

CORNWALL AONB ATLAS: COMPANION REPORT

A Report for
Cornwall AONB Partnership
Prepared by
Land Use Consultants

January 2010



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14 Great George Street
Bristol BS1 5RH
Tel: 01179 291 997
Fax: 01179 291 998
bristol@landuse.co.uk

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INTRODUCTION

This report contains a summary of the headline findings of an analysis of data contained in the Cornwall AONB Atlas, organised by the theme. It should be read in conjunction with the separate 'PDF pop-up' summary sheets provided as hyperlinks in the Atlas for each data layer.

The AONB Atlas is a web-based, interactive tool containing a wide range of mapped and quantitative data which will form an evidence base for the review of the current AONB Management Plan and will guide the other work of the AONB.

The Atlas was designed by Land Use Consultants as an extension to the AONB Landscape Monitoring Project which was completed in 2008.

Land Use Consultants

26 January 2010

I. BIODIVERSITY & GEODIVERSITY

HEADLINES FOR THIS THEME:

- a quarter of the AONB is nationally or internationally protected through nature conservation designations
- over half of SSSIs in Cornwall assessed as in 'favourable' condition are in the AONB
- less than 5% of SSSIs in the AONB are in declining condition
- Bodmin Moor has the greatest area of SSSI land in unfavourable condition
- acid grassland has increased in extent more than any other habitat between 1988 and 1995
- coniferous woodland has increased significantly over the same period, particularly on Bodmin Moor
- overall, semi-natural habitats are considered to be maintained in terms of area coverage

DESCRIPTION

Biodiversity

The diversity of the AONB's natural and semi-natural habitats ranges from moorland, lowland and coastal heath to wooded valleys, estuaries, grassland and the characteristic Cornish hedge. Moorland occurs on the higher granite masses, particularly on Bodmin Moor and parts of West Penwith, typified by unimproved heathland and acid grassland habitats of high nature conservation value. The spectacular coastline of cliffs, sand dunes, rocky shores and sandy beaches provide significant bird nesting sites of international importance.

Woodland cover is generally sparse across the landscape due to its exposed character, particularly in the west, although the slopes of the southern valleys are clothed in ancient woodland and parkland estates contributing to local character. Bodmin Moor includes large coniferous blocks which stand out boldly in the moorland scene. The AONB contains 23% of the total woodland county resource; 69% of which is broadleaved.

The AONB's importance for its biodiversity resource is reflected in the suite of designations that cover the landscape; in total, a quarter of the AONB is nationally or internationally protected through nature conservation designations. **This includes 544 Sites of Special Scientific Interest (SSSIs), 3 National Nature Reserves (NNRs) and 16 Special Areas of Conservation (SACs). Locally, there are 284 County Wildlife Sites, three Local Nature Reserves and parts of three Important Bird Areas within the AONB.**

Geodiversity

Cornwall has a varied and rich geological heritage. The unique geological history, world famous mining industry and quarrying for china clay, slate and granite, have shaped today's landscape. The oldest rocks are those found on the Lizard, where its unique association of rocks, including serpentine and schists, give rise to special plant assemblages. The granite formations are the basis for the distinctive moorland landscapes of Bodmin Moor, Carnmenellis and West Penwith, incorporating the highest points in the county. Much of the remainder of the area is comprised of softer rocks, killas and Culm measures supporting rich, deep soils long exploited for agriculture.

55 sites, covering some 1,144 hectares, are recognised as regionally important for their geology resource.

MEASURES OF CHANGE FOR THIS THEME

The process of SSSI reporting undertaken by Natural England is the main source of information currently available to indicate biodiversity condition. The latest information shows that **55% of SSSIs are in 'favourable' condition within the AONB**, which is the same as for the county as a whole. However, the data does show that **of the SSSIs in Cornwall assessed as favourable, 63% are found within the AONB.**

Looking at the data for SSSIs in the 'unfavourable' condition categories, **35% of sites within the AONB are assessed as in 'unfavourable recovering' condition.** Of those within this condition category across Cornwall, 71% are found within the AONB. **Those assessed as in 'unfavourable declining' condition account for just 4% of the total AONB resource.**

In spatial terms, **the section of the AONB which includes the greatest proportion of SSSI land in 'favourable' condition is Godrevy to Portreath**, with all 252 hectares of land in this condition category. Looking at the section with the largest land area in 'favourable condition', this is South Coast Western, with 3,338 hectares or 93% of its total SSSI land in this category. **Bodmin Moor has the greatest area of SSSI land in 'unfavourable condition' in the AONB, accounting for all of its designated land; 87%, or 4,091 hectares is assessed as 'unfavourable recovering'.** The other section with 100% of SSSI land in unfavourable condition is the Camel Estuary, with its SSSI land classed as being in 'unfavourable no change' condition. However, this amounts to less than 10 hectares.

