural Beauty (AONB).

For example, by:

- Identifying and realising opportunities to conserve and enhance the outstanding natural and scenic beauty of the area in line with the aims and aspirations of the Cornwall AONB Management Plan.
- Conserving the landscape's local distinctiveness with exposed open moorland, a spectacular coastline, ancient pasture fields, mixed agriculture and historic mining and fishing settlements, ensuring that it remains in good condition and available for public enjoyment
- Conserving the remoteness of the cliff-top habitats and the plunging 'zawns' which contribute to the distinctive feel of the landscape, especially around the north coast and close to Land's End and Cape Cornwall, while ensuring that the geological importance of the area is appropriately interpreted for visitors to enhance their enjoyment.
- Maintaining and enhancing the distinctive settlement pattern of small villages and dispersed and common-edge settlement, and its diverse architectural character, ensuring that future development recognises and retains the value of the area's biodiversity, access and heritage. Ensuring that future development, particularly associated with the settlements, is designed to contribute to character and does not have a negative impact, for example by using local building stone and techniques of the area such as locally sourced granite and slate.

South West Coast Path.

SEO 4: Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation opportunities such as the South West Coast Path and high-quality beaches continue to be enjoyed by the local community and visitors, and develop volunteering opportunities for visitors.

For example, by:

- Sustainably managing the area's visitor and tourist industry to maintain, conserve and interpret the existing high-quality landscape and wildlife assets while ensuring that the local community and economy can continue to enjoy and benefit from this unique and heavily used recreational landscape.
- Promoting access to the natural environment across the area, particularly incorporating sustainable access to the South West Coast Path and continued careful management of the National Trail itself.
- Managing the visitor pressure at Land's End which is a distinctive and widely recognised landmark, and which brings high visitor numbers to the area.
- Conserving the cultural heritage, coastal views and undisturbed character of Cape Cornwall to ensure that public enjoyment continues while also ensuring that visitor pressure does not have a negative impact on the character.
- Maximising the opportunities for visitors and the community that are available through the area's inspiration for artists, writers and photographers who are drawn by the quality and character, drama and intense light of the landscape and coast.
- Ensuring that the sense of tranquillity is maintained by encouraging only appropriate levels of development in appropriate locations, and ensuring that the traditional character of the small fishing settlements and mining villages is retained through use of local building materials and styles.
- Promoting the more traditional 'beach holidays' which remain an important component of the recreational and economic opportunities of the area, while ensuring that local heritage assets and character are not eroded.
- Exploring working with partners and organisations supporting volunteering in the natural environment to provide opportunities for people to increase their knowledge and understanding of biodiversity while benefiting habitats and species.

Additional opportunity

1. Engage and support the land-based industry to enhance the management of important wildlife and landscape areas.

For example, by:

- Establishing viable populations of hardy livestock breeds suited to the conditions of the landscape and the requirements of the heathland habitat. Sympathetically managing soil and water resources to ensure the long-term productivity and economic viability of agriculture, while increasing the ability of agricultural systems to withstand extreme weather and adapt to climate change. Maintaining the tradition of market gardening and horticultural production in the southern section of the peninsula.
- Developing opportunities to increase the area of well-managed native broadleaved woodland by both planting and natural regeneration within the valleys especially in the southern and eastern sections of the National Character Area and locally as appropriate elsewhere, which will provide both biodiversity and economic benefits.
- Raising awareness that many hedgerows locally in the southern and eastern areas were considerably more tree-rich before the impact of Dutch elm disease, and seeking opportunities for hedge tree regeneration including planting of appropriate native or naturalised tree and shrub species with consideration of landscape character restoration, habitat connectivity and potential for biofuel production.

A view from Cape Cornwall towards the Isles of Scilly and Longships lighthouse.

Supporting document 1: Key facts and data

Total area: 20, 201 ha

1. Landscape and nature conservation designations

The Cornwall Area of Outstanding Natural Beauty covers 13,470 ha of the West Penwith NCA, 67 per cent of the total area. The NCA also contains 15,588 ha of Heritage Coast covering, 77 per cent of the NCA. The area also includes part of the Cornwall and West Devon Mining Landscape World Heritage Site.

Source: Natural England (2011)

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

- www.wyevalleyaonb.org.uk

1.1 Designated nature conservation sites

The NCA includes the following statutory nature conservation designations:

Tier	Designation	Name	Area (ha)	Percentage of NCA
International	n/a	n/a	0	0
European	Special Protection Area (SPA)	n/a	0	0
	Special Area of Conservation (SAC)	Lower Bostraze & Leswidden SAC	2	<1
National	National Nature Reserve (NNR)	n/a	0	0
National	Site of Special Scientific Interest (SSSI)	A total of 10 sites wholly or partly within the NCA	811	4

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 45 local sites in West Penwith NCA covering 20,119 ha which is 19 per cent of the NCA.

Source: Natural England (2011)

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

1.2 Condition of designated sites

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

SSSI condition category	Area (ha)	Percentage of SSSI in category condition
Unfavourable declining	15	2
Favourable	750	93
Unfavourable no change	0	0
Unfavourable recovering	45	6

Source: Natural England (March 2011)

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

2. Landform, geology and soils

2.1 Elevation

The highest point within the NCA is 247m (Trendrine Hill) above sea level. The mean elevation is 122 m.

Source:Natural England (2010)

2.2 Landform and process

During the ice ages, Cornwall escaped the ravages of the great ice sheets, and instead had a climate similar to the tundra regions of the world today. Under these extremely cold, permafrost conditions, soil, subsoil and underlying decomposed granite would move slowly down slope and collect in gullies and valleys. This unconsolidated material now forms a mantle over much of the area and consists of angular fragments of local bedrock in a sand-clay matrix. A good example can be seen at Porthmeor, where a stream cuts down through the deposit.

