



# State of the natural environment in the South West

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Biodiversity South West; Cornwall Sea Fisheries Committee; Country Land and Business Association; Devon Sea Fisheries Committee; English Heritage; Environment Agency; Forestry Commission; Farming and Wildlife Advisory Group; Government Office for the South West; Heritage Lottery Fund; Local Record Centres; Marine Biological Association; Marine Fisheries Agency; National Farmers' Union; National Trust; Local Authorities; Land and Sea Managers; Royal Society for the Protection of Birds; The Wildlife Trusts; Southern Sea Fisheries Committee; South West Regional Development Agency; South West Regional Observatory; South West Protected Landscapes Forum; Sustainability South West;

and other partners too numerous to mention without whose help the natural environment would be a poorer place.

# Foreword

Natural England has been charged with ensuring that the region's unique land and seascapes are protected and improved. We also have the responsibility to help people enjoy, understand, access and benefit from the natural environment. The challenge for us now is to show how a healthy natural environment makes a real difference to people's lives. This report sets out to do just that, bringing together evidence from our national *State of the Natural Environment 2008* report and regional data sources.

The first section describes why our natural environment in the South West is so special. The second section looks at a number of important regional issues, highlighting the work Natural England is already doing and the challenges we and our partners face. The report concludes with a call to action, summarising how we can work together across the region to deliver a healthy natural environment that underpins people's prosperity and a more equitable society.

The region's longer term vision must be to achieve a better quality of life for the people living, working in and visiting the South West. Regional strategies already recognise the natural environment as a key asset in its own right.

To meet the challenge presented by climate change, our path to economic recovery must not be based on existing assumptions, simply re-establishing current patterns of growth, consumption and impacts. We must radically shift our economy and behaviours to build more sustainable patterns of human activity and economic interaction that deliver better

quality of life for all, provide climate change security and conserve and enhance the natural environment on which our wellbeing depends.

The South West has fantastic natural assets including magnificent countryside, a dramatic coastline, a rich marine environment and a range of nationally and internationally recognised wildlife sites and species. A healthy natural environment is important for its own sake and for the range of public goods and services it provides.

This report shows we still have much work to do to conserve our environment in the long term and ensure that people value and enjoy it. But it also shows that targeted action can make a huge positive difference to the natural environment and its contribution to the regional prosperity, particularly where strong partnerships work together.



© Natural England

Janette Ward  
Regional Director



# Chapter 1

## The natural environment in the South West: an overview

The South West is the largest of the English regions, covering roughly 24,000 km<sup>2</sup> or 18% of the country's land area. Geographically the region is a peninsula stretching 350 km from north Gloucestershire to south west Cornwall. While it is the country's most rural region with over half of its five million residents living outside towns, there is a significant urban population. More than one in six people reside in the region's main conurbations – Bristol, Plymouth, Swindon and Bournemouth/Poole – and many more in its historic cities, market and coastal towns.

The region's beauty, history and tranquillity draw visitors from all over the country and the world. Almost 40% of the region's land area has been designated, receiving special protection for the outstanding quality of its landscape. The South West is renowned for its maritime environment. The region has over 2,100 kilometres of magnificent coastline, more than any other region and a quarter of England's total coast. The seas off the South West of England support half of the UK's wildlife and contain undersea landscapes as dramatic and diverse as anything on land.

The South West's unique natural environment provides essential public services:

- The basic necessities of life – clean air, clean water and productive soils in which to grow our food.
- Support for a range of economic activities – raw materials for sustainable energy production and construction.
- Security against climate change – locking up our carbon emissions and protecting against the risk of flooding.
- Our natural health service – with the potential to make a major contribution to the health and wellbeing of the nation, free for everyone to use.
- The foundations of our cultural identity – our land and seascapes bring pleasure to millions, and underpin profitable tourism and recreation industries.



River Dart, Devon

## 1.1 Landscape

Landscape is the meeting place of nature, land use and people. It links the social, economic, cultural and environmental values of the past, the present and the future giving the communities that live there a distinctive sense of place and creating local identities. Natural England believes that all landscapes matter.

The landscapes of the South West are highly diverse with 41 National Character Areas (NCAs) identified which can be distinguished by their unique combinations of natural and human influenced features. Some of the South West's best loved, iconic landscapes are protected by statutory or non-statutory designations.

- There are two National Parks wholly in the South West, Dartmoor and Exmoor, covering 7% (167,855 ha) of the region, and a small part of the New Forest.
- There are 12 Areas of Outstanding Natural Beauty (AONB) wholly in the South West covering 30% (720,030 ha) of the region plus parts of two others.
- The region contains more than 841 kilometres of England's Heritage Coast, which is approximately two thirds of all heritage coast in the country.
- There are four World Heritage Sites (WHS) in the South West: Stonehenge and Avebury, the City of Bath, the Cornwall and West Devon Mining Landscape and the East Devon and Dorset World Heritage Site, commonly known as the Jurassic Coast and the only WHS in England that has been designated primarily for its natural rather than cultural features.
- The South West has 1,227 km of National Trails made up of two complete trails; the South West Coast Path and the Cotswold Way. There are parts of three other Trails in the region: Offa's Dyke Path, the Ridgeway and the Thames Path.
- Braunton Burrows Biosphere Reserve (1,351 ha), which lies within the North Devon AONB, is one of only three Biosphere Reserves in England.
- Covering 6,200 ha of land and 4,100 ha of seabed, the English Riviera is one of only two Geoparks in England.
- There are 574 recorded geological features in the South West, the highest number of any region and one third of all these features in England.
- The South West also has two of the country's 12 Community Forests, the Forest of Avon and the Great Western Community Forest.

Heather on Dartmoor



## 1.2 Biodiversity

The South West supports a significant proportion of England's most valued land and marine wildlife sites, habitats and species. A rich geological diversity and mild wet climate combine to create the region's special fauna and flora. Almost 10% of the region by area has been designated as nationally or internationally important sites for wildlife. The South West contains 52 National Nature Reserves (16,568 hectares) and 179 Local Nature Reserves (13,092 hectares).

Sites of Special Scientific Interest (SSSIs) support the country's very best wildlife and geology. Almost a quarter (978) of the country's SSSIs are in the South West covering over 170,000 hectares. Currently 87% of the region's SSSIs are in 'favourable' condition, an increase from 68% in 2003. Better evidence on the condition of habitats, particularly those outside designated sites in the South West, is required.

The South West has the largest area of semi-natural habitats of any English region and supports a high proportion of some of the country's rarest and most endangered UK Biodiversity Action Plan (UK BAP) priority habitats:

- 60% of the UK's calcareous grassland, mainly in Wiltshire, Gloucestershire and Dorset.
- 25% of the UK's lowland heaths, mostly in Dorset, Devon and Cornwall.
- 57% of the UK's lowland meadows, mostly in Devon and the Somerset Levels.
- 37% of the UK's saline lagoon habitat – the Fleet in Dorset is England's largest brackish lagoon.
- some of the best offshore reefs in the country particularly those off south and east Devon.

Despite signs of recovery during the last decade, the South West's biodiversity is much less rich now than 50 years ago. There has been a long-term decline in a number of habitats, such as woodland, wetland and lowland heath and in indicator species. For example, the regional farmland bird index has declined by 40% since the 1970s.

The South West supports many species of global and national importance. Examples of species which are only found in the South West include the Lundy cabbage, western ramping fumitory and Cornish path moss. The region also hosts an important population of the hairy click beetle which occurs in reed beds alongside the River Parrett in Somerset.

The South West's aquatic environment contains a significant proportion of the region's wildlife. The shallow reefs off the coast of east Devon and Dorset support high densities of the pink sea fan, a soft coral more typical of Mediterranean waters. The region is also home to the rare freshwater pearl mussel with a population in the Taw and Torridge rivers.

Many species receive protection directly through specific legislation while others are afforded protection via site designation. The South West contains:

- all or part of nine Ramsar sites, wetlands of international importance.
- England's only statutory Marine Nature Reserve around the Island of Lundy.
- 69 Special Areas of Conservation (SAC), internationally important sites for threatened habitats and species, including eight marine SACs with more proposed for designation in 2010.
- 15 Special Protection Areas designated to protect rare and vulnerable birds.



### 1.3 Enjoying the natural environment

The South West has plenty of opportunities for people to get out and about and enjoy the outdoors, whether it's a visit to a National Park, nature reserve, beach or local green space. The region has an estimated 34,700 km of rights of way and 4.5% is open access land with significant areas on Dartmoor and Bodmin Moor. National Nature Reserves (NNRs) in the region received 2.6 million visitors in 2005/06 while Studland and Godlington Heath NNR, which is managed by the National Trust, was the third most visited NNR in the country. Exmoor and Dartmoor National Parks received 5.4 million visitor days in 2005/06.