Although SSSI reporting is a helpful way of gaining a 'snapshot' of habitat condition across the AONB, it obviously has its limitations in that it only applies to the designated sites which cover just 13% of the total land area. Cornwall does, however, benefit from recent Phase I habitat mapping (the Cornwall LIFE data) which through comparing dates, can give an indication of habitat gains and losses, but not condition. Between the years 1988 and 1995, the AONB data shows that in area terms, **the habitat which has seen the greatest gain has been acid grassland, increasing in coverage by some 335 hectares** (equating to a 5% increase) particularly concentrated on Bodmin Moor. **The other habitat which has experienced a noticeable increase is coniferous woodland, increasing by just under 90 hectares or 6%.** Again this trend has been concentrated on Bodmin Moor, which alone saw an 8% increase in the area of conifer plantation in the seven-year period. In landscape terms, other gains in habitat coverage have been insignificant (all less than 5%; with no location within the AONB standing out in terms of large gains in a particular habitat).

Considering habitat loss over the same period, the habitat in the AONB which has lost most in area terms is neutral grassland, experiencing a decline of just under 130 hectares, or 2%. Other habitats have decreased in extent; including fen, marsh and swamp and dwarf shrub heath, but **none have lost more than 1% of the original 1988 resource.** This suggests that, on the whole, the extent of semi-natural habitats across the AONB is being maintained.

DATA USED AS INDICATORS OF CONDITION / CHANGE

The main data sources used to understand trends under this Atlas theme are:

- Common Standards Monitoring for SSSIs (Natural England)
- Cornwall LIFE data (ERCCIS)

DATA GAPS

- Condition information on habitats outside the protected sites (SSSIs).
- Information on geology trends, although the SSSI monitoring programme will cover the geology interest of those deemed of national importance for this aspect.
- Information on habitat linkages.

2. COMMUNITY

HEADLINES FOR THIS THEME:

- employment in agriculture, farming and forestry is significantly higher in the AONB than the rest of the South West region
- the proportion of the AONB's population employed in the hotel and catering industry is three times the national average
- the retail sector is the most dominant employment industry in the AONB
- average house prices and the number of house sales peaked significantly in 2006
- the highest house prices are often found in parts of the AONB classed as below the national rate of deprivation
- the AONB has nearly twice the national average of housing owned outright
- the proportion of the AONB's population below the age of 30 is lower than the regional and national averages
- a quarter of the AONB's population is in the 45-59 age bracket
- nearly all of the AONB's population is White British and of English origin.

DESCRIPTION

The relative isolation of the people of Cornwall from London and the large cities has meant specific expressions of local culture - food, festivals, the Cornish language - survive and reinforce the identity of Cornwall as a distinctive place. Today, approximately 43 festivals a year celebrate the culture and heritage of the area.

Agriculture, fishing and mineral extraction were the dominant forces in an economy that has shaped the Cornish landscape: industries which provide a common link between many of the communities.

MEASURES OF CHANGE

The 2001 census data shows that, apart from mineral extraction, the area's traditional industries are more significant in the AONB than the South West region as a whole; **agriculture, farming and forestry employ 8% of the population (compared with 2.5% in the region)**, although fishing has declined in significance, now accounting for less than 1% of the population's employment. The accelerating importance of the AONB as a tourism destination is reflected in the proportion of the population employed by the hotel and catering industry – 12% - twice the regional rate and three times the national rate of employment in this sector. However, the census information also shows that **the retail sector is now the most dominant industry, providing employment for 15% of the AONB's population.**

The growing popularity of Cornwall as a destination to re-locate, work and retire to has seen a rapid increase in house prices and house sales, particularly in the years leading up to the recent economic downturn. **2006 alone saw a 43% increase in the total number of house sales from the previous year, along with a 9% rise in average house prices.** The highest house prices of the settlements selected for the Atlas are found in Porthcothan (£499,109), Mawnan

(£353,552) and Polruan (£365,037). The settlement with the lowest house prices out of the selection is St Just in West Penwith, averaging £209,675 in 2008.

Housing affordability for local communities is a key issue in the AONB – **Porthcothan and Mawnan – the two settlements with the highest average house prices, are located in parts of the AONB which are below the 40th percentile of deprivation** according to the Index of Multiple Deprivation. Added to the issue of affordability is the availability of homes, particularly for young people or those on lower incomes, who would be more likely to rent rather than own their own home. **The AONB has a significantly higher proportion of properties that are owned outright; 48% compared to a national average of 29%.** The percentage of households currently renting - privately, through a Housing Association or from the local authority, currently stands at 21% (8% combined for Housing Association / Local Authority; the rest privately). This broad pattern is repeated across the different parts of the AONB.

Housing affordability and availability, along with the popularity of the area for retirement and re-location inevitably influence the age structure of the AONB's population. **The proportion of people below the age of 30 is lower than the regional and national averages;** whilst there is a peak in the proportion of the population in the 45-59 age bracket (25%), higher than the South West or England averages. **All of the age brackets above 45-59 are also higher than the regional and national pictures, with a significant peak at the 65-74 age range,** accounting for 12% of the AONB's population. This pattern is reflected across the different sections of the AONB.