Source: West Penwith Countryside Character Area description, West Penwith Natural Area Profile

2.3 Bedrock geology

Granite lies at the heart of the West Penwith landscape, part of the chain of granite uplands running down the spine of south-west England. It is part of the Cornubian Batholith which was formed by igneous intrusion taking place under intense heat and pressure. The surrounding Devonian rocks consist mainly of slate. Relatively less-resistant overlying rocks have been eroded to expose the granite and periglacial action has shaped the tors and clitter slopes of the higher ground. The rocks at the margins of the granite contain many minerals, some of which are found nowhere else in the world. Veins of tin and copper ores are found in these areas, and many old mine sites can be seen on the coastal plateau.

Source: West Penwith Countryside Character Area description, West Penwith Natural Area Profile, British Geological Survey maps

2.4 Superficial deposits

Superficial deposits within the NCA consist of clays, silts, sands and gravels in valleys.

Source: West Penwith Countryside Character area description, West Penwith Natural Area Profile, British Geological Survey maps

2.5 Designated geological sites

Tier	Designation	Number of Sites
National	Geological Site of Special Scientific Interest (SSSI)	4
National	Mixed interest SSSI	2
Local	Local Geological Sites	10

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 West Penwith lie largely over the parent rocks from which they were formed. In the NCA the soils are predominantly acidic, gritty, loamy soils with variable drainage.

Source:West Penwith Natural Area Profile, Natural England (English Nature)

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	50	<1
Grade 2	213	1
Grade 3	12,771	63
Grade 4	2,491	12
Grade 5	2,733	14
Non-agricultural	1,347	7
Urban	354	1

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)
n/a	n/a

Source: Natural England (2010)

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

There are no main rivers within the NCA, a number of small streams rise on the moors descending to coves and cliff side waterfalls.

3.2 Water quality

The total area of Nitrate Vulnerable Zone is 8,726 ha, 43 per cent of the NCA.

Source: Natural England (2010)

3.3 Water Framework Directive

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

4. Trees and woodlands

4.1 Total Woodland Cover

The NCA contains 776 ha of woodland (4 per cent of the total area), of which 6 ha is ancient woodland.

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

4.2 Distribution and size of woodland and trees in the landscape

Woodland cover in West Penwith is low at 4 per cent, reflecting the exposed nature of the area. The area of new planting is limited and confined to a number of small blocks scattered throughout the eastern half of the NCA.

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

4.3 Woodland types

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

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

Woodland type	Area (ha)	Percentage of NCA
Broadleaved	683	3
Coniferous	12	<1
Mixed	21	<1
Other	60	<1

Source: Forestry Commission (2011)

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

Woodland type	Area (ha)	Percentage of NCA
Ancient semi-natural woodland	1	<1
Ancient re-planted woodland (PAWS)	5	<1

Source: Natural England (2004)

5. Boundary features and patterns

5.1 Boundary features

Great granite block walls made from rocks cleared from the fields which, over the centuries, have retained their original shape and boundaries. Much of the area is open moorland and heath crossed by a maze of lanes, trackways and more recently minor roads. The enclosed land commonly lies within massive granite banks, many of which may be of Romano-British or earlier origin.

Source: West Penwith Countryside Character Area description; Countryside Quality Counts (2003)

5.2 Field patterns

The open plateaux are a green, predominantly pastoral, farmed landscape with generally small- or medium-sized fields divided by Cornish hedges. Around the high ground, irregular fields, enclosed by largely treeless Cornish hedges, lie in complex patterns. The extensive areas of irregular fields with scattered hamlets and farmsteads represent a range of ages of enclosure. They contrast with the 18th and 19th century enclosures with rectilinear boundaries and larger farmsteads.

Source: West Penwith 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

Grazing represents the largest proportion of farms within the NCA, though the numbers of livestock fell significantly, a 15 per cent decrease, between 2000 and 2009. However, the amount of land classed as grazing or uncropped increased by 6 per cent. Cereal farms and other crops show a slight increase during the period but farms classed as "other", 59 in 2000, have disappeared by 2009 and "mixed" farms have also dropped in number.

Source: Agricultural Census, Defra (2010)

6.2 Farm size

The number of farms fell between 2000 and 2009 but the number of large (over 100 ha) farms rose significantly from 39 to 51. Small (under 5ha) also increased in number and, overall, the area of land devoted to farming increased by just under 1,000 ha.

Source: Agricultural Census, Defra (2010)

6.3 Farm ownership

From 2000 to 2009 the total farmed area increased slightly from 13,999 to 14,878 ha, while the number of holdings decreased from 413 to 378, a drop of 8 per cent.

2009: Total farm area = 16,489 ha; owned land = 8,905 ha
2000: Total farm area = 15,554 ha; owned land = 9,643 ha

Source: Agricultural Census, Defra (2010)

6.4 Land use

Eighty per cent of land is classified as for grazing/uncropped land with the next most common use being cereals at just 9 per cent of total land. This is a slight increase of 2 per cent since 2000. Between 2000 and 2009, the amount of farmed land increased by 6 per cent to 16,489 ha. The greatest negative change is the loss of 'hardy nursery stock' and bulb growing, which declined by 87 per cent to only 13 ha between 2000 and 2009 and vegetable growing which declined by 35 per cent. Land turned to fruit growing increased, but still covers only 18 ha of the NCA.

Source: Agricultural Census, Defra (2010)

6.5 Livestock numbers

Cattle represent 86 per cent of total livestock. All livestock numbers fell between 2000 and 2009 but the greatest loss was the number of pigs which fell by 87 per cent. Sheep numbers dropped by just over a quarter. Cattle numbers fell by only 6 per cent and can be considered relatively stable.

