

## Contents

<b>1 SOIL, AIR AND WATER QUALITY</b>	<b>1</b>
<b>1.1 Summary</b>	1
<b>1.2 Purpose</b>	1
<b>1.3 What is soil, air and water quality?</b>	2
<b>1.4 Soil, air and water quality ‘portrait’ of Cornwall</b>	3
<b>1.5 What is the role of the Core Strategy?</b>	4
<b>1.6 Relevant policy context</b>	4
<b>1.7 Relevant evidence and research</b>	6
<b>1.8 Emerging Evidence</b>	11
<b>1.9 Gaps in Evidence</b>	11
<b>1.10 Key Messages from the Evidence Review</b>	11
<b>1.11 SWOT Analysis</b>	12
<b>1.12 Climate Change Considerations</b>	13
<b>1.13 Main Spatial Planning Issues</b>	13
<b>1.14 Appendix A</b>	14

## Soil, Air & Water Quality Issues Paper - February 2011

# 1 Soil, Air and Water Quality

## 1.1 Summary

This paper looks at issues of soil, air and water quality, and draws out a number of planning issues for the Core Strategy.

**Issue SAW1** – Protect and enhance the quality of soil, air and water.

**Issue SAW2** – Ensure that there is sufficient land for agriculture and food production.

## 1.2 Purpose

This is one in a series of papers dealing with a specific theme. Each can be read in isolation or together with other papers to gain a wider understanding of issues facing Cornwall. This paper sets out the evidence base and the policy context for soil, air and water quality, and describes how the issues that need to be addressed in relation to these topics can be taken forward in the Core Strategy. These papers will form the first stage of the development of options for Core Strategy policy. Other issues papers available in this series include:

- *Housing*
- *Economy*
- *Tourism*
- *Retail & town centres*
- *Education & skills*
- *Social inclusion*
- *Crime & anti-social behaviour*
- *Sport recreation & open space*
- *Health*
- *Transport & accessibility*
- *Energy*
- *Climate change*
- *Flooding, drought & water consumption*
- *Biodiversity & geodiversity*
- *Landscape & seascape*
- *Historic environment*
- *Design & efficient use of resources*
- *Agriculture & food*
- *Coast & maritime*
- *Minerals*
- *Waste*

## Soil, Air & Water Quality Issues Paper - February 2011

This series of papers is closely linked to the topics of the Sustainability Appraisal (SA) scoping report. The SA scoping report identifies the sustainability objectives, decision making criteria and indicators against which the LDF and other plans in Cornwall should be tested, to examine whether plans are sustainable. The SA scoping report also identifies key messages from national, regional and local plans for the Cornwall LDF, a baseline and sustainability issues for each topic. These Core Strategy issue papers largely build on the SA scoping report and start to examine in greater detail the messages from evidence and research, the opportunities and threats and planning issues that need to be considered in the Core Strategy (the SA scoping report can be found at <http://www.cornwall.gov.uk/default.aspx?page=17394> ).

### 1.3 What is soil, air and water quality?

#### Soil

Soil is a non-renewable resource, created over a long period of time by the weathering of rocks and minerals. The quality of this resource is affected by natural and human activities, and is essential to sustainable development and food production / agriculture.

#### Air

Air quality is affected by pollutants from natural or man-made sources. The most common cause of air pollution in urban areas is vehicular traffic, which can lead to severe health and breathing problems. Petrol and diesel-engined motor vehicles emit a wide variety of pollutants, principally carbon monoxide (CO), oxides of nitrogen (NOx), volatile organic compounds (VOCs) and particulates (PM<sub>10</sub>).

#### Water

Water quality in rivers, streams, lakes, estuaries, coastal and groundwaters is impacted upon by a wide variety of sources including effluents discharged from a pipe (a point source), rainwater runoff from agricultural land (a diffuse source), discharges from old mine workings and natural inputs. Sewage or trade effluents can be treated by a sewage treatment plant so that the final effluent meets specific criteria to protect the receiving waters. Untreated effluents are likely to contain pollutants which can damage the natural environment and pose a risk to human health. During periods of heavy rainfall raw sewage can be washed into watercourses through combined sewer overflows. As well as affecting the river water quality this can lead to pollution on beaches affecting bathing water standards and putting the health of recreational users of the coast at risk.