The ethnic makeup of the AONB, and the origin of its residents, is very striking – **97% of the population is White British** (compared with a national average of 87%) and **93% were born in England,** compared with an English average of 87%.

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Census data (Office for National Statistics) – the next census will take place in 2011. Updated information will provide an invaluable picture of AONB communities including how things have changed since 2001. The information in the Atlas provides a baseline for future comparison.
- Annual house price / house sale information (Cornwall County Council/Unitary Authority).
- The Index of Multiple Deprivation – the information in the Atlas is from 2007; future updates will provide a helpful comparison with this baseline.

DATA GAPS

- AONB information on average household income.

3. FARMING AND FORESTRY

HEADLINES FOR THIS THEME:

- the AONB contains a over half of Cornwall's rough grazing and pasture land and a proportionally greater area (nearly 12% more) than the county as a whole
- horticultural crops, bulbs and flowers are locally significant in the west of the AONB
- the AONB contains nearly a quarter of the county's Environmental Stewardship agreements but has a 4% lower take-up rate than the county as a whole
- ELS is by the far the most popular scheme under Environmental Stewardship, with the area of coverage proportionally greatest in the Pentire Point to Widemouth section
- nearly half of the county's Countryside Stewardship agreements are within the AONB with a 10% higher take-up rate than for the county as a whole
- nearly half of Cornwall's total area of woodland managed under the English Woodland Grant Scheme is within the AONB

DESCRIPTION

Cornwall AONB's landscape has been shaped by many centuries of farming and woodland management, contributing greatly to local distinctiveness. From the vast open moorland landscape of Bodmin Moor, traditionally grazed by commoners' livestock, to the tiny vegetable and bulb plots on the southern slopes of West Penwith, agriculture is key to landscape character. Woodland planting and management also greatly influences the character of the landscape – conifer plantations introduced in the 20th century are conspicuous features of parts of the AONB, particularly on Bodmin Moor and the Lizard, whilst ornamental estate woodlands line the valleys of the South Coast, contributing to their intimate, sheltered character. The exposed northern and western coastlines are defined by their lack of woodland cover; with trees only found in windswept Cornish hedges marking the boundaries of fields.

MEASURES OF CHANGE

Defra's June Agricultural Survey provides a helpful snapshot of agricultural land use across the AONB. Information from the 2007 survey shows that **the AONB as a whole contains 60% of Cornwall's rough grazing land, as well as over a third of its permanent pasture resource. Looking proportionally, 51% of the AONB's land area is permanent pasture, compared with 44% for the county as a whole. For rough grazing land, 7.5% of the AONB comprises this land use compared with 3% for Cornwall, showing that the AONB is generally of a more pastoral character than the rest of the county.** Over a quarter of crops grown for stock feed in the county are found in the AONB, supporting the livestock industry. **Horticultural crops, bulbs and flowers are locally significant in the west of the AONB, accounting for 32% of the total land in Cornwall under this land use.** However, this only accounts for less than 1% of the AONB's land area, compared with 1.5% for the county as a whole. Comparing survey data over time will be an extremely helpful indicator of agricultural landscape change, particularly in light of future market forces and the impacts of a changing climate on crop types grown in the AONB.

The levels of take-up for agricultural and woodland grant support schemes give an indication of how much land is being managed to achieve environmental benefits. The AONB's take-up of Environmental Stewardship accounts for 23% of all agreements in the county. **Looking**

proportionally, Stewardship agreements cover 32% of the AONB's total land area, compared with a county-wide figure of 36%. This shows that the AONB is currently slightly under-performing in terms of the take up of Environmental Stewardship.

Higher Level Stewardship agreements in the AONB contribute to 24% of the county total, although these cover less than 1% of the total land area in the AONB under Environmental Stewardship. This is, however, comparable with the county-wide proportion.

ELS is by far the most common scheme, covering 76% of the land area of the AONB under ES (the county comparison is 83% which again echoes lower levels of take-up in the AONB). In terms of spatial coverage, **Pentire Point to Widemouth has the greatest ELS coverage at 39% of its total land area, with the least coverage being found within St Agnes (5%).**

The previous agri-environment schemes, Countryside Stewardship (CSS) and Environmentally Sensitive Areas (ESA), are still valid where 10-year agreements still have time to run. **49% of the county's coverage of CSS is located within the AONB, whilst Cornwall's only ESA scheme is found in West Penwith.**

Looking proportionally, the take-up of CSS covers 24% of the total land area of the AONB, which is 10% higher than take-up levels for the county as a whole. Because some CSS agreements still have time to run, this may explain why levels of take-up for Environmental Stewardship in the AONB are currently proportionally lower than for the county. Once the old schemes have completely expired, it will be interesting for the AONB to again compare levels of take-up under Environmental Stewardship.