Source: Agricultural Census, Defra (2010)

6.6 Farm labour

Numbers of all types of farm worker fell between 2000 and 2009. The exception to this would be part-time workers which nearly doubled and principal farmers which also increased. The 6 salaried managers which existed in 2000 are absent by 2009.

Source: Agricultural Census, Defra (2010)

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

7. Key habitats and species

7.1 Habitat distribution/coverage

The area contains excellent examples of lowland heathland fringed by the high exposed cliffs and steep valleys. These valleys provide just enough shelter for the development of scrub woodland and the valley floors occasionally allow the development of damp grasslands and willow carr. The matrix of Cornish hedges that cross the area provide refuge for many species that then re-colonise fields if abandonment occurs.

Source: West Penwith Natural Area Profile

7.2 Biodiversity Action Plan (BAP) Priority habitats

The Government's new strategy for biodiversity in England, Biodiversity 2020, replaces the previous Biodiversity Action Plan (BAP) led approach. Priority habitats and species are identified in Biodiversity 2020, but references to BAP priority habitats and species, and previous national targets have been removed. Biodiversity Action Plans remain a useful source of guidance and information. More information about Biodiversity 2020 can be found at; 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 9ha)	Percentage of NCA
Lowland heathland	1,961	10
Maritime cliff and slope	1,040	5
Broadleaved mixed and yew wood-land (broad habitat)	620	3
Purple moor grass and rush pasture	25	<1
Coastal sand dunes	14	<1
Reedbeds	3	<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

A sparsely populated area reflected in a dispersed settlement pattern of hamlets and farmsteads. Villages have been mainly developed around the fishing or mining industries.

Source: West Penwith Countryside Character Area description; Countryside Quality Counts (2003)

8.2 Main settlements

The main settlements within West Penwith NCA are: St Ives, Newlyn, Mousehole, St Buryan and St Just. The total estimated population for this NCA (derived from ONS 2001 census data) is: 25,753.

Source: West Penwith Countryside Character Area description; Countryside Quality Counts (2003)

8.3 Local vernacular & building materials

Granite with local slate roofing is the predominant building material.

Source: West Penwith Countryside Character Area description; Countryside Quality Counts (2003)

9. Key historic sites and features

9.1 Origin of historic features

It is said that West Penwith has a greater concentration of archaeological sites than any other comparable area in Western Europe. Many of the relics that remain were constructed at least 4,000 years ago. An extensive range of prehistoric field systems and megalithic monuments, hut circles, enclosed farms, courtyard houses and Iron Age hillforts are found in the NCA. The prehistoric patchwork field systems of the northern coastal fringe comprise one of the oldest farmed landscapes in the world. Mineral extraction and

mining sites, for example, Cape Cornwall, Levant near St Just, and Geevor, are of global importance with associated 18th and 19th century settlements of terraced houses and Methodist chapels. A scattering of wayside crosses, early Christian memorial stones and holy wells. Porthcurno transatlantic cabling station and associated WWII defences show the importance of the areas in defending the Western Approaches during WWII.

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

9.2 Designated historic assets

This NCA has the following historic designations:

- 2 Registered Parks and Gardens covering 65 ha.
- 0 Registered Battlefield/s covering.
- 240 Scheduled Monuments.
- 1,075 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

- 19 per cent of the NCA, 3,817 ha, is classified as being publically accessible.
- There are 551 km of public rights of way at a density of 2.7 km per km2.
- There are 1 National Trails (South West Coastal Path) runs for 64 km within the NCA.

Sources: Natural England (2010)

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

Access designation	Area (ha)	Percentage of NCA
National Trust (Accessible all year)	868	4
Common Land	671	3
Country Parks	0	0
CROW Access Land (Section 4 and 16)	3,545	18
CROW Section 15	201	1
Village Greens	0	0
Doorstep Greens	0	0
Forestry Commission Walkers Welcome Grants	0	0
Local Nature Reserves (LNR)	17	<1
Millennium Greens	0	0
Accessible National Nature Reserves (NNR)	0	0
Agri-environment Scheme Access	133	<1
Woods for People	0	0

Sources: Natural England (2011)

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

11. Experiential qualities

11.1 Tranquillity

Based on the CPRE map of tranquillity (2006) the most tranquil areas of the NCA are located on the North Coast between St Just and St Ives in the area typically associated with West Penwith. Tranquillity decreases towards the tourist destination and Lands End and in the vicinity of Penzance.

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

Tranquillity	Score
Highest Value within NCA	51
Lowest Value within NCA	-61
Mean Value within NCA	9

Sources: CPRE (2006)

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

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 large areas of the NCA, outside "haloes" around towns and major roads, are still undisturbed. A breakdown of intrusion values for this NCA is detailed in the table below.

Intrusion category	1960s (%)	1990s (%)	2007 (%)	Percentage change (1960s-2007)
Disturbed	12	17	31	19
Undisturbed	82	75	67	-25
Urban	0	0	1	1

Sources: CPRE (2007)

Notable trends from the 1960s to 2007 are an increase in the amount of disturbed land within the NCA; this change has focused on the expansion of areas of Penzance, St Ives and around St Just airfield.

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

Heinz Monument made from the chimney of the former mine at Cape Cornwall.

12. Data sources

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

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

Supporting document 2: Landscape change

Recent changes and trends

Trees and woodlands

- While woodland is not currently a significant part of land cover (776 ha, 4 per cent of the NCA) it has an important role locally in landscape character and habitat connectivity especially in the southern and eastern areas. Single wind-sculpted trees are often considered a poignant reminder of the extreme weather experienced by the area. Since 1999 only 3 ha of planting has occurred through Woodland Grant schemes.

