

Observatory monitoring framework – indicator data sheet

Environmental impact: Water

Indicator DA2: Chemical quality of rivers

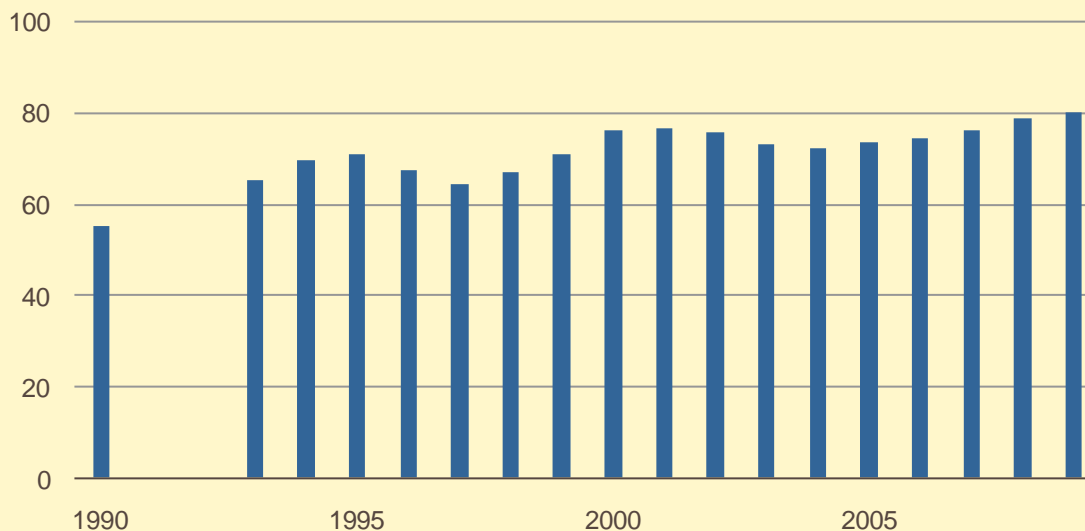
The EU Water Framework Directive has resulted in the need to change the way in which surface water quality is monitored and reported. It is not currently possible to produce an indicator of water quality that is consistent across the countries of the UK or provides a long-term indicator of change. Defra, the Environment Agency for England and Wales, the Scottish Environment Protection Agency and the Department of the Environment for Northern Ireland are considering reporting options and methodologies. This indicator will be updated once a new methodology has been established. Further details can be found in the accompanying fact sheet.

The chemical quality of water is a guide to its ability to support life. It is used in conjunction with other measures, such as the biological quality of water and concentrations of pollutants, to assess overall water quality.

The General Quality Assessment (GQA) reporting system for river water quality ended in 2009.

DA2 Percentage of total river length of good chemical quality in England

percentage



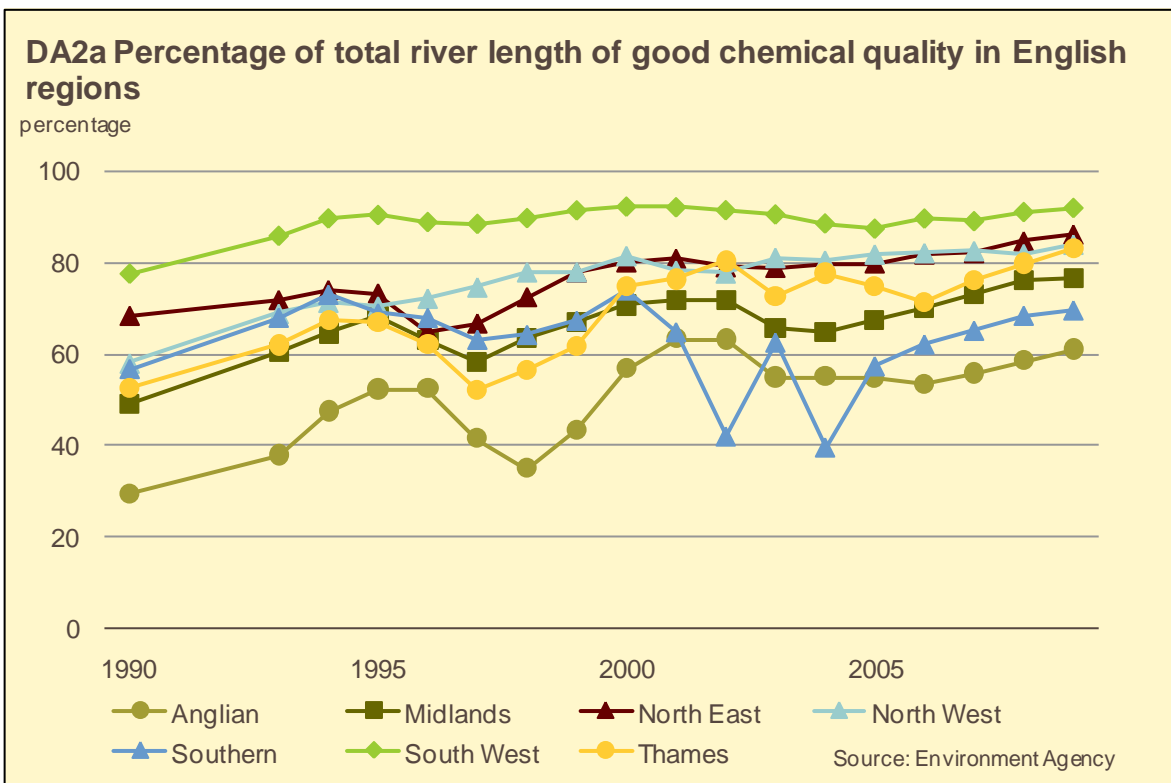
Source: Environment Agency

80% of river length in England was of good chemical quality in 2009, up from 79% in 2008.