The English Woodland Grant Scheme can similarly be used as a proxy for identifying areas of woodland under favourable management. **37% of Cornwall's EWGS agreements relate to woodlands within the AONB which, in area terms, account for 47% of the county's woodlands supported through the scheme.**

DATA USED AS INDICATORS OF CONDITION / CHANGE

- June Agricultural Survey – annual data that can be used to paint a picture of agricultural landscape character and change over time (Defra).
- Agri-environment scheme uptake data – information on coverage can be used to infer the amount of land being managed for environmental benefits. Comparison with previous scheme coverage (CSS, ESA) could be used to assess the success of the new schemes in the AONB (Defra).
- Woodland Grant Scheme uptake data – this can be used as a proxy for identifying the area of woodland under favourable management (Forestry Commission).

DATA GAPS

- Historic information from Defra's June Agricultural Census to allow backcasting of trends in land use.

4. RESOURCE QUALITY

HEADLINES FOR THIS THEME:

- the AONB has a proportionally longer length of minor and secondary rivers than the county as a whole, and contains 24% of the county's secondary rivers at their source
- the total number of pollution incidences has declined since 2002
- major pollution incidences have taken place in Bodmin Moor and South Coast Western in the last seven years
- the majority of the AONB's beaches are reaching the highest standard for bathing water quality; a massive improvement from the late 1980s
- land surrounding the Fal in the South Coast Central AONB section is deemed most sensitive to diffuse water pollution from agriculture

DESCRIPTION

The Cornwall AONB's coast and river systems are key features of the protected landscape. The northern coastline is rugged, exposed and windswept, with steep cliffs providing a backdrop to huge sweeping sandy beaches exposed at low water, often backed by dramatic sand dune systems. By contrast, the south coast is more sheltered with numerous small sandy coves huddled between cliff promontories and more major headlands.

The drainage of the landscape also varies - on the north coast short, deeply-etched valleys cut through to the sea, often with streams spilling over the cliffs as waterfalls. Conversely, along the south coast, the slow geological sinking of the coastline has resulted in a landscape of drowned valleys (rias) with wide estuaries and 'inland seas' set within woodland-clad valley sides. The high granite plateau areas of Bodmin Moor and West Penwith are deeply cut by streams; on the edge of Bodmin they form scenic cascades and gorges. The AONB also contains a number of man-made reservoirs supplying water to local communities.

The AONB contains a total length of 308 kilometres of minor and secondary rivers (20% of the county's total length of rivers). 87% of the AONB's rivers are classed as 'minor' compared with 82% for the county as a whole, and the AONB contains no length of 'main' rivers. 12% of the AONB's rivers are at their source, compared with 10% for the county as a whole. The protected landscape contains 24% of the total length of secondary rivers at their source in Cornwall (based on the national Environment Agency classification)

MEASURES OF CHANGE

The Environment Agency monitors polluting incidents impacting on watercourses. In the AONB, 2006 data shows that **there were a total of 47 pollution incidences** classed as having an impact. This is a reduction of 14 from similar reported incidences in 2002. However, this was up slightly from a low of 43 incidences recorded in 2004.

Between the years 2002 and 2006, the AONB section with the greatest number of pollution incidences was South Coast Eastern, with 18 minor incidences occurring in 2002 alone. **In terms of 'major' pollution incidences, Bodmin Moor has been the location of two (one in each of the years 2005 and 2006), as has South Coast Western, in 2002 and 2004.** The

latest data from 2006 shows that West Penwith experienced a total of 12 minor incidents – significantly higher than the other sections of the AONB.

The Environment Agency also monitors the quality of bathing waters off the coast, with the Atlas including results for specific beaches from 1988 to 2003. Beaches consistently falling below the highest standard in the 1990s, either being assessed as ‘imperative’ or ‘fail’, included Porthallow (South Coast Western), Gorran Haven - Little Perhaver (South Coast Central), Readymoney (South Coast Eastern) and Trevone Head (Trevose Head to Stepper Point).

Data for the AONB as a whole up to 2007 shows that in 2006, a high of 97% of beaches met the guideline; reducing to 92% in 2007. **All of the AONB’s beaches, however, passed for the years from 2001**, showing that bathing water quality has significantly improved from 1988 when none of the AONB’s beaches met the guideline standard.

Diffuse pollution from agriculture has a key impact on water quality. **The AONB contains six Nitrate Vulnerable Zones (NVZs)**; areas which are particularly at risk from nitrate pollution sourced from the application of livestock manures. **A quarter of the county’s NVZs contain land within the AONB**, with the largest Zone being in the South Coast Central section, covering 9,352 hectares (59%) around the Fal.

In addition to NVZs, the England Catchment Sensitive Farming Delivery Initiative encourages improvements to farming practices to reduce water pollution from agriculture. **Three target areas have been identified in Cornwall, with 20% falling within the AONB.** These areas are the River Camel Valley Tributaries, the Tamar-Tavy Estuary (both with coverage in Bodmin Moor and Pentire Point to Widemouth) and West Cornwall Catchments, covering West Penwith, South Coast Western and South Coast Central. Again, the AONB section with the largest coverage is South Coast Central, with the target area covering 91% of the total land area.