Boundary features

- Cornish hedges form the significant boundary features in this landscape, many have remained in use for 4,000 years. Their maintenance and restoration through the ESA scheme reflects their importance. This extends to the sunken track-ways which still carry many of the roads across the area.

Agriculture

- The mix of types of agricultural practices within the area - vegetables, roots, flowers, stock and dairy- has been maintained but the overall number of holdings has decreased. The area is still dominated by extensive cattle and sheep grazing on permanent pastures and rough moorland areas. A significant shift towards arable production has occurred since 2000 and the number of dairy units continues to decrease.

Settlement and development

- Development pressure is low, on average, with development focussed on the main towns of Penzance and St Ives. There has been limited development scattered through the open countryside and smaller settlements, where barn conversions remain the main developments, although increased pressure is expected on the small market towns in the future as part of the social and economic regeneration of the area.

- Emerging planning policy suggests an increase in the number of new homes over the next 20 years across the County with a proportion of these being located in the existing small towns and villages, with some of these linked to small business development opportunities.

Semi-natural habitat

- While designated areas (SSSI, SAC) only make up 6 per cent of the NCA, priority habitats, including lowland heathland, maritime cliff and slope, broadleaved woodlands, purple moor grass and rush pasture, cover a further 3,000 ha of the NCA. This diverse range of habitats, in a small geographical area creates an intricate mosaic with the surrounding farmland much of which is of high conservation value. This area is an excellent example of where the variety of habitats provides a high density of species niches. This network has led in recent years to the return of breeding choughs to the area around St Just.

- Many of the semi-natural habitats in the area has benefitted from a period of positive management under the West Penwith Environmentally Sensitive Area scheme.

Historic features

- The NCA is characterised by a particular wealth of archaeological and historic features. The visible remains of human occupation provide a significant depth to the landscape of the area. Many of these sites have remained unaltered for many centuries, although in places neglect is starting to affect the legibility of sites through scrub growth and bracken invasion. The notification in 2006, of the Cornwall and West Devon Mining Landscape World Heritage Site has further enhanced the links between the landscape and historic features such as the famous Crowns mine engine houses at Botallack. This designation has also significantly improved the interpretation of the area, has lead to significant consolidation work and has lead to cohesion of tourist destinations under the World Heritage Site banner.

Coast and rivers

- The hard cliffs of the majority of the NCA mean that little change has occurred to the coastline with only some minor coastal defence work associated with protecting fishing villages. The Shoreline Management Plan for this stretch of coast identifies major areas of 'do nothing' with a few areas of 'hold the line' associated with the small fishing villages and holiday destinations.

- In relation to the area's minor rivers, the water quality has remained good and is expected to remain at a high level.

Minerals

- Mining for tin, copper and other minerals has had a significant impact on the landscape that we see now. The peak of industrial extraction and production ended 100 years ago although mining at Geevor continued until 1992.

Drivers of change

Climate change

- Potential sea level rise may affect low-lying beaches and coves

- Increased storminess may also affect coastal habitats, heritage features and protected species. It also increases the rate of erosion of landscape features such as the maritime cliffs and slopes which are a major priority habitat in West Penwith. The igneous rocks are very resistant to erosion but the Mylor slates, where they outcrop at the coast, are less so. These landscape features are a valuable geological resource in their own right

- Potential changes in rainfall patterns may impact on the types of crops grown within the area, this combined with potential desiccation of soils and flash flooding may lead to landscape change.

- A change in the climate may lead to the development and use of novel / unusual crops such as olives and vineyards. These reactive changes have occurred a number of times over the last 200 years in connection with early vegetables and flower production.

Other key drivers

- Allowing natural coastal processes to operate unimpeded.
- Pressure to develop within the area is generally low, but with higher demands in localised areas. Given the overall sensitivity of the landscape and natural environment, great attention needs to be applied to ensure the enhancement of both their character and quality resulting from any development.
- Given the generally sparse population, exposed nature of the area and southerly location, pressure to erect renewable energy developments, wind farms and solar farms, may increase. Conserving and enhancing the character and special qualities of the designated landscape – the Cornwall AONB – will remain a priority and present a challenge. In addition, off-shore wind farms and other marine renewable energy schemes may result in changes to seaward views and a perceived intrusion into the 'wildness' of the coast.
- Maintaining pastoral farming activity and encouraging extensive, low input livestock production to maintain and extend the amount of semi-natural habitat, such as lowland heath, and purple moor grass and rush pasture. However, maintaining an agricultural economy to sustain a labour force sufficient to manage the farmed landscape may be a challenge.
- The integrated management of semi-natural habitats, heritage and cultural features, and geological assets at a landscape scale, may result in more beneficial ways of working with a wider group of interested parties.
- Sustained and increased numbers of visitors present both a challenge to limited and restricted resources, but also an opportunity to engage a wider range of communities and support the local economy. Making valued habitats, geological features and heritage assets available to a wider audience may need to be balanced against increased rates of erosion, consumption of local resources – principally water and energy – and economic benefits.

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.

Heather and gorse in full flower on the moorland.