The South West has the highest levels of legal coastal access in England (70%). Perhaps the jewel in the region's crown is the 1,014 km South West Coast Path stretching from Minehead in Somerset to Poole Harbour in Dorset, Britain's longest National Trail. South West Tourism estimates that each year six million people use the path, making it one of the region's key tourist attractions. Its value to the regional economy has been estimated at £307 million per year generated through the associated spend of those who walk the path. Draft legislation currently before Parliament is proposing measures to improve access along the English coast. Recognising that the coast is a dynamic environment and the rate at

which it is changing is likely to increase due to climate change, one proposed measure is that access along a coastal path should automatically 'roll back' if the land recedes.

### 1.4 Natural England's role

Here are just a few examples of how we have worked with others to protect and enhance the natural environment of the South West and extend the opportunities for people to enjoy this asset.

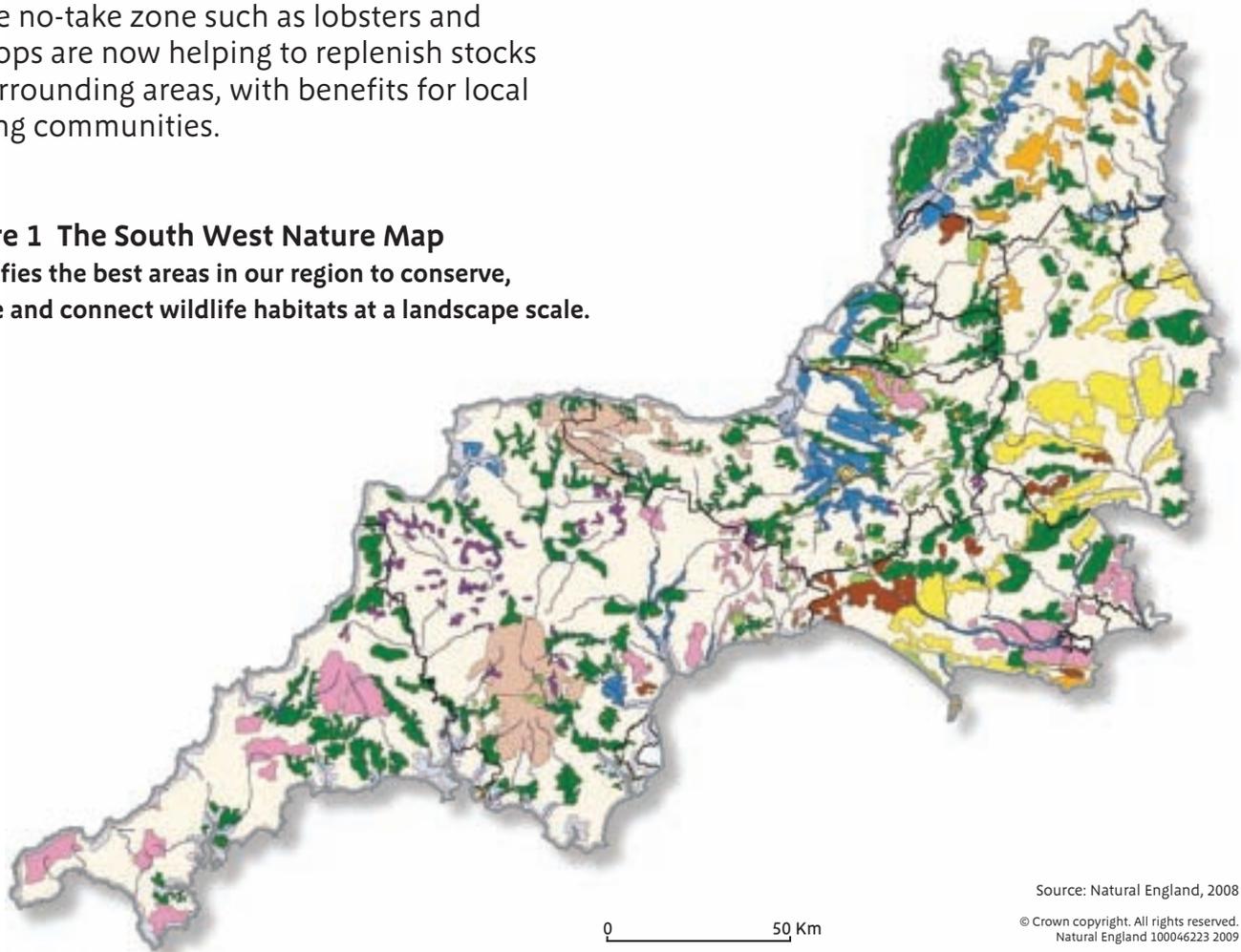
Every AONB has a **Sustainable Development Fund** (SDF) fully funded by Natural England. In the East Devon AONB, the SDF has: assisted the development of a small woodland owners' network and the installation of a 50kW woodchip boiler; extended the work of the Water Vole Recovery Project into the Otter and Sid catchments; and established a drystone wall training centre in Purbeck.

Across West Cornwall the **HEATH (Heathland, Environment, Agriculture, Tourism, Heritage)** project has reconnected and restored lowland heathland habitat on over 4,000 hectares through the re-introduction of traditional farming practices such as scrub clearance, grazing, bracken management and controlled burning. More information is available at [www.theheathproject.org.uk](http://www.theheathproject.org.uk)

The shore and seas around Lundy Island off the north Devon coast were designated as England's first statutory Marine Nature Reserve in 1986. Collaboration with the Devon Sea Fisheries Committee and north Devon fishermen led to the creation of the **Lundy no-take zone**. The first legally enforced no-fishing area in UK waters for the purposes of nature conservation, the zone covers four square kilometres and gives greater protection to the most sensitive part of the Reserve. Populations of commercial species in the no-take zone such as lobsters and scallops are now helping to replenish stocks in surrounding areas, with benefits for local fishing communities.

Natural England has worked with Biodiversity South West to develop the **South West Nature Map** which highlights 'Strategic Nature Areas' (SNAs) in the region. These are blocks of land with the best potential for maintaining and expanding terrestrial wildlife habitats, through restoration and/or re-creation at a 'landscape' scale. For more information visit: [www.biodiversitiesouthwest.org.uk/nmap.html](http://www.biodiversitiesouthwest.org.uk/nmap.html)

**Figure 1 The South West Nature Map**  
Identifies the best areas in our region to conserve, create and connect wildlife habitats at a landscape scale.



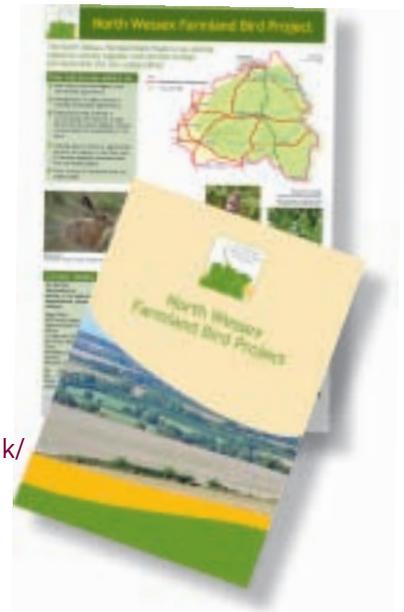
Each SNA contains a mosaic of habitats. The predominant habitat type for each SNA is shown in the key:

- |   |                                  |   |   |
|---|----------------------------------|---|---|
|  | Woodland                         |  | Coastal & floodplain grazing marsh                                      |
|  | Chalk downland                   |  | Standing open water   |
|  | Limestone grassland              |  | Coastal habitats  |
|  | Neutral grassland                |  | Mosaic  |
|  | Purple moor grass & rush pasture |  | Principal river networks  |
|  | Upland heath                     |  | County/Unitary Authority boundary                                       |
|  | Lowland heath                    |  | Area outside of SNAs also contains important wildlife sites and species |

**The South West Farmland Bird Initiative** is an exciting, pioneering partnership, which is working with the farming community and other partners to deliver positive habitat management for farmland birds across Gloucestershire, Wiltshire and Dorset.

These areas are nationally important for farmland birds and other wildlife found within the wider countryside, particularly for those bird species associated with arable farmland - lapwing, grey partridge, turtle dove, yellow wagtail, tree sparrow, corn bunting - and rarer arable plants like shepherd's needle.

The initiative consists of four projects, targeting the Cotswolds, North Wessex Downs, south Wiltshire and Dorset. Using Environmental Stewardship funding each project will deliver a combination of tailored advice, workshops and one-to-one farm visits to help farmers put the right package of management measures in place to reverse the decline in farmland birds.



Each area has a leaflet and poster detailing the initiative and its benefits.