This shows that in terms of area, the land surrounding the Fal ria is deemed as the most susceptible to diffuse pollution from agriculture in the AONB.

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Environment Agency reporting on pollution incidents.
- Environment Agency results on bathing water quality.
- Coverage of NVZs and Catchment Sensitive Farming Areas (Defra)

DATA GAPS

- Beach-specific bathing water quality data beyond 2003.

5. HISTORIC ENVIRONMENT

HEADLINES FOR THIS THEME:

- the AONB contains a significantly higher concentration of Scheduled Monuments than the county as a whole
- over a third of Cornwall's Conservation Areas are in the AONB
- over a quarter of Cornwall's Listed Buildings are found in the AONB
- less than a tenth of Cornwall's Scheduled Monuments are classified as 'At Risk'
- only one Listed Building in the AONB is classified as 'At Risk' (on Bodmin Moor)
- none of the AONB's parklands are classified as 'At Risk'
- in general, the condition of historic and archaeological features within the AONB is stable

DESCRIPTION

The AONB is extremely rich in historic and archaeological features, reflecting the result of several millennia of constant abandonment, adaptation and change. Early activity is depicted in the survival of ancient Bronze Age settlement remains, stone circles and standing stones, Iron Age cliff castles and prehistoric field patterns. The fields, roads, settlements, fishing villages and the monuments to past industry add further layers to the landscape which in turn demonstrates a rich time-depth.

West Penwith is particularly valued for its surviving prehistoric pattern of fields and settlements built from solid granite. The great mining areas are evidence of episodes of prosperous economic opportunity in the 19th and early 20th centuries; their international significance today reflected in World Heritage Site status. Buildings and structures add another layer of history and local detail to the landscape. Churches and chapels, historic parklands, lighthouses, holy wells, bridges, mine buildings, crosses, waymarks, Cornish hedges and stone stiles all combine to form an outstanding historic landscape.

The value of the AONB's historic environment is reflected in a number of designations, not least the presence of 781 Scheduled Monuments. The area covered by Scheduled Monuments accounts for 69% of the county resource and covers a proportionally greater land area (1.2% compared to 0.5%).

The AONB's parkland landscapes include 16 registered with English Heritage, the majority being Grade II listed.

The important built heritage of the landscape incorporates 52 Conservation Areas (36% of the county total) and 3,237 Listed Buildings (26%).

Bodmin Moor has the greatest concentration of Scheduled Monuments in the AONB, totalling 345. This is followed by West Penwith, containing a total of 180. The Camel Estuary AONB Section, as one of the smallest areas of the AONB, has the least with just two Scheduled Monuments. Looking at the distribution of Listed Buildings across the AONB, the greatest number is found within the South Coast Central section (708), followed by South Coast Western (613) and West Penwith (523). The majority of buildings are listed as Grade II. The Godrevey to Portreath AONB section has the least, with just six, although it is a small and sparsely populated part of the protected landscape.

MEASURES OF CHANGE FOR THIS THEME

English Heritage has recently launched a new 'Heritage at Risk' register with information provided for Listed Buildings, Scheduled Monuments and Parks and Gardens for the Unitary Authority as a whole. This shows the following:

- **Scheduled Monuments: 208 are classified as 'At Risk' (13% of the total resource)**
- **Listed Buildings: 20 are classified as 'At Risk' (one is within the Bodmin Moor section of the AONB; the rest fall outside). Those 'At Risk' account for less than 1% of the total county resource.**
- **Parks and Gardens: One is classified as 'At Risk' – but this is located outside the AONB.**

Information downloaded on 14 September 2009.

This information generally indicates that the historic environment in Cornwall is stable in terms of condition – with a low proportion of features currently classified as 'At Risk'. For Listed Buildings and Parks and Gardens, for which AONB-specific information is able to be pulled out from the register, this indicates that **historic features within the AONB are stable**.

DATA USED AS INDICATORS OF CONDITION / CHANGE

The Atlas currently only contains baseline information displaying the presence of historic features across the AONB. Future indicators to monitor condition / change will be:

- Heritage at Risk information – numbers of features in the AONB classed as 'At Risk'. Information on Scheduled Monuments is not currently available for the AONB specifically. (English Heritage)
- Change in the total number of Scheduled Monuments, Listed Buildings and Registered Parks and Gardens found across the AONB. (English Heritage)
- Change in the number of Listed Buildings and Registered Parks and Gardens in different Grades. (English Heritage)

DATA GAPS

- AONB-specific information on Scheduled Monuments from the 'Heritage at Risk' register. Currently this is presented for the Unitary Authority as a whole.
- Monitoring information for the Cornwall and West Devon Mining World Heritage Site could help provide information on the condition of designated areas falling within the AONB.