Statement of Environmental Opportunity	Ecosystem Service: Food Provision	Water Availability	Biomass Energy	Climate Regulation	Regulating Water Quality	Regulating Soil Quality	Regulating Water Flow	Regulating Soil Erosion	Pollination	Regulating Coastal Erosion	Sense of Place / Inspiration	Sense of history	Tranquility	Recreation	Biodiversity	Geodiversity
SEO 1: Conserve, manage and increase understanding of the valuable and inter-linked geological and cultural heritage assets including the mining legacy, recognised as part of a World Heritage Site, the distinctive granite tors, prehistoric and later settlements and ritual remains, the unique Cornish hedges and field patterns, which combined produce a unique historic and cultural landscape acknowledged as being of international importance.	↗ **	o	↗ *	↗ *	↗ *	↔ *	↗ *	↗ *	↔ *	↗ *	↗ **	↗ **	↔ **	↗ **	↗ *	↗ **
SEO 2: Manage, restore, link and enhance the area's rich mosaic of rare and endangered wildlife habitats, enhancing and extending their range where appropriate, while encouraging sustainable agricultural practices which contribute to the soil quality, water quality and habitat condition, as well as the local economy.	↗ **	↗ **	↗ *	↗ *	↗ **	↗ **	↗ **	↗ **	↗ *	↔ **	↗ *	↔ *	↔ *	↔ *	↗ **	↗ **
SEO 3: Conserve the distinctive landscape and settlement character, strong sense of history, high tranquillity levels and long coastal views to the Isles of Scilly and beyond which have led to the area's designation as an Area of Outstanding Natural Beauty (AONB).	↔ *	↔ *	↔	↔ *	↔ *	o	o	o	o	↔ *	↗ **	↗ **	↗ *	↗ *	↗ *	↗ *
SEO 4: Sustainably manage the high visitor pressure associated with this distinctive landscape to ensure that the numerous recreation opportunities such as the South West Coast Path and high-quality beaches continue to be enjoyed by the local community and visitors, and develop volunteering opportunities for visitors.	o	o *	o	↔ *	↔ *	↔ *	↔ *	↔ *	o	o	↗ **	↗ **	↔ *	↗ *	↔ *	↗ *

All Assessments are with low to medium confidence

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

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

Landscape attributes

Landscape attribute	Justification for selection
A complex and dramatic coastline of small headlands, with deeply incised steep-sided zawns on the north coast and sheltered woodland-clad valleys.	■ The coastline is dramatic in both appearance and diversity with the 'zawns' of St Just at one extreme, the valleys of Lamorna and some of the most rugged cliffs in the country at the other with Cape Cornwall and Land's End pointing out into the Atlantic. ■ The coast is visually outstanding; 67 per cent is within the Cornwall AONB and is recognised as a Heritage Coast. ■ The coastal heathland and unimproved grasslands along the coast have provided ideal habitats for the re-establishment of a population of choughs.
An open, mainly treeless moorland ridge at the heart of the area, with extensive tracts of heather, blanket bog, mire, grass heath and bracken traditionally grazed by cattle.	■ Important deposits of peat supports blanket bog, heath and moorland habitats much with SSSI status. Many rough areas are comprised of priority habitats (including heath, blanket bog, purple moor grass and rush pasture). ■ The openness of the area enables long views across land and sea, and creates a sense of elevation, remoteness, freedom, and removal from modern clutter and bustle. ■ Cattle are increasingly a feature of the grazed heathland and coastal slopes, and local hardy breeds being favoured due to their ability to survive in this harsh environment.

Landscape attribute	Justification for selection
A long history of human occupation is evident in the numerous heritage assets to be found across the landscape.	■ The story of human occupation is told by the many, and often protected, heritage assets to be found; prehistoric barrows, stone circles, hill-top enclosures, and early settlements linked by trackways flanked by Cornish hedges. ■ Nucleated settlements and the development of industrial communities associated with the mining heritage. ■ West Penwith contains part of the Cornwall and West Devon Mining Landscape World Heritage Site, 240 scheduled monuments, a wealth of listed buildings, and historical remains showing human habitation since pre- Bronze Age. ■ The low level of human occupation has meant that there is also a high value ecological network present in the area consisting of pockets of rough land, unimproved grassland and coastal heathland linked by a dense network of hedges and sunken lanes.
A landscape of great tranquillity and calm with dark night skies, at the end of the country.	■ West Penwith's location at the most southerly end of mainland Britain provides a deep sense of remoteness and belonging, often sought by many as an escape and inspiration. ■ Some 67 per cent of the area is classified as undisturbed in CPRE's Intrusion Map, with the central heathland ridge, in particular, an area of great tranquillity.
An extensive network of public rights of way, open access and the South West Coast Path National Trail.	■ 64 km of the South West Coast Path runs around the edge of the area including the turning point for many on the 1,014 km journey from Minehead to Studland.

Landscape opportunities

- Conserve the landscape's local distinctiveness– with exposed open moorland and a spectacular, coastline, ancient pasture fields, mixed agriculture and historic settlements.
- Protect from damage and appropriately manage the area's rich cultural heritage, most notably prehistoric and Romano – British remains, settlements, field systems, ritual monuments, hilltop enclosures and earthworks, and the significant industrial heritage linked to the area's tin-mining history.
- Protect the current settlement pattern of villages and small towns nestled in depressions and valleys and around sheltered coves.
- Appropriately manage (through grazing, burning, scrub clearance) the open rough ground – re-linking remnant areas of heather moorland and maintaining the open character of the landscape. Further extend connectivity by the reversion of more intensively managed land, where appropriate.
- Specific consideration is required to management works within the World Heritage Site to ensure biodiversity, landscape, culture and economic prosperity that the outstanding universal value of the site brings, can be realised in a sympathetic way.
- Actively manage and expand areas of semi-natural, habitat including mires, bog and open moorland communities to establish a robust ecological network within the area that provides niches for the areas rare and threatened species.
- Actively engage with local business and communities to sustainably develop the area's tourist industry to maintain the existing high quality landscape and wildlife assets. Consider opportunities for developing techniques to enhance the understanding of the area through provision of both physical and virtual information.

Prominent engine houses on the cliffs at Botallack.