Whilst all topics are interlinked, this Soil, Air and Water Quality paper has particularly strong links to the papers dealing with Flooding, Biodiversity and Coast and Maritime. The closely related issue of light pollution is dealt with in the landscape paper.

## Soil, Air & Water Quality Issues Paper - February 2011

### 1.4 Soil, air and water quality 'portrait' of Cornwall

#### Soil

Soil in Cornwall is an important issue due to the rural nature of the county, the reliance on agriculture and limited pockets of high grade agricultural land. There are also contaminated land issues resulting from the county's mining heritage. The processing of tin, lead and copper ores has led to concentrations of impurities such as arsenious sulphides in the soil in metalliferous mining areas in Cornwall.

Human activity can alter the character and quality of our soils. Pollution from industry can cause long-term soil contamination. Farming can maintain and improve soil quality but some intensive farming practices can have negative effects, such as increased soil erosion.

Local and sustainable food is of growing interest to producers and consumers interested in preventing environmental damage, promoting health, promoting local economies and cultures, and increasing the level of food security for local populations.

PPG 17 currently sets out planning policy relating to allotments with a draft consultation planning policy statement on planning for a natural and healthy environment advising that allotments, community gardens, city (urban) farms and land used for permaculture should be planned for through green infrastructure needs assessment.

A resurgence of interest and enthusiasm for allotments has led to waiting lists of over 500 people in Cornwall. There are approximately 19 allotments throughout Cornwall. Two new sites were brought into use in 2009 with a total of 36 new plots .

#### Air

Air quality in the south west region is generally good with low levels of sulphur dioxide, nitrogen dioxides and particulates in comparison with the rest of England <sup>(1)</sup>.

In Cornwall air quality is generally considered to be good <sup>(2)</sup>. However traffic is a primary source of pollution, especially given the topography of towns and villages which tend to trap pollution within narrow streets. Areas such as Bodmin and Camborne/Pool/Redruth are an example of this and have been designated as Air Quality Management Areas. Increased summer traffic associated with the tourist industry also leads to congestion, thereby increasing levels of air pollutants.

Cornwall's mining heritage has and does create air quality issues as windblown dust containing heavy metals and minerals may be carried back into the atmosphere. Additional sources of air pollution in the UK can be as diverse as emissions from European industrial regions, Saharan desert dust and even salt from the seas that surround us.

#### Water

The quality of Cornwall's waters is important for a number of reasons. The ecology of our rivers (including fish populations) is influenced by the chemical and biological quality of the water.

1 State of South West Report 2009

2 Cornwall Air Quality Strategy Para. 6.1

## Soil, Air & Water Quality Issues Paper - February 2011

*Coast and maritime:* The quality of our waters is also important for recreational purposes. Activities such as water sports, fishing and swimming all bring humans into contact with water and poor bacteriological or chemical quality could pose a human health risk. During periods of heavy rainfall raw sewage can be washed into watercourses through combined sewer overflows. In Cornwall we have a high number (79) of designated bathing waters which need to meet strict quality criteria.

Certain areas (mainly reservoirs and some rivers) provide water for public water supply so the quality of this water needs to be protected. Also a significant proportion of Cornwall's rural housing relies on private water supplies usually drawn from boreholes or wells.

Water flow is important for water supply, wildlife, visual amenity and recreation. In Cornwall, flows are generally good, but, water abstraction and the climate can affect the flow which can have a knock on effect to water quality as there is less water available to dilute any pollutants.

The majority of properties in Cornwall are connected to the mains sewerage network. However due to the rural location of many of Cornwall's properties there is a significant proportion served by private foul drainage systems (e.g. septic tank, sewage treatment plant or cesspit). These discharge either to groundwaters via a soakaway or direct to surface waters depending on the level of treatment or may be pumped for off-site treatment and disposal.

Since 1990, the quality of bathing waters has improved significantly in the South West, as they have done nationally. Improvements are largely due to investment by water companies and the Environment Agency has been working with them to improve the quality of their sewage discharges.

One of the most significant water quality issues for surface and groundwaters in Cornwall is historic mining. The discharges from these abandoned mines impact heavily on the quality of rivers such as the Red River, River Carnon & River Cober and also on the quality of the groundwater. Cornwall also has a significant farming community and diffuse pollution (mainly Phosphorous and Nitrate) from agricultural run-off has a major impact on our water quality. Catchment Sensitive Farming is an initiative that looks to improve this through cooperation with farmers working in problem catchments.