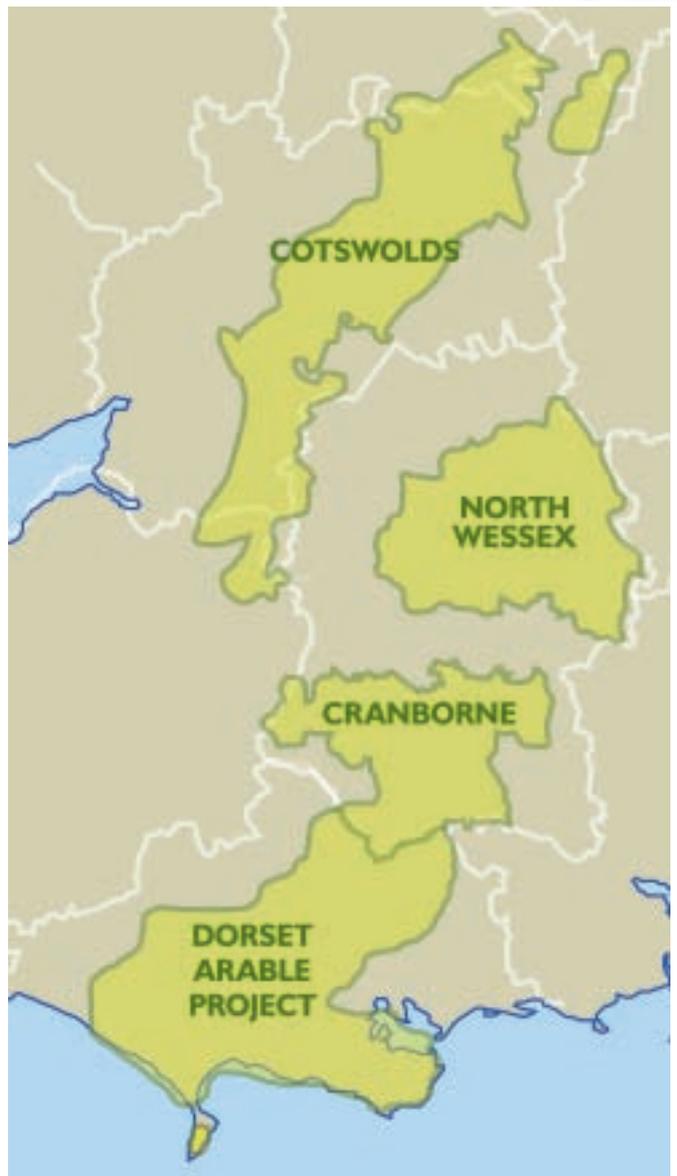
For more information visit:

[www.naturalengland.org.uk/regions/south\\_west/ourwork/farmlandbirds](http://www.naturalengland.org.uk/regions/south_west/ourwork/farmlandbirds)

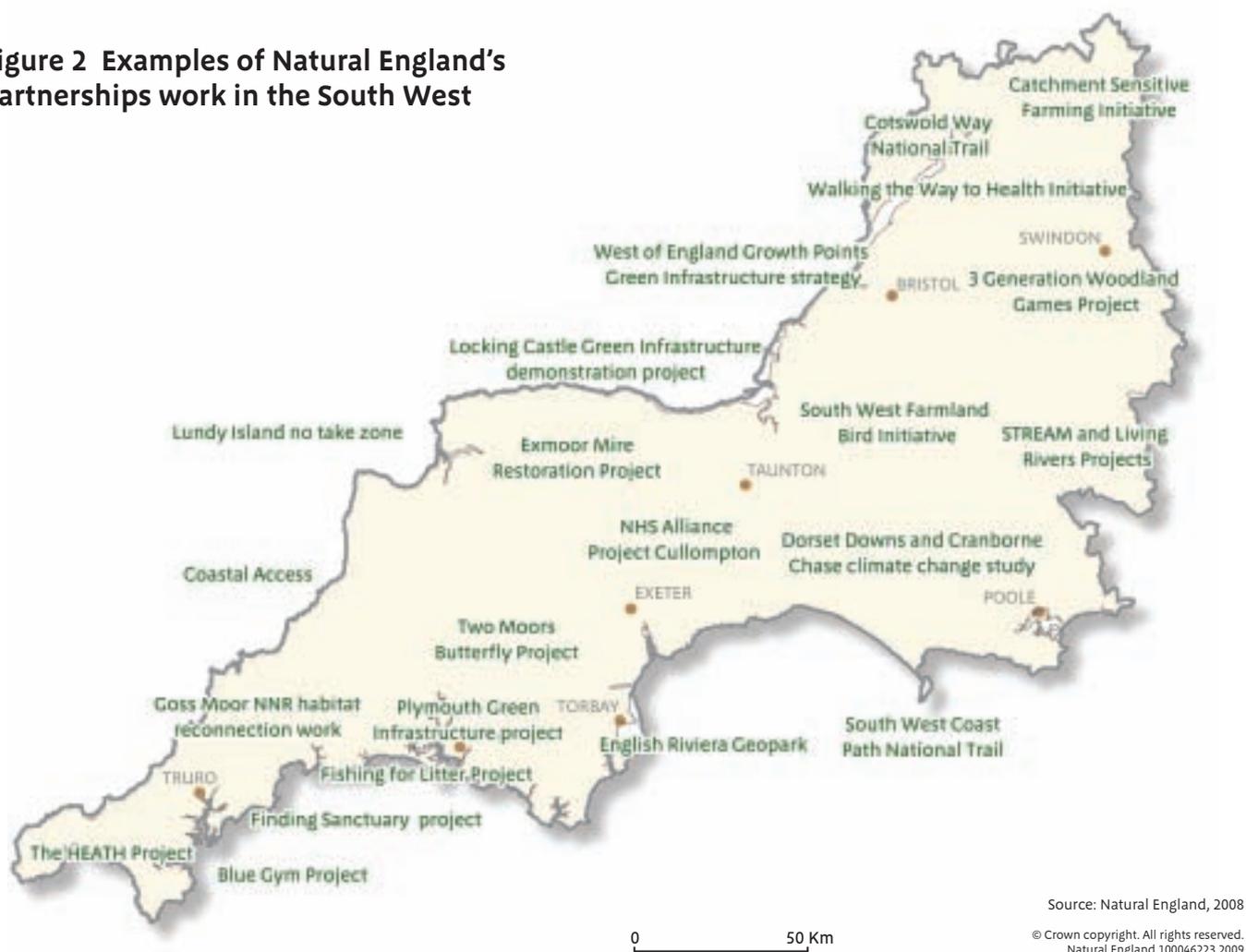
© Greg and Yvonne Dean/World Wildlife Images



Corn bunting



**Figure 2 Examples of Natural England's partnerships work in the South West**



The **Access to Nature** scheme encourages people, particularly those who have little or no contact with the natural environment, to appreciate and make use of local green space. The scheme is managed by Natural England on behalf of the Big Lottery Fund and a consortium of 12 environmental organisations. Applications are prioritised to ensure that disadvantaged communities and groups in both urban and rural areas of the region are the beneficiaries. Grants have already been awarded to the Salisbury Arts Festival to enable urban communities to engage with the natural environment through art, and to the Wiltshire Wildlife Trust to work with families and young people to connect them with local nature spaces. For more information visit: [www.naturalengland.org.uk/ourwork/enjoying/outdoorsforall/accesstonature](http://www.naturalengland.org.uk/ourwork/enjoying/outdoorsforall/accesstonature)

The **Living River** project aims to increase awareness and appreciation of the River Avon and its tributaries. Working closely with the local communities from the river's headwaters in the Wiltshire Downs to the sea at Christchurch in Dorset, a key element of the project is increasing access to and information about the river. Resources to restore river habitats at sites the public can enjoy have been provided by a range of partners including Heritage Lottery Fund and Natural England. The project is using innovative methods to engage audiences throughout the river catchment and secure their support for its conservation. For more information visit: [www.livingriver.org.uk](http://www.livingriver.org.uk)

# Chapter 2

## Key issues for Natural England in the South West

Chapter 1 showed that we have a range of fantastic natural assets in the South West and gave some examples of our work to protect, enhance and appreciate them. Here we use a number of priority work areas to illustrate in more detail how Natural England is targeting its current activity and also describe the challenges ahead for the region.

### 2.1 Sustainable land management

#### Evidence

Over the centuries, farming and forestry have created the unique quality and diversity of the South West landscape, from the small fields enclosed by banks and hedges to the wide open space of the uplands of Dartmoor and Exmoor. Land management practices today continue to contribute to the region's distinctive landscape.

Three quarters, or approximately 1.8 million hectares, of the entire land area of the region is farmed and there are nearly 50,000 agricultural holdings (about one quarter of the UK total). Farming contributes £1.4 billion to the South West economy, a quarter of the total for UK agriculture. The region has more grazing livestock than any other and has one third of the nation's beef and dairy herds.