6. TRANSPORT, ACCESS AND RIGHTS OF WAY

HEADLINES FOR THIS THEME:

- a significant proportion of Cornwall's rights of way are in the AONB
- the majority of the South West Coast Path passes through the AONB's coastline
- the majority of Cornwall's stock of open access land falls within the AONB and covers a greater proportion of total land area than the county as a whole
- a significant proportion of the AONB's rights of way are classified as 'gold' in Cornwall Council's Public Paths Improvement Programme
- all of the main traffic routes in the AONB experience an increase in traffic during the summer months
- the roads with the greatest increase in summer traffic are found in the north of the AONB
- extra bus services in the summer months do not generally correspond to increases in road traffic

DESCRIPTION

The AONB benefits from a strong network of public rights of way, open access land and the South Coast Path which runs the length of the coastline – all providing opportunities for public enjoyment of and access to the landscape. **Over a third of Cornwall's total length of rights of way fall within the AONB (86% of which are footpaths), whilst over 70% of the South Coast Path's route across the Cornish coast passes through the protected landscape.** Areas of open access land are also found along sections of coast and tracts of heathland on Bodmin Moor, West Penwith and the Lizard, providing additional unrestricted access to walkers. **75% of Cornwall's open access land falls within the AONB. This is proportionally greater than the county as a whole in terms of coverage – 17% of the AONB's total land area is open access land compared with 6% for Cornwall county.**

The AONB's road network is characterised by a maze of minor roads, lanes and trackways, often bounded by high stone-faced Cornish hedges. However, the main A30 dissects Bodmin Moor and West Penwith, and other main routes crossing through the AONB include the A389 which skirts the Camel Estuary, the A3083 which passes through the Lizard, the A3078 to St Mawes and the A3082 to Fowey. The south coast also includes ferries to provide transport links between the banks of the Fowey and Fal estuaries, which are characterful features of this part of the AONB. Lighthouses and navigation marks dotted along the coast provide a guide to sea traffic and reinforce the landscape's strong maritime heritage.

MEASURES OF CHANGE

Cornwall Council has established a classification system for rights of way to provide a hierarchy of maintenance needs under their Public Path Improvement Programme (PPIP). **This classification shows that nearly half of all routes are in the 'Gold' category (assigned to the most popular and accessible routes), whilst only 5% are in the lower priority 'Bronze' category, where long-term improvements are required.** Just under a quarter of the South Coast Path is classified as 'Gold'.

Traffic levels on the AONB's roads are monitored by the local authority. Because of the area's popularity as a summer tourism destination, figures are provided for selected roads in the Atlas

showing the increase in traffic flow on key routes during the summer months, compared with the off-peak period. These figures show that, **in 2008, all of the roads experienced an increase in traffic, most of at least 40% from off-peak levels.** The roads with the greatest increases include the A389 / A39 which skirts the Camel Estuary (98% increase); the B3276 Padstow to Bedruthen road with a 128% increase (cutting through the Trevoise Head to Stepper Point section); the B3006 St Just to St Ives road with a 86% increase (passing through the West Penwith AONB section); and the minor Stibb to Combe Road with a 125% increase, which passes through the Hartland section to link with the A39 near Kilkhampton. Interestingly, all of these roads are on the northern side of the AONB. Trends in summer increases on the AONB's roads are broadly consistent in the years 2004 and 2008 for which data is available.

It is interesting to look at how the increased popularity of the above routes in the summer affects the number of extra bus services provided to respond to demand. This information is only available for 2004 and for selected routes. The A389 / A39, which experienced an 84% increase in summer traffic in 2004, had no extra weekday bus services in this peak period. The B3276, which had the largest increase in peak traffic flow in 2004 at 148%, had one extra bus service provided during weekdays in the summer, making a total of four services a day. The B3006, with an 86% increase, received 15 extra weekday services, totalling 36 per day. **The information shows that although traffic flows increased across all routes in the AONB, over 50% (10 out of the 19 routes) did not receive any extra bus services** to reduce pressure from summer road traffic. It would be helpful to look at whether this picture has changed since 2004.

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Maintenance hierarchy of rights of way; lengths of routes in each category (Cornwall Council).
- Off-peak and summer traffic flows on key routes in the AONB (Cornwall County Council / Unitary Authority).
- Bus service provision on key routes (Cornwall County Council / Unitary Authority).

DATA GAPS

- Up-to-date information (after 2004) on summer versus winter bus service provision.
- Information on the condition of rights of way

7. CLIMATE

HEADLINES FOR THIS THEME:

- the AONB has a mild climate strongly influenced by the sea, the Gulf Stream and regular weather fronts from the Atlantic
- average annual temperatures are generally uniform across the landscape, whilst precipitation levels and sunshine hours vary
- the south coast is most at risk from flooding from future sea level rise, including as a result of climate change

DESCRIPTION

Cornwall, and the AONB in particular, is for the most part is surrounded by sea, which exerts a marked influence on its weather and climate. Located on the eastern edge of the Gulf Stream, this means that winter temperatures are generally higher than would be expected for the latitude of the landscape. In summer, however, the sea has a moderating effect on the highest temperatures.