### 1.5 What is the role of the Core Strategy?

The Core Strategy can provide planning policies that help deliver enhancement and protect environmental standards for the benefit of local communities. In developing these policies, the Core Strategy needs to take into account all other relevant plans, strategies, policies and programmes as well as involve key stakeholders and the community.

The Core Strategy could provide:-

*Planning policies to ensure impacts on soil, air and water quality are mitigated*

### 1.6 Relevant policy context

When preparing the Core Strategy, the Council does not start with a blank sheet of paper. There is a whole series of policies at national and regional level which have to be followed and the Core Strategy needs to be prepared within the framework set by national and European legislation and

## Soil, Air & Water Quality Issues Paper - February 2011

national & regional guidance. This section focuses on the most relevant published legislation, plans & strategies and draws out their key messages for the Core Strategy. The key directives, acts, plans and strategies identified and used are:

### Soil

#### National

- Planning Policy Statement 7: Sustainable Development in Rural Areas
- Planning Policy Statement 23: Planning and Pollution Control
- Safeguarding Our Soils - A Strategy for England (DEFRA - September 2009)

#### Regional

- The Regional Strategy for the SW Environment (2004-2014): Our Environment Our Future (GOSW)

#### Local

- Contaminated Land Strategies – Caradon, Carrick, Kerrier, North Cornwall, Penwith, Restormel
- Strategy for Agriculture, Horticulture, Food and Land Based Initiatives in Cornwall & the Isles of Scilly 2003-2010

### Air

#### National

- Planning Policy Statement 23: Planning and Pollution Control
- Air Quality Strategy for England, Scotland Wales and Northern Ireland

#### Regional

- The Regional Strategy for the SW Environment (2004-2014): Our Environment Our Future (GOSW)

#### Local

- Cornwall Local Transport Plan 2
- Sustainable Community Strategy for Cornwall (Cornwall Strategic Partnership, 2008)

### Water

#### International / European

- The Urban Wastewater Treatment Directive
- Nitrates Directive
- Dangerous Substances Directive
- Bathing Waters Directive
- Revised Bathing Waters Directive

## Soil, Air & Water Quality Issues Paper - February 2011

- Surface Water Abstraction Directive
- The Groundwater Directive 2006/118/EC
- Freshwater Fish Directive
- Shellfish Water Directive
- Water Framework Directive 2000
- Protection of Water against Agricultural Nitrate Pollution (England and Wales) Regulations 1996
- Water Resources Act (1991)
- Water Industry Act (1991)
- Groundwater Regulations 1998

### National

- Planning Policy Statement 23: Planning and Pollution Control
- Code for Sustainable Homes
- Future Water - The Government's Water Strategy for England
- Water and Life for Livelihoods (EA - 2006)
- Catchment Sensitive Farming Programme -(DEFRA)

### Regional

- South West River Basin Management Plan (consultation draft 2008)
- Regional Spatial Strategy for South West - Waste Water Treatment and Disposal (EA 2006)
- South West Water Waste Water Plan

### Local

- Catchment Abstraction Management Strategies (North Cornwall, Seaton, Looe & Fowey, West Cornwall, Fal & St Austell Streams, Tamar)
- Cornwall Strategic Flood Risk Assessment (in progress)
- Climate Change in Cornwall (draft) – SLR implications (CCC, 08)
- Local Estuary Management Plans River Catchment Plans – Caerhays, Camel & Allen, Cober & Loe Pool, East & West Looe, Fal & Tresillian, Fowey & Lerryn, Gannel, Inny, Lyner & Tiddy, Neet & Strat, Menalhyl, Mevagissey, Ottery, Seaton, St Austell Stream.

## 1.7 Relevant evidence and research

### Soil Quality

Poor soil structure, compaction and erosion can lead to increased runoff, localised flooding and pollution problems. The problem will be exacerbated with climate change potentially leading to intensive rainfall and prolonged wet weather<sup>(3)</sup>.