Post war agricultural policy has resulted in a trend towards fewer and larger farms and more intensive and specialised production systems. There has been significant landscape change in the South West with loss of features such as hedgerows, traditional orchards and historic environment as well as reduction or loss of species, and damage to soils. Other indirect environmental impacts include diffuse pollution, nitrous oxide emissions and loss of carbon from soils.

Devon cattle in culm grassland



© Peter Burgess/Devon Wildlife Trust

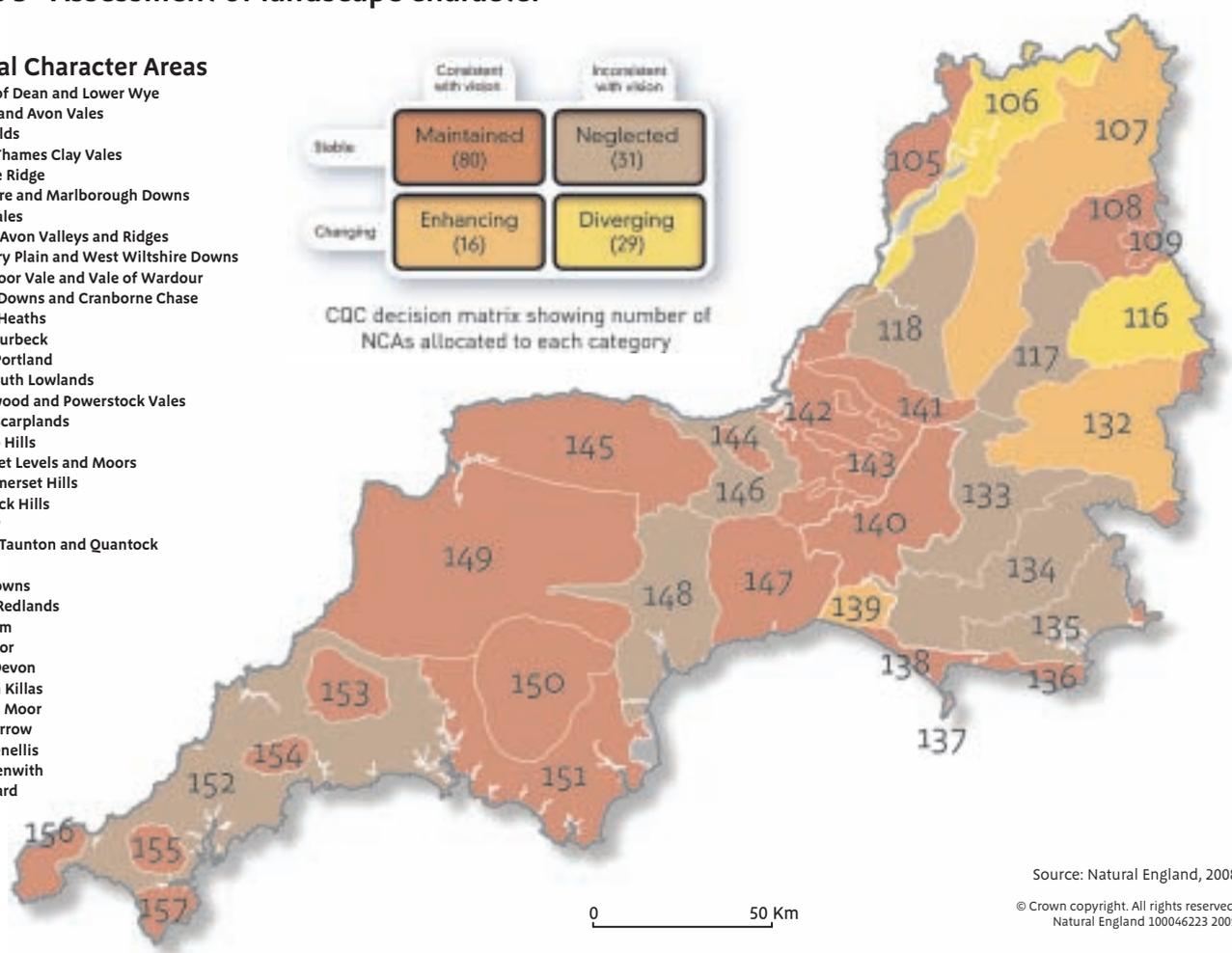
**Figure 3 Assessment of landscape character**

**National Character Areas**

- 105 Forest of Dean and Lower Wye
- 106 Severn and Avon Vales
- 107 Cotswolds
- 108 Upper Thames Clay Vales
- 109 Midvale Ridge
- 116 Berkshire and Marlborough Downs
- 117 Avon Vales
- 118 Bristol, Avon Valleys and Ridges
- 132 Salisbury Plain and West Wiltshire Downs
- 133 Blackmoor Vale and Vale of Wardour
- 134 Dorset Downs and Cranborne Chase
- 135 Dorset Heaths
- 136 South Purbeck
- 137 Isle of Portland
- 138 Weymouth Lowlands
- 139 Marshwood and Powerstock Vales
- 140 Yeovil Scarplands
- 141 Mendip Hills
- 142 Somerset Levels and Moors
- 143 Mid Somerset Hills
- 144 Quantock Hills
- 145 Exmoor
- 146 Vale of Taunton and Quantock Fringes
- 147 Blackdowns
- 148 Devon Redlands
- 149 The Culm
- 150 Dartmoor
- 151 South Devon
- 152 Cornish Killas
- 153 Bodmin Moor
- 154 Hensbarrow
- 155 Carnmenellis
- 156 West Penwith
- 157 The Lizard

	Consistent with vision	Inconsistent with vision
Stable	Maintained (80)	Neglected (31)
Changing	Enhancing (16)	Diverging (29)

CDC decision matrix showing number of NCAs allocated to each category.



A system has been developed to monitor change in National Character Areas (NCAs) based on the retention or loss of key features, such as woodlands, field boundaries and farming methods. The calculation is complex but the overall regional summary is that marked change, inconsistent with the traditional character of the countryside, is evident in parts of Somerset, Wiltshire, North Dorset and Cornwall.

As a result of increased regulation and reduced profitability in some areas, livestock producers, particularly smaller ones, have been forced out of the industry with the result that the numbers of grazing animals have declined. The reduction in livestock numbers has consequences in terms of landscape management. Looking forward we need to reassess what our priorities are to achieve sustainable land management and the public services it provides.

**Responses**

Natural England supports, promotes and encourages the adoption of sustainable land management practices and is working with partners on a number of initiatives. Environmental Stewardship is an agri-environment scheme administered by Natural England. It provides financial incentives which enable landowners to farm commercially whilst restoring and recreating habitats, maintaining landscapes, encouraging wildlife, preserving historic sites, adding footpaths and bridleways and offering educational visits. In addition to grant payments, assistance is provided through advice and events such as workshops, clinics farm walks and visits.

Currently, 1.2 million ha or 61.7% of the South West's Utilisable Agricultural Area is now covered by an agri-environment scheme agreement. Payments have already assisted the recovery of a range of key habitats such as culm grassland and species including skylark, bittern, snipe and curlew, and helped to restore and maintain thousands of kilometres of hedgerows and stone walls. Through educational visits and access, these schemes also have a role in reconnecting people with the countryside.

The **Catchment Sensitive Farming Delivery Initiative** (CSFDI) seeks to mitigate diffuse water pollution from agriculture in 12 catchment areas of the region. This is done through encouraging land managers to voluntarily adopt practices that maintain diffuse emissions of pollutants into rivers, groundwater and other aquatic habitats at acceptable levels. The initiative also includes a Capital Grant Scheme for capital works that would benefit water quality in priority catchments. Together with the Environment Agency, Natural England will also deliver Soils for Profit (S4P) helping farmers beyond CSFDI catchments, especially those in Nitrate Vulnerable Zones (NVZs) through a programme of advice, training and small capital grants.

Together with the Country Landowners and Business Association, Natural England is also enabling farmers and land managers in the region to learn how to carry out a Carbon Accounting for Land Managers (CALM) audit. This helps them identify the actions which can be taken to reduce their greenhouse gas emissions.

### Challenges

Overall there are significant challenges ahead if land management is to continue delivering social and economic benefits but not at the detriment of the natural environment. A key challenge is to ensure that we achieve food production while meeting the competing demands for land such as new forms of energy production, housing and related infrastructure. There is also the added challenge of climate change to consider, coupled with volatile commodity and fuel markets.

We need partners to help us deliver Environmental Stewardship on holdings with features that are likely to deliver the most environmental or other public benefits. The next big challenge will be to present a case for a reformed Common Agricultural Policy with a greater emphasis on funding the delivery of public benefits through environmental land management.