Ecosystem service analysis

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

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

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision	Small dairy farms Specialist arable crops Fishing	Small dairy farms and an extensive range of meat products, some specialist arable crops (vegetables) are grown. Intensive early vegetable productions accounts for 10 per cent of the area producing potatoes, cauliflowers and other high-end value early crops. The fishing industry still has a significant base within the NCA at Newlyn. 80 per cent of registered land is classified as used for grazing or un-cropped managed predominantly by cattle grazing.	Regional	The wet and warm Atlantic climate is conducive to a long growing season which is reflected in the stock husbandry regime of animals being 'out' for a much greater proportion of the year. A relatively small farm size and mixed agriculture system (beef, dairy and sheep) means that margins are very low and expansion is difficult. Food production from a rough pastoral farming landscape is a key service in this area. The levels, type and quality of food produced reflect the area. The favourable climatic conditions allow the early production of vegetables. Changes in climate and weather patterns may challenge the traditional outputs from the area, but new opportunities may also arise. Maintaining current high levels of outputs, particularly high value vegetables, will have an ongoing impact on soil structure and condition and may speed rates of soils erosion. **Continued over...**	Work with the local farming / rural community to consider how to increase the overall productivity of agricultural systems within West Penwith, seeking to increase the commercial value of associated foodstuffs while avoiding adverse impacts within the NCA and on other ecosystem services. Develop markets that reduce the export of landed fish.	**Food provision** **Biodiversity** **Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Sense of place/ inspiration** **Sense of history**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Food provision continued				**Continued from previous...** Food provision is intrinsically linked to the cultural and some tourist services of West Penwith underpinning and promoting a strong sense of place and the range of biodiversity in this area.		
Timber provision	Small woodlands	Small oak and sycamore woodlands exist in the southern part of the NCA and in many of the valleys leading from the moor to the sea. A mix of management is seen in these woods.	Local	The area is not known for its timber resource and woodland is not a significant feature, only covering 4% of the NCA. Many of the woodlands are showing signs of neglect and this is decreasing their value.	Opportunities should be considered to maximise the biodiversity and economic values of these woodlands through the introduction of sympathetic management. An increase in woodland would contribute to soil quality and carbon storage but opportunities may be limited in the NCA.	**Timber provision** **Biodiversity** **Regulating water quality** **Regulating water flow** **Sense of place/ inspiration** **Regulating soil quality** **Climate regulation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Water availability	Small rivers and streams Ponds Drft Reservoir	Small rivers and streams rise on the rough moorland areas and many flow through sections of unimproved pasture and pockets of woodland before reaching the sea. While ponds are associated with some farms they are not common within the NCA. Drift Reservoir contains the largest area of open water (27 ha) in the NCA. The combination of intensive vegetable growing, increased cattle numbers and high visitor pressure places significant burdens on the water supply for the area. With periods of drought leading to the need to import significant amount of water to meet demand.	Local	High rainfall combined with impervious rocks mean that the NCA has few opportunities to provide storage of accessible water. The NCA's short streams and rivers provide the water for much of West Cornwall, this is stored in Drift Reservoir, but additional ground water abstraction for public water supply and agriculture puts pressure on water availability.	Seek opportunities to maximise the availability of water by increasing the retention of the water flows through the area through the reinstatement of natural, meandering drainage patterns and channels and reinstating wet habitats to intercept and retain increased volumes of water within the landscape to account for less continuous rates of rainfall. 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**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biomass energy	Hedge and woodland management	Small section wood from hedge and woodland management and the arisings from scrub management. There is little standing, accessible biomass in the area with under-managed woodland restricted to mainly inaccessible areas such as steep slopes in valleys.	Local	Re-instatement of traditional management may lead to the removal of areas of scrub and secondary woodland to expose grassland habitats and the management of hedges may generate some material suitable for local wood fuel, and would enhance the ecological network and connectivity of the area. Biomass crop production, such as miscanthus and short rotation coppice, should only be considered where landscape and environmental impact can be suitably mitigated.	Ensure that opportunities are pursued which enhance the biodiversity of the area through appropriate management of scrub and that arisings from this are considered as an economic resource. Management of vegetated Cornish hedgerows can supply a certain amount of wood for local use whilst enhance the longevity of these key features in the landscape.	**Biomass energy** **Food provision** **Biodiversity** **Sense of place/ inspiration** **Sense of history**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Climate regulation	Carbon-rich soils Woodland Permanent grassland	Extensive areas of carbon rich peaty soils are present within the NCA's moorlands. Valleys house many Small pockets of woodland and wet grassland habitat. These features all contribute to the regulation of climate.	Local	Peaty soils have an important role to play in the storage of carbon. The intensive use of soil for vegetable production will rapidly reduce soil carbon storage, with additional impacts on soil structure, biodiversity and function. Use of nitrogen fertilisers on poorly structured soils is likely to release nitrous oxide gases.	Prevent drainage, disturbance or liming on peaty-topped soils and prevent damage by poaching or erosion by encouraging sustainable grazing regimes on permanent pasture and rough land. Careful management of existing habitats and development of new habitats that can both provide links to the ecological network and play a role in climate regulation should be considered. These changes may also provide economic benefits due to reduced inorganic fertiliser use. Reducing the intensity of tillage and encouraging use of additional sources of organic matter on intensively managed soils, such as cover/catch crops and manures should help increase soil carbon and improve soil structure. This, with careful use of fertilisers, should help reduce nitrous oxide emissions.	**Climate regulation** **Regulating water quality** **Regulating water flow** **Biodiversity** **Regulating soil quality**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating water quality	Watercourse fencing Unimproved and semi-improved habitats Uncultivated areas on steep slopes Cross-field hedgerows (in arable)	Water quality is poor in the area due to intensive agricultural activity, associated with the sandy soils. The large areas of unimproved and semi-improved habitats are beneficial to good water quality. Past mining activity, spoil heaped and adits have lead to localised water quality issues.	Local	Recent, localised agricultural intensification (crop type and management practices) and inappropriate management has reduced the soils ability to regulate water quality through compaction and panning. Whilst some rivers have a 'good' ecological status, a number have 'bad' status due to pollution from the historic mining and from the acidic bedrock.	Increase amount of farmland managed under principles established under the Catchment Sensitive Farming initiative. Opportunities for enhancements such as, infrastructure improvements, crop type, fencing watercourses and introducing cross-field hedges and buffer strips should be considered.	**Regulating water quality** **Food provision** **Biodiversity** **Regulating soil erosion**