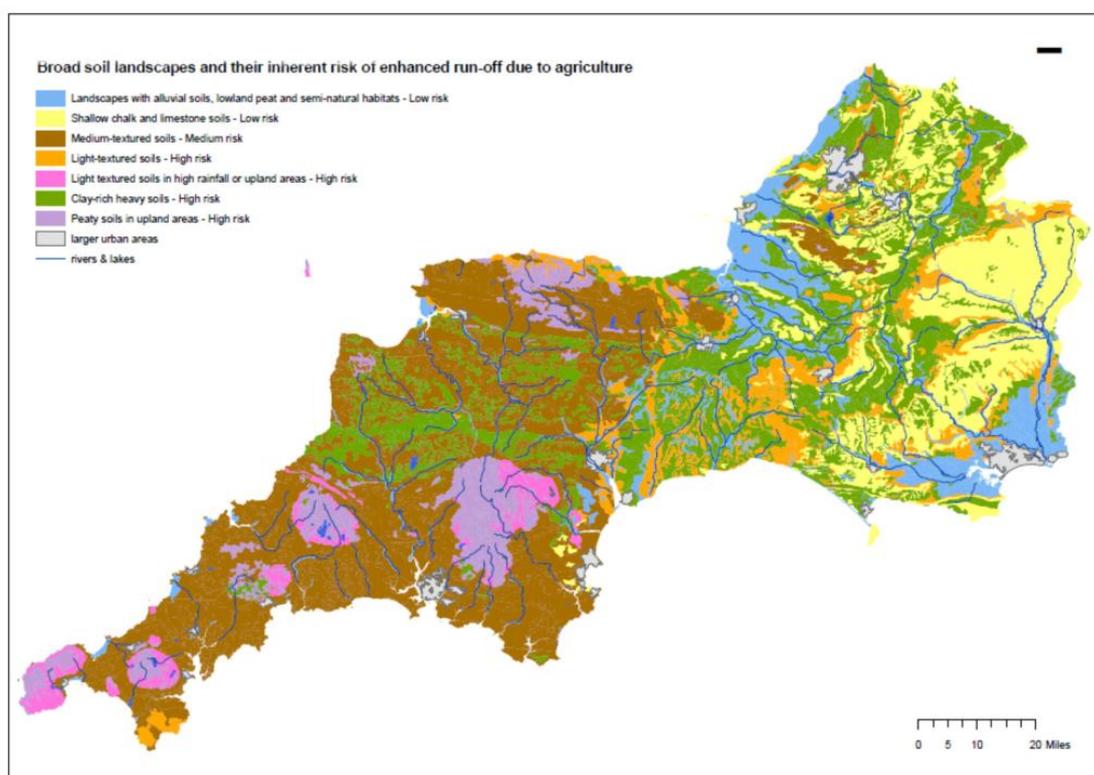
The impact agriculture has on soil is identified by the Environment Agency as an issue that needs addressing. It is leading to impacts on water quality, aquatic wildlife and bathing waters as well as being the cause of a large proportion of surface water flooding incidents.

## Soil, Air & Water Quality Issues Paper - February 2011

One of the major recent legislative impacts on agriculture is that concerning Nitrate Vulnerable Zones (NVZs). These zones require farmers to show how improvements have been made on waste management (e.g. slurry storage). Newly designated NVZs will need to comply with this by January 2010. Specific details on this subject can be found at [www.magic.gov.uk](http://www.magic.gov.uk)

The following map indicates broad soil landscapes and their inherent risk of soil structure problems related to runoff due to agriculture. The areas marked in orange, pink, green and purple are at high risk.

### Broad soil landscapes and their inherent risk of soil structure problems



Source: Environment Agency

### Air Quality

Air quality is measured throughout Cornwall as a requirement under the provisions of the Environment Act 1995.

The Cornwall Air Quality Strategy's <sup>(4)</sup> main objective is to achieve excellent air quality across Cornwall to protect public health and the environment.

The following 'polluting scenarios' set out below are identified in the strategy as being action areas:

## Soil, Air &amp; Water Quality Issues Paper - February 2011

## Polluting scenarios

Cornwall Air Quality Strategy 2 0 0 4



In terms of the local air quality review, areas of concern related to road traffic (particularly in town centres). The report found that although traffic levels were not particularly high, low speeds can result in higher pollution levels. The towns highlighted as having problems are:

- Penzance
- Camborne
- Falmouth
- Truro
- Bodmin

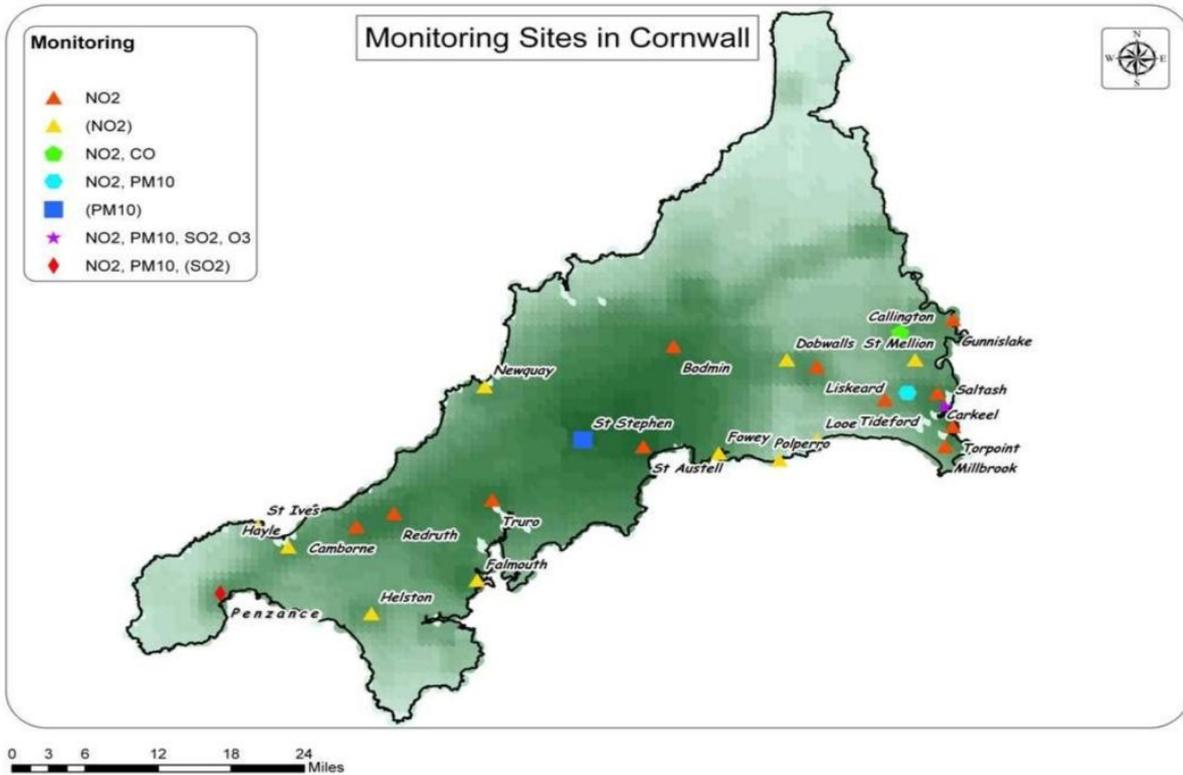
Local authorities have a statutory duty to review and assess air quality in their area. If a local authority finds any area where the National Air Quality Strategy objectives are not likely to be achieved, it must declare an Air Quality Management Area (AQMA). The local authority must then develop a plan to improve the air quality - a Local Air Quality Action Plan.

There are 2 existing Air Quality Management Areas (AQMAs) which have been declared in the Camborne/Pool/Redruth CPR area and in Bodmin. These AQMAs were declared as a result of poor air quality due to traffic-related pollution. This led to a failure to meet National Air Quality objectives within these areas. It is likely that at least one (possibly more) AQMA will also be declared in the former Caradon area.

## Soil, Air & Water Quality Issues Paper - February 2011

The map below shows pollution levels from monitored sites within Cornwall (Provided by Cornwall Air Quality Forum). Information shown in brackets relates to previous monitored sites that are no longer cause for concern. The light and dark background relates to Nitrogen Dioxide levels; with dark representing higher levels (green represents low pollution levels)

**Pollution levels from monitored sites.**



This map is reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. 100019590. 2007

### Water Quality

In total Cornwall has 79 designated Bathing Waters. 2008 compliance was still very high with 94.5% however this was the lowest recorded figure for the South West since 1999. The results for 2008 under the Bathing Water Directive are shown below. As it was a wet year the compliance is lower than normal due to high levels of flooding.