Regionally, we also wish to work with partners to help deliver the ambitions and objectives of the South West Sustainable Food and Farming Delivery Plan 2008-2011.



Chris and Richard Gordon – South West Future of Farming Award winners

© Natural England/Paul Clendell



## 2.2 The maritime environment

### Evidence

The maritime environment (our seas, coasts, bays, estuaries and islands) defines the South West, from our seafaring history to our innovative water sports. It enhances quality of life of the South West's residents and underpins the regional economy. Many people are drawn to the region by the quality of our seas and the magnificent coastal landscapes. The South West has:

- a territorial sea area of 41,000 square km compared to 24,000 square km of land.
- more than 20 internationally important coastal and marine conservation sites.
- around 8,000 marine species, over half of the UK's wildlife.

The maritime environment provides opportunities for fisheries, tourism, recreation, renewable energy, and a whole range of support services such as marine technology development and innovative marine science. The South West has:

- 42% of England's commercial fishing activity, supporting around 9,000 jobs.

- recreational angling generating more than 3,000 jobs.
- approximately 1,400 marine businesses.
- an estimated 70% of the UK's marine biologists and 50% of its oceanographers.

The hidden nature of much of the maritime environment means there is little public understanding of the richness of our sea, the threats it faces and the damage and degradation currently taking place. Key pressures include unsustainable fishing activity, pollution, inappropriate development and climate change.

Commercial fishing activity impacts on both target and non-target species. Damage to the seabed occurs from the use of certain types of fishing gear. In 2005 fish and shellfish worth £53 million were landed in the region's ports, but fish landings are on a clear downward trend. Over-fishing in our seas is believed to be reducing both the diversity of species and the average size of the fish caught. These changes affect not only the viability of the South West fishing industry, but also the whole marine food chain.

Water quality is a major concern in estuaries and enclosed coastal waters of the South West. This is affected primarily by diffuse inputs such as run-off from agriculture and urban drainage. A combination of agricultural land-use, steeply sloping land and high rainfall has resulted in diffuse pollution accounting for around 80% of all marine pollution.

Development pressures around our coast are immense. Many of our major urban settlements are sited around estuaries, while the quality of life that attracts people to the South West drives further development in attractive coastal locations. Numerous small scale developments result in a loss of coastal and marine habitats, particularly of estuarine foreshore, and associated impacts on fish feeding and spawning areas and public access.

### Responses

Work funded by Natural England, The Wildlife Trusts and others has identified 'hotspots' for basking shark activity around the South West. These are key areas where water movement concentrates plankton, making them important locations for feeding basking sharks as well as other marine wildlife, such as fish and cetaceans (whales, dolphins and porpoises). Such information is crucial in developing appropriate protection for a wide range of species.

Fishermen in the South West have also taken positive steps to improve the marine environment, for example with funding from Natural England and other partners through the *Fishing for Litter* project. This is providing fishermen with on-board facilities for collecting rubbish trawled up during fishing and disposal points in port where the rubbish can be recycled.

Lyme Bay is considered to be regionally and nationally important for selected cetacean species such as the white-beaked dolphin and internationally important for the globally threatened Balearic shearwater. Working with

**Finding Sanctuary** is the most significant opportunity for marine conservation there has ever been in the South West. The project is working with stakeholders to design an ecologically coherent network of Marine Conservation Zones (MCZs) by mid 2011 which will safeguard the region's undersea habitats and marine life. The knowledge and views of people who use the sea for their livelihood or leisure are at the heart of the project. MCZs will be planned in a way that minimises impacts to stakeholders and provides clear benefits for nature conservation, through a transparent, fair and collaborative process. For more information visit: [www.finding-sanctuary.org](http://www.finding-sanctuary.org)

the charity Marinelife, Natural England is supporting scientific surveys that are already confirming the area's importance for these threatened marine species and is putting forward recommendations on how best to co-ordinate and target future conservation action. A key part of the project has been reinforcing good relationships with the local community, in particular anglers, recreational divers and fishing boat operators.



Balearic shearwater

© Tom Brereton/Marinlife



White-beaked dolphin in Lyme Bay

## Challenges

To deliver significant improvements to our maritime environment we need robust environmental protection. We also need a better way of valuing and understanding our maritime environment that encourages a longer term view. We expect all regional decision makers to champion sustainability in our maritime environment – from sourcing decisions which support best practice, to allocation of funds that encourage positive change.

South West seas are a shared resource. We need to involve other nations in delivering sustainable management of our coastal waters. Collectively we must work to influence European Directives and Policies to deliver sustainability across European waters.

There must be a duty on new marine management bodies to further the conservation of marine wildlife. This is a time of great change in the fishing industry. Support will be needed to help it adapt to a period of uncertainty. This could be done for example, by targeting European Fisheries Funding towards a shift to sustainable fishing techniques, with associate accreditation, or enhanced involvement in Marine Conservation Zone selection and management through the *Finding Sanctuary* project.

In terms of the coastal environment, with climate change and sea level rise a reality, we need planners and policy makers to take the long term view. This means refusing developments which constrain our ability to allow the coast to move, and actively planning for difficult choices such as managed coastal realignment.

## 2.3 Green Infrastructure

### Evidence

The high quality natural environment of the South West means that land for development is in short supply. However, the draft Regional Spatial Strategy (RSS) proposes that 592,460 homes should be built in the next 20 years to accommodate the region's fast growing population, with the majority of new homes focussed on eight 'Growth Points'. The economy may be slowing down but the expectation is that the need for new dwellings and associated infrastructure will remain. How can the region deliver truly sustainable urban settlements that enhance peoples' quality of life and support the South West's landscapes and natural environment?

'Green Infrastructure' is the network of protected sites, green spaces and various linkages (including parks, gardens, rights of way, river corridors, allotments, canals, rivers, cycleways and footpaths) that thread throughout urban areas and out to the wider countryside. Natural England is a strong advocate for Green Infrastructure which should be an integral component of any new or existing development, as fundamental as sewers and roads, shops and schools. Well planned and managed Green Infrastructure can provide multiple benefits – areas for recreation, wildlife, growing food, shade, water management and carbon storage to mitigate impacts of climate change – and is essential to enhancing quality of life in the region.