Regional data

There has been considerable variation between regions and also fluctuations between years.

- The percentage of total river length of good chemical quality increased in all regions between 2008 and 2009.
- In 2009, the lowest levels of chemical quality were found in the Anglian region.



This indicator was updated in September 2010. This indicator will be updated once a new methodology has been established.

Further information and contact

Background information can be found in the accompanying fact sheet.

For queries or information on this indicator contact Defra's Observatory team on +44 (0) 1904 455229 or email Observatory@defra.gsi.gov.uk

Observatory monitoring framework – indicator fact sheet

Environmental impact: Water quality

Indicator DA2: Chemical quality of rivers

<i>Indicator</i>	Chemical quality of rivers
<i>Data</i>	Percentage of total river length of good chemical quality
<i>Geographic coverage</i>	England and Environment Agency regions
<i>Years</i>	1990, 1993 - 2009
<i>Source</i>	Environment Agency
<i>Origin of data</i>	Environment Agency
<i>Updates</i>	This indicator will be updated annually. This indicator will be updated once a new methodology has been established.
<i>Background</i>	<p>The chemical quality of water is a guide to its ability to support life. It is affected particularly by nutrient pollution; eutrophication can produce algal blooms which rapidly use up oxygen in the water under certain conditions. It is used in conjunction with other measures, such as biological quality and concentrations of pollutants, to assess overall water quality.</p> <p>Whilst agricultural production is a major influence on water quality, other sources such as industrial discharges or sewage works also have impacts.</p>
<i>Statistical & methodological information</i>	<p>Chemical river quality in England is measured using the General Quality Assessment (GQA) Scheme. Previously, three chemical properties determine quality under this system - dissolved oxygen, biochemical oxygen demand (BOD) and ammoniacal nitrogen. However, Biochemical Oxygen Demand (BOD) monitoring has been dropped at most sites in England from the start of 2008. Published data now exclude BOD for all years.</p> <p>There are six grades of quality from A to F. Good chemical quality corresponds to GQA grades A and B.</p> <p>Measures of water quality have been reviewed as part of the implementation of the EU Water Framework Directive (WFD). New monitoring procedures (a 'river basin' monitoring approach) were implemented in 2008; the results are significantly different from the GQA results presented here.</p> <p>The main differences are:</p> <p>Under the WFD river basin monitoring approach, the way in which the sample of rivers used is selected has changed, since the sample needs to ensure adequate representation across all river basin districts. Further analysis is required to establish whether robust estimates can be made for Government Office Regions – however, if this is the case, at the same time it should improve our ability to report results by river basin district.</p>

The actual monitoring process has also changed, with the separating out of what will be called “surveillance” monitoring and “operational” monitoring. The former will effectively be the ongoing monitoring at agreed sites, and it will be this which will form the basis of the reported results. In addition, “operational” monitoring will be carried out at sites identified as warranting closer and more frequent monitoring.

The assessment used under the WFD is called “Good Ecological Status” (GES). GES monitoring is risk based and focuses on where there is likely to be a problem, meaning that the figure is derived from the poorest sites. The classification also operates on a „one out all out” principle, where the poorest of the many elements measured drives the overall result. This stringent approach is designed to look at the impact of all pressures, deal with the biggest issues, and drive progress towards GES for all rivers.

The GES results are significantly different from the GQA results presented here and comparisons between the two should be treated with caution. WFD monitoring is risk based and focuses on where there is likely to be a problem, meaning that the figure is derived from the poorest sites. The classification also operates on a „one out all out” principle, where the poorest of the many elements measured drives the overall result. This stringent approach is designed to look at the impact of all pressures, deal with the biggest issues, and drive progress towards GES for all rivers.

The Observatory indicator has a different focus. It is a long-term measure of river water quality, and uses a consistent set of representative monitoring sites and measurements to ensure changes over time are accurately reflected.

It is intended that a common indicator will be developed for the UK, incorporating the new WFD monitoring network and allowing an aggregated UK comparison. This will likely focus on a subset of water quality parameters that have been monitored historically and will continue to be in the future, and will use a consistent pool of monitoring sites (known as “surveillance” sites). This will ensure that a consistent, long-term picture of river water quality is retained.

*Further
information*

This is also an Environment and wildlife statistics indicator:
<http://www.defra.gov.uk/statistics/environment/inland-water/>

Information on RIVPACS can be found at:
<http://www.ceh.ac.uk/products/software/RIVPACS.html>

Information on National Statistics for River Water Quality can be found at:
<http://www.defra.gov.uk/statistics/files/exp-note-changes.pdf> and
<http://www.defra.gov.uk/statistics/files/rwq-ind-sus-2009-resultsv2.pdf>