**Table 1.1**

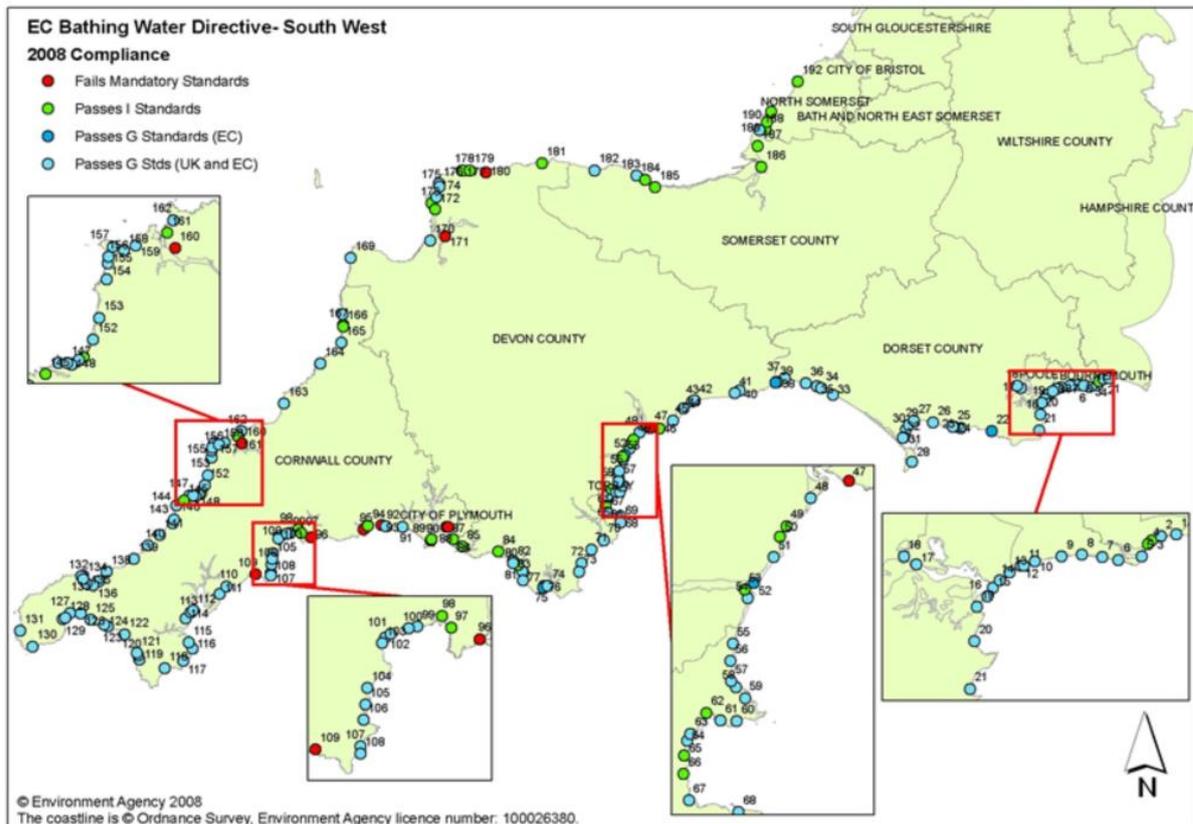
<u>County</u>	<u>Bathing waters failing mandatory standards</u>	<u>Bathing waters with exceedances against mandatory standards (excluding mandatory failures)</u>	<u>Bathing waters failing EC guideline standards</u>	<u>Potential Blue Flag beaches failing Blue Flag water quality standards</u>
<u>Cornwall</u>	<u>5</u>	<u>16</u>	<u>14</u>	<u>1</u>

Source: Environment Agency

## Soil, Air & Water Quality Issues Paper - February 2011

The map below shows how well the County performs against national and international standards. The areas marked in red are shown to fail mandatory bathing standards.

### EC bathing water directive 2008



Cornwall also has designated shellfish areas in the Fal, Fowey, Camel, Helford and Tamar estuaries.

The 2007 biology and chemical results of the General Quality Assessment (GQA) classification for the South West shows that over 89% and 87% of stretches assessed were graded good or very good respectively.

Between 1990 and 2007 those rivers containing high phosphate concentrations have reduced by 10% to 43%. However stretches where there are high nutrients have increased 4% to 26%. The GQA system will gradually be replaced as the Water Framework Directive reporting methods take over.