Regulating coastal flooding and erosion	Granite cliffs Beaches and other coastal geomorph-ological features	Some of the small coastal communities associated with the coves on the south coast are vulnerable to flooding associated with extreme weather events, particularly the combination of high tides and high rainfall resulting in flash flooding.	Local	Much of the coast of the area is formed from granite cliffs which are slowly eroding. The Shoreline Management Plan identifies many areas were no intervention is needed or proposed, and only small sections of coast where defences are to be actively maintained. Settlement along the coast has historically been located at sites which lay protected from the sea by natural formations and are less at risk from coastal flooding.	Work with communities and agencies to ensure the impact of increased flood events are realised and planned for. This may include considering the recreation of habitats such as mires and bogs in certain locations to retain water during high rainfall events.	**Regulation of coastal flooding and erosion** **Biodiversity** **Sense of place/ inspiration** **Sense of history**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Pollination	Heathland / Moorland Meadows and other species-rich grassland Hedge-banks	There are 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 hedge banks extending across the area also provides a valuable nectar source for pollinating insects.	Local	The contribution of pollination services to food production in this NCA is currently limited. An increase in pollination may be required in order to provide greater options for future cropping. Increases in the number and range of pollinators are also likely to be associated with an increase in biodiversity.	Further development of a network of flower-rich semi-natural habitats (including hedgerows) will provide a vector for the movement of natural pollinators through the landscape which will increase pollination potential for many crops.	**Pollination** **Biodiversity** **Food provision**
Regulating soil erosion	Rough grassland and improved pastures Field systems and low intensity agricultural practices	Rough grassland and improved pastures located on slopes and in areas of sandy soils. The small fields systems and low intensity agricultural practices provide some regulation of soil erosion. Soil erosion occurs principally in association with the production of vegetables on sandy and granitic soils in the southern section of the NCA and locally in association with livestock regimes	Regional	Soil erosion from intensive cultivation can result in high rates of sedimentation and nutrient loss which impacts on adjacent watercourses and the overall reduction in soil quality. The selection of less well suited crop types, cropping patterns, and direction of cultivation can markedly increase the risk of soil erosion. The intensive management of stock (dairy and beef) leads to soil compaction which provides an enhanced surface for soil erosion to occur. Improving soil quality through increasing organic matter will have potential benefits in regulating soil erosion by increasing the particle size making it more stable and able to withstand heavy rainfall. **Continued over...**	Increase sward diversity to increase deposition of organic matter on improved grasslands. Manage grazing regimes to reduce or minimise soil compaction and poaching. Also, manage the timing and frequency of grazing to allow; longer growing periods between grazings, increased root depth penetration, increased carbon storage and biological activity deeper in the soil, improving structure and stability. Retaining and enhancing the network of Cornish hedges and the careful consideration and relocation of gateways to ensure soil is not lost from fields into water courses. **Continued over...**	**Regulating soil erosion** **Regulating soil quality** **Regulating water quality** **Regulating water flow**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Regulating soil erosion continued				**...Continued from previous** It may also contribute towards climate change regulation, storing more carbon dioxide though the capacity of these soils to make a significant contribution is limited.	**...Continued from previous** Promote good management of top soils and employ minimum tillage techniques in locations where it may help to maintain good soil structure. Introduce, where appropriate buffer strips across fields to help reduce soil migration on slopes Where organic matter is low, increase organic matter inputs to improve soil structure.	
Sense of place/ inspiration	Open and expansive area of undeveloped and farmed land Dramatic and varied coast of cliffs, coves, woodland and grassland Uninterrupted views	The western-most extremity of mainland England – Land's End. Outstanding natural and scenic beauty, two-thirds of the area designated as AONB. A combination of simplicity and wildness, intimacy, drama, terrestrial and maritime connections and cultural connections. The remote and isolated character and Atlantic influence makes this area significantly important. A quiet, intensely rural quality contrasting with past industrial heritage and ancient features.	National	The area has a strong sense of place resulting from spectacular, high cliffs, deep zawns and a rolling, high moorland ridge. The irregular, ancient field patterns and jumbled land use further contribute to a distinctive character. This rugged natural environment is contrasted and complemented by the squat granite farmsteads, villages and hamlets. The area continues to be a major visitor destination and inspiration for artists, writers and photographers, drawn by the quality and character, drama and intense light of the landscape and coast.	Ensure that the important aspects and features that make up the unique character of the area are conserved and enhanced, whilst maintaining a vibrant, viable future use and occupation of the landscape.	**Sense of place/ iinspiration** **Biodiversity** **Sense of history** **Tranquillity** **Recreation**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Sense of history	Burial mounds, hut circles and villages, stone circles and ancient field boundaries Internationally important mining heritage	Continued human occupation of the area since before the Bronze Age provides a wealth of important information and records about how people have occupied and used the landscape and adapted to changes in climate. The mining heritage illustrates technological evolution and the exploitation of natural resources, which had wide-reaching implications, and is now recognised as part of a World Heritage Site.	