Figure 4 Accessible green space in the South West

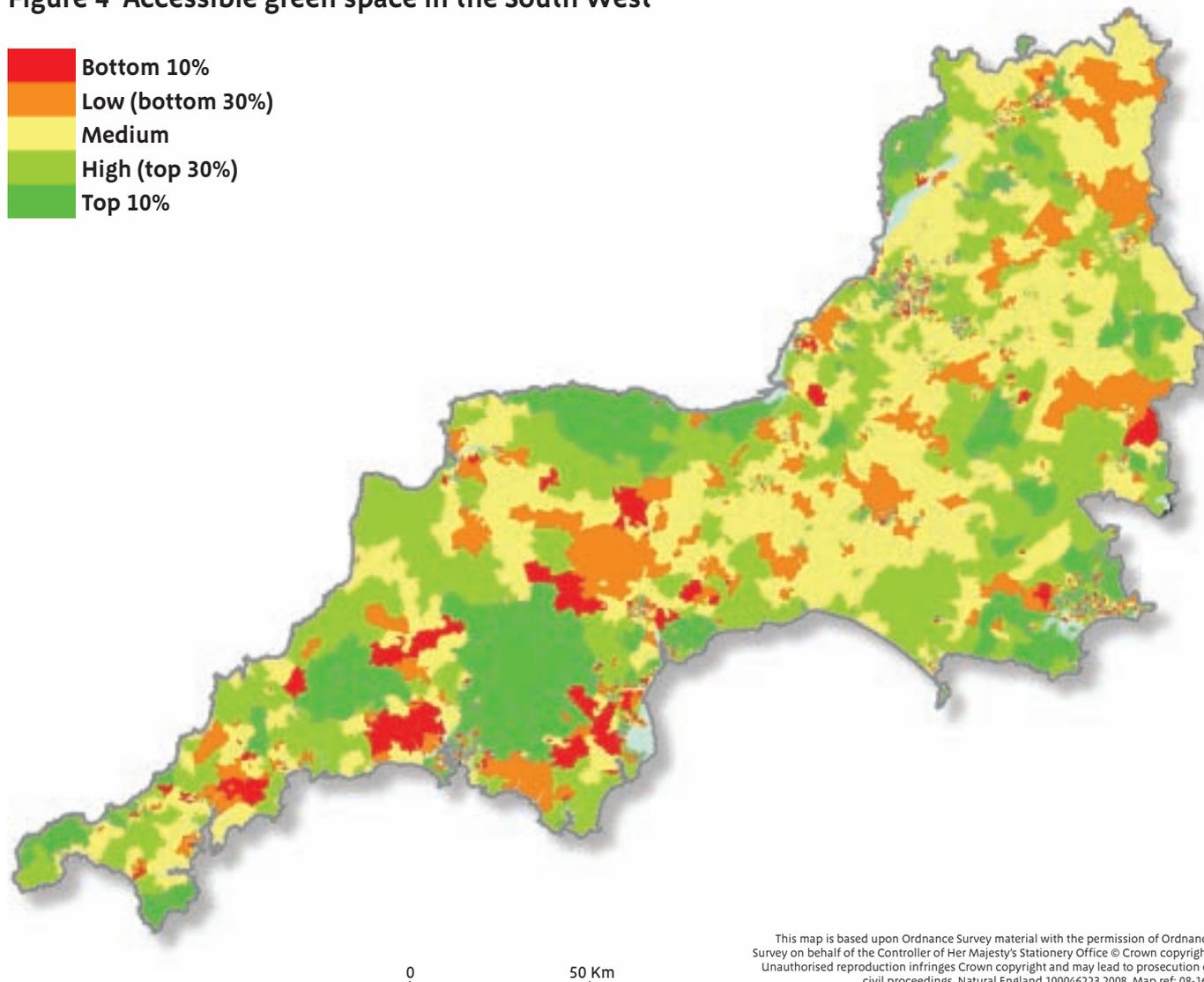
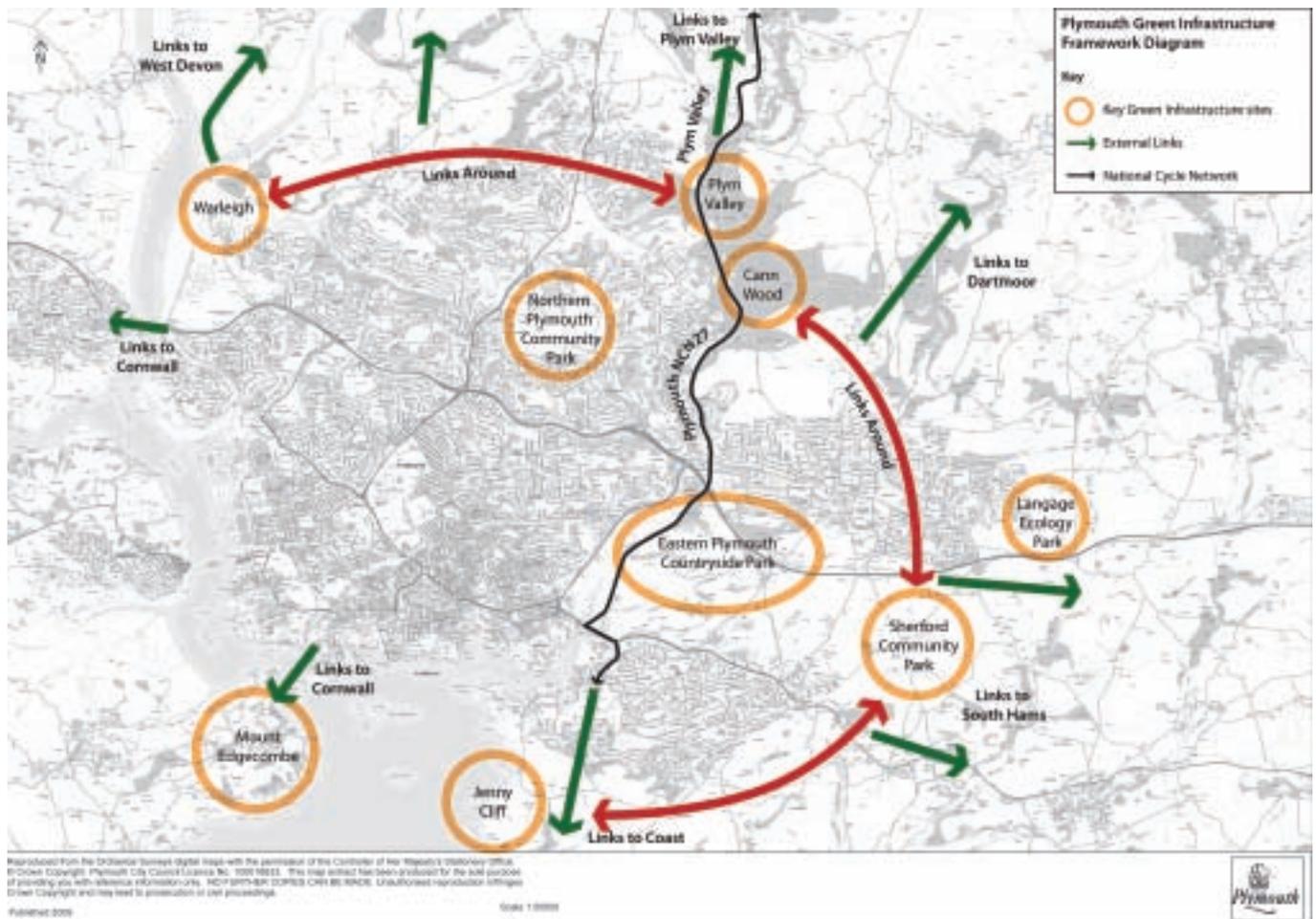


Figure 5 Plymouth Green Infrastructure Framework diagram



## Responses

Natural England is compiling strategic information about the quality and quantity of the region's Green Infrastructure. Resources include the South West Nature Map (see page 7), the Regional Land Use Map which shows agricultural holdings by farm type and the Regional Accessible Greenspace Map (Figure 4).

Natural England is working with many other partners to help develop a strategic approach to planning and managing Green Infrastructure throughout the region. We are a member of Strategic Partnerships for many of the region's Growth Points which are required to produce Green Infrastructure strategies. We also chair the Devon Green Infrastructure Group that is steering a Local Area Agreement target to deliver Green Infrastructure. Other counties are looking to emulate this approach.

The **Plymouth Green Infrastructure** project is a proactive response to the city's growth agenda. The project is demonstrating new ways of designing, delivering and managing Green Infrastructure, and facilitating cross boundary partnerships. Natural England is hosting the Green Infrastructure Project Officer and is developing, with key partners, innovative ways of working to ensure delivery of the project's objectives. The project will deliver a Green Infrastructure Plan that is strongly linked to the planning system; create new green spaces that meet the needs of the local communities and wildlife; test new ways of managing land into the future; and help Plymouth mitigate and adapt to the challenges of climate change. Figure 5 is a visual representation of the strategic work the plan will focus on showing existing and proposed green spaces and how they will be linked.

Engaging with the local community is key to understanding current use of local green space and how it might be improved to better serve people's needs. In the West of England sub-region Natural England has contributed funding and advice towards a Green Infrastructure demonstration project at the new development at Locking Castle in Weston-super-Mare. Proposed work includes gateway signing, interpretation and tree planting. Natural England has also supported the development of a Green Infrastructure Tool Kit – an interactive web-based map showing the extent and opportunities for improving Green Infrastructure – aimed at planners, builders and communities.

Around Bournemouth and Poole, Natural England has set up a Higher Level Stewardship agreement that has introduced grazing for the first time in recent history into these urban centres. This is helping to maintain the biodiversity of the urban heaths, as well as providing greater opportunities for the public to understand where their food comes from.

In Torbay, Natural England is working with partners to increase the accessibility of networks of open spaces, such as Berry Head National Nature Reserve, by increasing people's enjoyment and understanding of the natural environment. In Taunton, Natural England has been liaising with the Borough Council on the management of sites for lesser horseshoe bats, a European protected species. We are aiming to deliver Green Infrastructure within new developments that meets people's recreational needs and provides essential foraging areas for the bats.

## Challenges

Natural England believes that 40% of the area of our towns and cities should be Green Infrastructure. We will continue to advocate that Green Infrastructure is recognised as an essential element of all developments by developers and local authorities. We are also encouraging all stakeholders to become active members of the South West Green Infrastructure Network, sharing experiences and working to develop a regional vision and principles for Green Infrastructure.

We will continue to work with partners to ensure that housing, infrastructure and transport proposals are planned and developed within environmental limits, and that they fully integrate the conservation and enhancement of the natural environment. We will engage with local planning authorities to plan for and develop Green Infrastructure networks.

It is vital that the new Single Regional Strategy recognises the significance of multi-functional Green Infrastructure. We would like to see all counties and sub-regions provide a strategic approach to Green Infrastructure, tied into the planning system, ensuring engagement and join up of all the different sectors involved. Once that strategic approach is complete Natural England will seek to contribute to its delivery.

We will continue to work with partners to develop the regional Green Infrastructure evidence base. We need to increase our knowledge about the breadth of Green Infrastructure required to sustain our cities. How many people, for example, realise that land management on Dartmoor influences the quality of the drinking water supply of the people of the City of Plymouth?