In Cornwall during 2007 there were 511 pollution incidences of which 53 had impacts on water quality. Where a source was identified the following industries were responsible for the incidents:

- Water industry 115
- Waste management 73
- Agriculture 51
- Domestic & residential 40
- Manufacturing 37

## Soil, Air & Water Quality Issues Paper - February 2011

Under the Water Framework Directive (WFD) for the south west river basin district there were 8 pressures which were identified as significant water quality management issues. These were:

- Nitrate in surface and groundwater
- Phosphorus in Rivers and Standing Water
- Mines and Minewaters
- Pesticides
- Other Pollutants – Metals
- Urban and Transport Pollution Pressures
- Priority Hazardous Substances & Chlorinated Solvents
- Organic Pollution (BOD &NH<sub>3</sub>)

### 1.8 Emerging Evidence

The gathering of evidence is an iterative process and must be continued throughout the preparation of the Core Strategy. Additional evidence should be considered right up to the 'submission' stage in the process. Listed below are the known emerging relevant guidance & studies, which will be taken into account if available before the submission of the Core Strategy:

- Water Protection Zones (Review of EA powers by DEFRA)
- WFD South West River Basin Management Plan (EA). This draft is currently in consultation (until 22/06/2009). The final version, which will be published towards the end of 2009, is likely to have some significant changes from the current draft version. Useful maps will also be available at this time showing the current and predicted water quality status of all waterbodies in the South West.
- Cornwall Climate Change Action Plan. Currently being drawn up by CC and various relevant agencies and organisations.
- Consultation paper on a new Planning Policy Statement: Planning for a Natural and Healthy Environment.

### 1.9 Gaps in Evidence

There appear to be gaps in a County-wide evidence base for mapping and detailed information on contaminated land. Historically, the district authorities held their own data, though there needs to be an integrated approach to the recording and publication of contaminated soil type throughout Cornwall.

Similarly, with air quality, the former district councils were all required to submit data annually to the Department of the Environment Food and Rural Affairs (DEFRA). This needs to be combined into one document for Cornwall.

In terms of water, it would be useful to have an understanding of the number of Combined Sewer Overflows in Cornwall and the number of times they are licensed to discharge, to assess capacity.

### 1.10 Key Messages from the Evidence Review

A number of key messages and issues were drawn out from the evidence review. The table below identifies the messages deemed most relevant and the source documents.

## Soil, Air &amp; Water Quality Issues Paper - February 2011

Table 1.2

Message	Relevant Document(s)
Need to promote sustainable land management	PPS1, PPS7, PPS23, Draft RSS Policy RE7, Cornwall State of Environment Report, Safeguarding our Soils - A Strategy for England.
Careful approach to development on contaminated land, land at risk of flooding, erosion and instability	PPS1, PPG20, PPS23, Draft RSS
Government target of 60% of all new development on previously developed land	PPS3
Promote sustainable, diverse and adaptable agricultural sector	PPS7, Draft RSS Policy RE7, Cornwall State of Environment Report, Strategy for Agriculture in Cornwall, Safeguarding our Soils - A Strategy for England.
Improve air quality in hotspots throughout the County	PPS23, Draft RSS Policy RE9, Regional Strategy for SW (GOSW), Cornwall Air Quality Strategy, Local Transport Plan
Cornwall Council needs to produce policies in its Core Strategy against which applications for potentially polluting developments will be considered	PPS23

## 1.11 SWOT Analysis

Table 1.3

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• A wide-ranging evidence base on soil and water quality.</li> <li>• Relatively low percentage of previously developed land (PDL) e.g. relatively low number of contamination issues.</li> <li>• Large areas of nationally protected mainland and coastline.</li> <li>• Predominantly rural and coastal nature results in better air quality.</li> </ul>	<ul style="list-style-type: none"> <li>• Much of the County affected by high levels of ground and water contamination, erosion, and instability.</li> <li>• Limited high-grade agricultural land.</li> </ul>
Opportunities	Threats