International	The remote nature of the area has contributed to the preservation of a rich cultural heritage stretching back over 4,000 years. 240 Scheduled Ancient Monuments and many other non-designated sites represent one of the greatest concentrations of archaeological sites in Western Europe. World Heritage Site status conferred on the mining heritage and landscapes of the area seeks to enhance the conservation, access and interpretation of the surviving assets. The heritage assets within the area contribute significantly to the visitor and tourism-based business within the area. Continued protection and enhanced interpretation of the wealth of heritage present is essential.	Using traditional, locally sourced materials and vernacular design to inform new development will reinforce the character and locally distinctive nature of the area. Continuing to conserve and enhance both the physical remains and access and interpretation of the internationally important historic environment will further compliment and contribute to the diversification of business opportunities across the area. It provides opportunities for increased access and recreation, learning and research and appropriately managed enhanced biodiversity interest.	**Sense of history** **Sense of place/ inspiration** **Recreation** **Biodiversity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Tranquillity	A remote and isolated place free from major development and infrastructure. Dark skies and uninterrupted views	West Penwith lacks major modern infrastructure and development, preserving a tranquil and undisturbed character. The majority of the area retains a deeply tranquil character, complemented by a wealth of historic and natural assets.	National	The remoteness of the NCA ensures a high level of tranquillity enhanced by the rugged coastline and dominant sea views. The greatest impact on tranquillity results from the attractiveness of the area and the subsequent numbers of visitors to a comparatively small area.	Ensure that the sense of tranquillity is maintained by encouraging only appropriate levels of development. Enhancement of the natural environment around the towns of St Ives, Penzance and St Just to minimise impacts on tranquillity and light pollution. Increasing access to the natural and historic environment to help disburse concentrations of visitors to the area and maintain levels of tranquillity and overall visitor enjoyment.	**Tranquillity** **Sense of place/ inspiration** **Sense of history**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Recreation	Public rights of way network South West Coast Path National Trail Areas of open access Beaches and coves Minack Theatre and The Land's End Experience	The area has an extensive network of trackways and lanes which provide access between both settlements and the farming communities and the coast and moorland areas. There is a significant amount of open access land and 64 km of the South West Coast Path National Trail. The coves, beaches and settlements throughout the area, as well as the wealth of historic features, provide for more traditional visitor recreation including rock pooling and surfing.	National	The area benefits from a dense network of public rights of way many based on historic trackways and supply routes, which often serve to supplement the South West Coast Path. The area is a popular visitor and tourist destination with the 'art villages' of Mousehole, Lamorna and Newlyn being notable attractions. More traditional 'beach holidays' remain an important component of the recreational opportunities provided. More dynamic and active recreation includes cliff climbing, sea kayaking and surfing. Local food produce, culture and tradition add to the overall experience of the area.	Maintain and improve the quality of recreational assets, including the South West Coast Path National Trail and other quiet recreational routes by supporting opportunities to connect and link with new multi-user routes, and sustainable transport schemes, particularly in areas close to where people live, to give more opportunities to more people to access the environment.	**Recreation** **Sense of place/ inspiration** **Tranquillity**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Biodiversity	A mosaic of habitats	The area includes 1 SPA and 800 ha of SSSI and over of priority habitats made up of 2,000 ha Lowland Heath, 1,000 ha of Maritime Cliff and slopes and small pockets of Purple Moor Grass and Rush pasture, fens and coastal sand dunes. A mosaic of habitats include wet and dry heathland, coastal heath, maritime cliffs, unimproved and semi-improved grassland, woodland, streams and beach communities. There is a significant amount of habitat connectivity through the network of lanes and scrub valleys.	National	Many Sites of Special Scientific Interest are in favourable biological condition (97 per cent); however, areas of priority habitat without designation are often degraded due to past attempts to improve the area for agricultural production. The recent Environmentally Sensitive Area (ESA) scheme has seen a prolonged period of stability in the care and maintenance of many biodiversity and heritage assets across the area. The expiry of the ESA scheme, the changes in agri –environment scheme structures will place some of these important areas at risk. Changes in cropping to flowers and potatoes has led to a reduction in the number and quality of sites and links within the area due to removal hedgerows and widening of gates to accommodate large machinery.	Projects should be developed that merge the high environmental credentials of the area with the economic prosperity to develop a sustainable business plan which both recognises and rewards sustainable management and enhancement.	**Biodiversity** **Sense of place/ inspiration** **Climate regulation** **Pollination**

Service	Assets/ attributes: main contributors to service	State	Main beneficiary	Analysis	Opportunities	Principal services offered by opportunities
Geodiversity	Mineral deposits underpinning the St Just area of the UNESCO Cornwall and West Devon Mining World Heritage site (World Heritage Site) Cliffs, caves and geological exposures Coastal geomorphology	The predominantly granite geology of the area underpins all aspects of the landscape. It contributes significantly to the sense of place, history, recreation and is a major attraction for visitors to the area. The geology is clearly expressed in both the cliffs and tors and through its use as a building material. There are four geological SSSI and a further two including geological interest.	National / International	The range and variety of geology and geodiversity across the area allows for the study and interpretation of earth sciences. The area provides a record of the earliest occupation of the landscape by man, the use of and response to natural resources, particularly mineral deposits, stone and soils. The area provides examples of how mining has developed in the area and how the work in this area has impacted on a global scale recognised as a World Heritage Site.	Identify and realise opportunities for enhanced access to study and understand the internationally important geodiversity across this landscape.	**Geodiversity** **Regulating coastal flooding and erosion** **Biodiversity** **Regulating soil quality** **Sense of place/ inspiration** **Sense of history**

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