## 2.4 Health and the environment

### Evidence

The environment in which we live profoundly affects our health and wellbeing. There is growing evidence of the physical and mental health and wellbeing benefits of contact with high quality natural environments. Physical activity in a natural outdoor setting has been termed 'green exercise'. It can include a range of pastimes such as walking, cycling, gardening and conservation projects. These have been shown to reduce stress, improve self-esteem and lower blood pressure more effectively than activity done elsewhere. People who exercise in these settings are also more likely to become advocates for the need to protect the natural environment.

The South West is a generally healthy region compared with other parts of the country. However, the regional figure masks sub-regional variation, including pockets of significant health deprivation in both urban and rural areas. The South West has a higher proportion of its population over the age of 50 than any other region in the country. Projections indicate that the number of residents in these groups will continue to grow. This has implications for health services in the region because, as a rule, older people are more prone to illness.

Like the rest of Britain, the South West faces an obesity epidemic. Tackling this is perhaps our most significant public health challenge. Obesity matters as it can have a severe impact on an individual's current and future health. Weight-related illness puts an enormous strain on families, the health service and society more broadly. Obesity levels in the South West have risen sharply in recent years. Currently, 21% of men and 19% of women in the region are classified as obese (Body Mass Index >30) as are almost 15 % of children aged between 2 and 15 years.

### Responses

The natural environment has a role to play in reversing the current trend in obesity. Natural England is working to promote green exercise as a preventative health solution in the South West. We have a number of pilot projects demonstrating innovative ways of introducing people to activity in the natural environment in order to improve their health.

The *3 Generation (3G) Woodland Games* project promotes the use of green space and woodland areas in and around Swindon and the Great Western Community Forest to improve the physical health and mental wellbeing of the local community. It is a partnership project funded by Natural England, Swindon Borough Council, Forestry Commission and the Community Forest.

The activities on offer include an outreach programme of woodcraft workshops, coaching sessions for 'non-traditional' outdoor sports and a healthy walks programme. The main target audiences are children and young people, in particular those with learning difficulties or at risk of exclusion from school, their families and the older generation. An annual 3G Woodland Games family day, held in a local woodland or green space, celebrates the natural environment and promotes the breadth of recreation opportunities available locally.

The **NHS Alliance project** in Cullompton, Devon is an initiative between Natural England and the Culm Valley Integrated Centre for Health to promote the use of the natural environment for therapy and treatment. The Centre offers traditional health and social care services alongside those provided by independent complementary practitioners. The Centre has appointed a health facilitator to work with patients who have sedentary lifestyles referred by their doctor to overcome perceived barriers to exercise. The facilitator encourages patients to become more active through setting individual exercise goals and identifying opportunities for physical activity in their local area, such as local walking schemes aimed at the less active.

Whilst many people are already effectively using coastal and inland waterways for recreation, some sectors of society perceive significant barriers to using these places. Working in partnership with the Peninsula Medical School, Natural England is piloting the *Blue Gym* project. This is promoting the safe and enjoyable use of the region's sea, rivers, and canals in order to increase levels of active participation. People are encouraged to get involved in a range of activities, such as conservation work, that both improves their own mental and physical health and enhances understanding of the South West's inland water and marine environments.



Tavistock Walk and Talk Group

The ***Walking the Way to Health Initiative*** (WHI) is a Department of Health-recognised scheme that has encouraged thousands of people in the region to walk outdoors for the benefit of their health. Natural England offers advice, information about training providers and insurance to the 76 local WHI groups in the South West. We award accreditation to groups that meet the required criteria. Monitoring of WHI is carried out through accredited walking groups that collect data using the Outdoor Health Questionnaire. It is hoped that our developing evidence base will demonstrate the efficacy of this activity in the natural environment to frontline health professionals. More information on WHI is available at [www.whi.org.uk](http://www.whi.org.uk)

### Challenges

A key challenge for Natural England is to share the results of the regional projects with partners. We want to get the use of the natural environment prescribed by doctors as a real alternative to conventional drug treatment, where appropriate, for a range of conditions such as mild depression. This requires more medically sound and consistent evidence rather than anecdotal accounts. We also want to see an expansion of healthy walking schemes in the region and have recently gained additional Department of Health financial support to achieve this. It is also vital that local authorities and others improve the quality and quantity of green space near where people live. We believe that if people and communities use the green space on their doorstep they will increasingly value the natural environment for its own sake and for the social interaction opportunities and health benefits it provides. We are committed to encouraging such engagement.

## 2.5 The uplands

### Evidence

The South West uplands are special landscapes where, for thousands of years, people have lived and worked, creating an intimate combination of open moorland and enclosed farmland. Dartmoor and Exmoor were designated National Parks in 1951 and 1954 respectively, while Bodmin Moor is part of the Cornwall Area of Outstanding Natural Beauty. The area of the three uplands combined is 182,800 hectares or 8% of the region.

The South West uplands contain distinctive habitats – blanket bog, heather moorland, western heath and valley mires. Over 42,800 ha of the South West uplands are notified as Sites of Special Scientific Interest (SSSIs). The region's upland habitats are prime sites for wildlife. They support significant populations of key bird and butterfly species. They contain all of southern Britain's breeding ring ouzel, dunlin and red grouse. The high brown

fritillary butterfly, whose UK range has declined by 94%, is confined in the region to three strongholds, including Dartmoor and Exmoor.

Rivers on the moors provide spawning grounds for salmon, a protected species under the European Habitats Directive. Salmon fishing in the South West is worth £2m to the local economy. Good fisheries for salmon as well as sea trout and brown trout depend heavily upon the high water quality of our upland rivers. Rivers flowing off the moors are also the source of 90% of drinking water provided to homes and businesses in Devon and Cornwall.

Public access onto the uplands provides places for people who seek both tranquillity and more active forms of recreation. In 2005 on Dartmoor alone, there were 4.3 million day visits. The spend from these trips makes a significant contribution to both the local and regional economy.



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The current landscape of the uplands is shaped to a large degree by its land use systems, predominantly livestock farming and to a lesser extent forestry. Common Agricultural Policy reforms are having major impacts on the profitability of farming on the moorland. As a consequence, livestock numbers, particularly of beef herds, have declined significantly in recent years, leading to reduced grazing in the uplands.

The fragility of the ecosystems of the uplands means that they are highly sensitive to environmental change. The implication of changing climatic conditions on the upland environment is an area where further research is needed. Impacts are likely to be complex. Higher mean annual temperatures and lower summer rainfall could adversely affect upland ecosystems and water supply, while greater intensity rainfall events could lead to more frequent localised flooding and higher rates of soil erosion.

### Responses

Natural England seeks to promote sustainable land use and management that secures the future of the upland environment. We are working with partners to develop initiatives that improve the condition of upland habitats and landscape while protecting the social fabric and historic environment of our uplands.

One focus of our work is to maximise the contribution the uplands can make to reducing the rate of future climate change. Enormous quantities of carbon are locked up in the peat soils of the South West uplands. Reducing oxidation and erosion of these soils will prevent the release of millions of tonnes of carbon dioxide into the atmosphere, while blanket bog restoration encourages new peat formation and future carbon storage.



Restoration dam on an Exmoor mire

Started in 1998, the **Exmoor Mire Restoration project** is restoring and re-wetting blanket bog damaged by agricultural drainage, peat cutting and moorland reclamation. Restoration work is taking place at twelve locations and repaired ditches are now becoming colonised by mire plants. In this way the moors are being stitched back together, removing the scars of old drainage ditches.

The project is managed by a dedicated project officer and there is a steering group comprised of representatives from the five main partners: Exmoor National Park Authority, Natural England, Environment Agency, South West Water plc and English Heritage.

A similar mire restoration project is being developed for Dartmoor.

More information is available at [www.exmoor-nationalpark.gov.uk/Mire](http://www.exmoor-nationalpark.gov.uk/Mire)



Marsh fritillary butterfly

The **Two Moors Butterfly project** is a partnership initiative addressing the decline of three key species on Dartmoor & Exmoor: the marsh fritillary, the heath fritillary and the high brown fritillary. Although their habitat requirements are different, these species all face similar pressures from changes in grazing regimes and agricultural improvement. Specialist habitat management advice has been provided to local landowners and training events have been arranged for contractors and conservation professionals. With agri-environment funding, habitat restoration work has taken place across 65 key sites for butterflies. Managing habitat for the fritillaries has also benefited other butterfly and moth species, as well as dormice and barn owls.

Together with partners, Natural England and Dartmoor National Park Authority have produced the *Dartmoor Vision*, a document which captures what organisations want the moorland areas of Dartmoor to look like in 2030. Following its publication an alliance of farmers and contributing organisations has continued to work closely to identify the solutions to deliver the Vision.