## Soil, Air & Water Quality Issues Paper - February 2011

<ul style="list-style-type: none"> <li>• New authority has opportunity to create a plan that addresses environmental quality issues throughout Cornwall.</li> <li>• Create clean environments that reduce impact on climate change.</li> <li>• Raises awareness and importance of soil, air, and water quality / pollution in Cornwall.</li> <li>• New development will provide opportunities for land decontamination in Cornwall.</li> <li>• Improvements to waste water (sewage) infrastructure capacity through new development.</li> </ul>	<ul style="list-style-type: none"> <li>• Significant development will put pressure on management of soil, air and water quality in Cornwall (including need for additional sewage treatment capacity).</li> <li>• Contamination.</li> <li>• Changing land management practices</li> <li>• Impact of climate change (this is explored further in a separate issues paper in this series and within the SA Scoping Report (<a href="http://www.cornwall.gov.uk">www.cornwall.gov.uk</a>).</li> <li>• Due to its rural nature, there is a low percentage of previously developed land (PDL) in Cornwall.</li> </ul>
---	--

### 1.12 Climate Change Considerations

Climate change is further explored in a separate issues paper in this series, as well as in the Sustainability Appraisal Scoping Report (visit [www.cornwall.gov.uk](http://www.cornwall.gov.uk)). The effect climate change has/ will have on the County's soil, air and water quality is potentially significant. Below are some of the main considerations:

- Wetter winters and drier summers may put pressure on soil stability
- Beaches are likely be affected by rising sea levels
- Availability of water resources under threat
- Agriculture will need to adapt

The Scoping Report sets out a series of sustainability objectives against which the Core Strategy and other parts of the Local Development Framework will be assessed, to gauge how far they will promote sustainable development.

The relevant objectives for soil, air and water quality state:

- *To minimise the use of undeveloped land and protect and enhance soil quality*
- *To reduce air pollution and ensure air quality continues to improve*
- *To maintain and enhance water quality and reduce consumption and increase efficiency of water use*

### 1.13 Main Spatial Planning Issues

Taking into account the key messages from the current evidence available, the main spatial planning issues are listed below.

#### Issue SAW 1

Protect and enhance the quality of soil, air and water.

## Soil, Air & Water Quality Issues Paper - February 2011

### Issue SAW 2

Ensure that there is sufficient land for agriculture and food production.

These issues will work towards achieving the following long term objective for Cornwall as set out in the Sustainable Community Strategy - 'Future Cornwall':

- To make the most of our environment, reduce greenhouse gas emissions and invest in and promote sustainable use of natural resources

This paper summarises the evidence on soil, air and water quality brought together to inform the Cornwall Core Strategy. However, it will be added to and kept up-to-date as other relevant evidence becomes available. In updating these papers all previous versions will be archived to ensure it is clear what evidence was available at each stage.

### 1.14 Appendix A

#### Appendix A

##### Consultation to date:

The Issues papers were first published for stakeholder consultation in September 2009. The papers were amended to take into account consultee responses and were then circulated to Planning Policy Advisory Panel members in November 2009. They were also given to all members at a series of three area based consultation events in March 2010.

##### Revisions to Issues Papers:

In writing the draft Issues and Options report in March 2010 it was clear that it was necessary to revise the issues identified in some of the topic based issues papers. Some issues were requirements under other legislation or procedural matters, and therefore options could not be set against them (e.g. *The Core Strategy should work with other plans and programmes...*) Others were in fact options and needed to be set as options under an overarching issue (e.g. *The Core Strategy has a role in supporting the growth and sustainability of the micro and small business economy*). There was also some repetition between different topics and these issues could be amalgamated.

##### Criteria for Changes:

The issues have been rationalised against the following criteria:

- Is this a Spatial Planning Issue?
- Is the issue covered by other legislation?
- Can options be generated against each issue?
- Is this an issue and not an option?

## Soil, Air & Water Quality Issues Paper - February 2011

- Is the issue rooted in evidence?
- Is there potential to amalgamate issues?

### **Issues in Consultation Version:**

**Issue SAW1** - The impact development has on soil, air and water quality is an important factor when determining where to allocate land for development.

**Issue SAW2** - The Core Strategy should create opportunities for improving the quality of soil, air and water in Cornwall

**Issue SAW3** - Achieve an integrated approach between the Core Strategy, River Basin Management Plan and the Cornwall Air Quality Strategy.

**Issue SAW4** - Contaminated land data should be integrated across former districts

### **Revised Issues:**

**Issue SAW1** - Protect and enhance the quality of soil, air and water.

**Issue SAW2** -Ensure that there is sufficient land for agriculture and food production.