During the winter the temperature rarely falls below freezing (0°C) and in summer, although the mean maximum is around 19°C, the daytime maximum often reaches 21°C and occasionally 30°C. The county is subjected to a regular procession of weather fronts that move east across the Atlantic and the UK. In summer these fronts are generally less frequent, taking a more northerly track and are much weaker, so the rain is often derived from thunderstorms generated over France and drifting north across southern England, usually during the evening and overnight.

Cornwall can expect well over 1500 hours of sunshine annually and, whilst May is usually the sunniest month, May to July average around 7 hours of sunshine a day.

The impacts of climate change, including sea level rise, increased frequency of drought conditions and storm events are likely to have significant impacts on the landscapes of the AONB. Efforts to adapt to and mitigate against the impacts of a changing climate will include changes to agricultural practices (including potentially new crop types, as well as energy crops); landscape-scale approaches to flood alleviation, including managed realignment and wetland recreation, as well as an ever-increasing demand for renewable energy development, both on- and off-shore (including wind turbines and tidal).

MEASURES OF CHANGE

There are five weather stations located in close proximity to the AONB. Average temperatures, precipitation and numbers of sunshine hours are provided in the Atlas for each station, calculated from data collected from as far back as 1977. Unfortunately, separate figures for each year were not available, but this is something the AONB should seek to collect to understand any key changes over time.

The information shows that **St Mawgan and Penzance have the highest average number of sunshine hours across the year, and Bude has the least. For precipitation, Cardinham has recorded the highest average maximum rainfall, and Culdrose and Bude the least.** Average temperatures are similar across all weather stations.

The impacts of climate change are likely to include sea level rise and changes in the frequency of flood events. The Environment Agency has developed a national model to predict the areas at risk

from fluvial and tidal flooding, showing that **just under 4% of the AONB's land area is predicted to be at risk, mainly from fluvial (river) flooding**. There is a relatively even split of areas at medium risk of fluvial flooding (Zone 2) and those at high risk (Zone 3).

The Atlas contains a detailed report of the potential impacts of future sea level rise on the AONB, based on research conducted by Cornwall County Council in 2008. This includes an analysis of the Environment Agency's data on fluvial flooding, showing that **St Michael's Mount, within the South Coast Western section, is currently at the highest risk of tidal flooding**. The data shows that nearly 16% of the area surrounding St Michael's Mount, above Mean High Water Springs Level, is at high risk of flooding from the sea.

Looking over the next 100 years, the data shows that, in terms of total land area likely to be affected by flooding from the sea, **the South Coast Western section is again likely to be most affected, followed by South Coast Central and the Camel Estuary**. The area of land predicted to be affected increases significantly and incrementally over the 2028-2108 period for each AONB section.

The report also contains predictions relating to more catastrophic flood events linked to the potential (yet unproven) melting of the major Greenland and West Antarctic ice sheets over the next 1,000 years. Such extreme events would undoubtedly have a major impact on the AONB due to a potential sea level rise of up to 13 metres. All of the AONB, apart from Bodmin Moor, would have land at high risk of flooding, with the south coast again containing the largest potential area of affected land (over 1,100 hectares in the South Coast Central section alone).

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Weather station information on average precipitation, temperature and sunshine hours (Met Office).
- Environment Agency / Cornwall County Council models of flood risk and sea level rise.

DATA GAPS

- Historic weather station information (by individual year) on average precipitation, temperature and sunshine hours. Data from future years could also be used to compare back with the historic data to bring out trends over time.
- Spatial information on fluvial flood predictions from the Environment Agency (license restrictions meant this could not be presented in the Atlas).

8. DEVELOPMENT

HEADLINES FOR THIS THEME:

- the AONB contains some of the most tranquil locations in Cornwall
- urban development and main roads are the main detractors from tranquillity
- the most 'disturbed' part of the AONB is the Camel Estuary, whilst the most 'undisturbed' section is Hartland
- there has been an overall reduction in dark night skies across the AONB since 1990

DESCRIPTION

The AONB's fishing villages, scattered farmsteads and hamlets of granite and slate, often with whitewashed walls, are integral to the character of the landscape. Development pressure within and on the edge of the AONB is significant; including as a result of demand for affordable housing as well as demands for infrastructure and further housing owing to the area's attraction as a retirement and holiday destination.

MEASURES OF CHANGE

CPRE's tranquillity, intrusion and night blight mapping provides a helpful 'snapshot' of the impacts of development on the AONB landscape. **The tranquillity mapping (2007) clearly shows that the AONB contains some of the most tranquil locations in Cornwall**, with the least tranquil areas associated with main roads and settlements such as St Just in West Penwith, Fowey in South Coast Eastern, and the A30 and A3083, dissecting Bodmin Moor and South Coast Western respectively.