Natural England has also supported the South West Uplands Task Force convened to raise the profile of upland farming and the contribution it makes to public goods and services. The Task Force includes a range of statutory and non-statutory bodies, as well as landowner interests.

### Challenges

Changing land management practices in the uplands, particularly a decline in livestock grazing, threaten landscape character, wildlife habitats, flood risk management, carbon storage and opportunities for recreation. A key challenge for Natural England and its partners is to secure a sustainable land management system that both enables land managers to survive in the harsh conditions of the South West uplands and that delivers a healthy natural environment that can adapt to the impacts of climate change.

Nationally, Natural England is leading a consultation to guide the development of an approach that secures the future of our uplands. The principles and vision we have developed will stimulate debate and inform the decisions made today for tomorrow. We must ensure that our local stakeholders are involved in the consultation process so that issues pertinent to the South West are captured. We want regional decision makers to continue working with us on the upland futures debate in the South West.

A further challenge is to assess the value and raise awareness of the public goods and services that the uplands provide, both for local communities and the wider region. Improving the evidence base will allow us to determine, for instance, whether current funding packages give fair reward to land managers and livestock farmers for the part they play in delivering these public goods and services.

## 2.6 Climate change

### Evidence

The rate of climate change is accelerating as a consequence of human activities. We are locked into 50 years of irreversible climate change as a result of greenhouse gases already emitted into the atmosphere. This will affect everybody and has massive implications for the region's environment, society and economy.

In the South West the annual average maximum temperature has increased by 1.5°C in 45 years. By comparison, it took 20,000 years for the earth to warm by 5°C from the last ice age. In the last 40 years there has also been a 29% increase in autumn rainfall and a 9% decrease in summer rainfall in the region. We need to prepare for a South West that, by 2050, could be 3.5°C warmer and 30% drier in summer and 2°C warmer and 15% wetter in winter. Extreme weather events are also predicted to increase in frequency and intensity.

Climate change presents a range of both threats and opportunities to our natural environment. For example an expansion of arable farming may occur in response to longer growing seasons which could have a negative impact on wildlife, landscape character, buried archaeology and access. There may, however, be opportunities for new woodlands in floodplains to mitigate flooding and provide a source of renewable fuel. Climate change is a huge threat to the coastal areas of the South West. Average sea levels have risen by 125 mm since 1946. Future sea level rises of between 200 and 800 mm are predicted by the 2080s which will impact on coastal settlements as well as key infrastructure such as the main rail link at Dawlish. Many marine species are likely to move in response to rising sea temperature, which could impact on fisheries as well as general marine biodiversity. Rising acidity of oceans as a result of increased carbon dioxide absorption has huge implications for marine life such as oxygen producing plankton.

### Responses

Natural England is committed to developing and implementing a range of responses to help the natural environment adapt to climate change, while mitigating further greenhouse gas emissions.

Our climate change adaptation related work includes re-connecting wetland sites at Goss Moor National Nature Reserve to help the population of marsh fritillary butterflies become more resilient to extreme weather events. At Porlock Bay the natural breach of an artificially maintained shingle ridge in 1996 is now creating new saltmarsh with benefits to biodiversity, fisheries, nutrient recycling, and carbon storage. Monitoring of the ridge will advance our understanding of coastal processes as climate changes.

The peatlands of our region are hugely important, particularly for absorbing and locking up man-made carbon dioxide emissions. The *Exmoor Mire Restoration project* (see page 23) has successfully restored 200 ha of peatland since 1998. Our agri-environment funding is also encouraging landowners to lock in carbon and connect existing wildlife sites, while Catchment Sensitive Farming projects improve soil husbandry, reduce runoff, improve rain infiltration, and thereby reduce the risks of flash flooding.

A nationwide audit of greenhouse gas emissions on 200 farms in 2006/07 identified short and long term actions to reduce these emissions. This information is being used to help us improve the ability of six farms in the region to reduce energy use and to identify opportunities to lock up carbon to enable the farms to potentially benefit from emerging carbon markets.



Arable buffer strip on the Dorset Downs

As part of our **Adapting to Climate Change** project, Natural England has carried out a study to look at the likely impacts of climate change on the Dorset Downs and Cranborne Chase. By 2080 we expect the climate of the study area to resemble that of present day Portugal. For many this will be a pleasant image. The reality is likely to be increased risk of drought and associated water shortages, flooding, soil erosion and bushfires. This has contributed to debates in the region about how we respond to climate change and will help us and partners make well-informed decisions to maximise the opportunities and minimise the threats that climate change brings. More information is available at [www.naturalengland.org.uk/regions/south\\_west/ourwork](http://www.naturalengland.org.uk/regions/south_west/ourwork)

## Challenges

Climate change will affect everyone. The economic, social and environmental benefits of a low-carbon economy need to be brought into sharper focus if broad coalitions of support are to be established. This has been recognised in the first South West Climate Change Action Plan produced in September 2008, which outlines the challenges ahead and identifies actions for a range of partners including Natural England.

We want regional and local government to implement policies that increase the size and quality of habitat within the Strategic Nature Areas identified on the South West Nature Map. We call on the South West Regional Development Agency and Defra to provide funding to help achieve this goal.

In the region there are around 20,000 properties at risk from coastal erosion. Coastal flooding costs taxpayers £0.5 billion per year and could rise to £13.5 billion unless adaptive measures are put in place. We are working with a range of partners to produce Shoreline Management Plans which use natural processes as a response to sea level rise. We wish to create 100 ha of new habitat by managed realignment by 2010 and 1,000 ha by 2015.

70% of our drinking water comes from the uplands, but climate change threatens their ability to provide clean, ample drinking water in future. We want Ofwat to support our joint bid with South West Water to restore the region's peatlands.

An ambitious programme to cut emissions is essential and will need to include energy efficiency measures, the deployment of renewable technologies (onshore and offshore wind) and major shifts in personal behaviour. Practising what we preach, Natural England is reducing its carbon footprint from its own operations. We will halve our emissions between 2006 and 2011.

# Chapter 3

## Meeting the challenge in the South West

Natural England's challenge is to protect our landscapes, seascapes, urban green spaces and their biodiversity for present and future generations while allowing them to continue to meet the needs of residents, businesses and visitors.

The evidence presented in this report shows that our environment is under pressure. Our responses described in this report show that targeted action can make a difference.

But we need to do more, and we cannot do it alone. The economic downturn combined with climate change present huge challenges but there are also opportunities to take a different approach. A coordinated and long term response is needed to create a sustainable South West, in partnership with national, regional and local government, voluntary bodies, other agencies and local communities.

To protect our natural environment for its intrinsic value and to ensure that it continues to provide the range of ecosystem goods and services that are critical to our survival we will:

- continue to work with partners to ensure environmental stewardship resources are targeted at priority areas and habitats, whilst contributing to profitable, sustainable farm businesses, so that the region's biodiversity can be maintained and increased;
- do more to help people and nature be more resilient, as well as adapt, to climate change through promoting and delivering land management that locks-in carbon, soaks up excess rainwater to prevent flooding and connects existing wildlife sites;
- continue to work closely with the South West Regional Development Agency and the Forestry Commission on delivery of the Rural Development Plan for England;

- work with communities and the marine industries through the *Finding Sanctuary* project, to identify and establish a network of Marine Protected Areas. These will include newly designated Marine Conservation Zones and Marine Special Areas of Conservation;
- engage with partners, in particular local planning authorities and the South West Green Infrastructure Network Group, to ensure that the conservation and enhancement of the natural environment and people's wellbeing are fully integrated in housing, infrastructure and transport projects;

- promote the natural environment as a 'natural health service', working with health and local authorities to raise awareness of the physical and mental benefits of green exercise and contact with the natural environment;
- ensure our National Nature Reserves maximise the opportunities to connect people with the natural environment;
- maintain the region's National Trails as internationally recognised recreation routes and deliver new and improved opportunities to access the natural environment, drawing on the expertise and knowledge of local authorities and other partners;
- ensure our protected landscapes are well managed, distinctive and act as exemplars of integrated management for the wider countryside;
- work with land managers and other stakeholders to secure the future for our uplands through sustainable land management that delivers a range of essential public goods and services;
- and most importantly, we will work to persuade key decision-makers in the region to invest in a resilient natural environment that can adapt to climate change.

**Wildlife-rich land and seascapes are our planet's life support systems. They provide essential services but should also be valued for their own sake. By taking action together we can put the South West on a greener path to a more secure future.**

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Renewable energy on Kingsbridge Farm

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South West Coast Path near Salcombe  
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Natural England is here to conserve and enhance the natural environment, for its intrinsic value, the wellbeing and enjoyment of people and the economic prosperity that it brings.

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