Intrusion mapping gives more specific information on the sources of noise and visual intrusions impacting on the landscape. In the AONB, the main areas of 'disturbed' land are associated with the main roads and the edges of urban centres, often those abutting the boundary of the AONB. **Sections with the most 'disturbed' land as a proportion of their total land area are the Camel Estuary (41%), particularly associated with development at Wadebridge; St Agnes, associated with development at Perranporth and St Agnes; and West Penwith, particularly around St Just and the Land's End complex. The section with the least disturbed land (0.1%) is Hartland, despite the close proximity of Bude.** Comparing the mapping for the 1990s and 2007 clearly shows the expansion of urban centres (including outside the AONB) and increase in noise/visual intrusion from the road network impacting on parts of the AONBs. An increase in disturbance from urban centres over this time period is particularly noticeable at St Agnes and Perranporth (St Agnes), St Just and the Land's End complex (West Penwith) and Twardreath (South Coast Eastern) – the latter settlement is outside the AONB but impacts of its nearby development are felt within the boundary of this AONB section.

Mapping of light pollution also gives a helpful illustration of the impacts of built development on the AONB landscape. It shows that **the sections of the AONB with the least light pollution (and therefore darkest night skies) are Bodmin Moor, Pentire Point to Widemouth, areas of the West Penwith coast, parts of South Coast Western and Veryan Bay in the South Coast Central section.** Comparing back with mapping from 1993 shows a general reduction in dark night skies across the whole AONB.

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Tranquillity, intrusion and night blight mapping (CPRE).

DATA GAPS

- Information on number of houses built in the AONB (particularly affordable homes) – any historic data would enable trends to be picked out over time.
- Other information on development, including renewable energy schemes (e.g. number of approved planning applications).

9. ECONOMY

HEADLINES FOR THIS THEME:

- nearly half of Cornwall's fishing industry employees are based in the AONB, and over half of vessels are located in ports within the protected landscape
- there has been a significant increase in average farm incomes in the county since 2005
- numbers employed in farming in the AONB have decreased since 2004, whilst the proportion of part-time farm labour has increased
- tourism spend in Cornwall more than doubled between 1992 and 2002 to a peak of £1.4 billion, reducing to £1.1 billion in 2007
- a significant proportion of businesses awarded 'Gold' in the Green Tourism Business Scheme are located within the AONB

DESCRIPTION

The economy of the AONB has historically been focused on the traditional industries of farming, fishing and tin / copper / china clay mining (see also under the 'Community' theme). Tourism is fast accelerating as a major driver of the local economy, linked to the high environmental quality of the protected landscape, which, in turn, relies on sensitive land management to conserve and enhance its natural assets. The continuation of traditional industries, particularly fishing, and the celebration of past economic activity, including through the Mining World Heritage Site designation, support and stimulate the tourism-driven economy.

MEASURES OF CHANGE

The traditional industries of fishing and farming still contribute to the AONB's economy. **The numbers of people employed in the fishing industry in the AONB account for 45% of the county total, with 53% of commercial vessels being located in ports within the AONB.** Statistics on income generated from farming businesses in Cornwall show that **there has been a 60% increase in average net farm income from 2005/6 to 2006/7** and a 55% increase between 2006/7 and 2007/8. **Average farm incomes have increased from a low of £11,500 in 2004/5 to £25,300 in 2007/8 (a 120% increase).** Conversely, when looking at the numbers of people employed in farming, this has shown a general decline since 2004 across the AONB, with **a move towards more part-time managers and employees involved in running the farms.**

Figures on tourism spend in Cornwall and the Isles of Scilly between 1992 and 2007 show a clear and rapid **peak in expenditure in 2002 to £1.4 billion from £0.6 billion in 1992**, followed by a gentle decline since, to a 2007 figure of just over £1.1 billion. These figures clearly reflect the fast rate of growth of the tourism sector as an economic driver in the county over recent years.

Capitilising on the links between the area's popularity for tourism and the environment, the Green Tourism Business Scheme has 175 members in Cornwall, with 35 (20%) of these found in the AONB. **Nearly a quarter of accredited businesses in Cornwall that have received the 'Gold' award are located within the protected landscape.**

DATA USED AS INDICATORS OF CONDITION / CHANGE

- Numbers of vessels and people employed in the fishing industry – future data will enable trends to be picked out over time (Cornwall County Council/Unitary Authority).
- Farm income levels - – future information could be used to compare back to the 2007/8 figures (Defra).
- Farm labour numbers - future information could be used to compare back to the 2007 figures (Defra).
- Green Tourism Business Award Scheme data – future information could also allow for trends to be picked out over time.
- Tourism spend – future information could be used to compare back to the 2007 figures (Visit Cornwall).
- National Trust visitor numbers – future figures could be used to compare against the 2008 baseline as a proxy for the AONB's popularity as a visitor destination.

DATA GAPS

- Historic information on fishing activity (employees and numbers of vessels) to allow backcasting to show trends over time.

