

4.2 Household water use

The amount of water each person uses in the average household varies across England and Wales. People in households that pay by meter nearly always use less than those who pay a fixed charge. The highest rates of consumption are in several water supply areas in the South East of England where household water use for unmetered properties is more than 170 litres per person per day (Figures 4c and 4d).

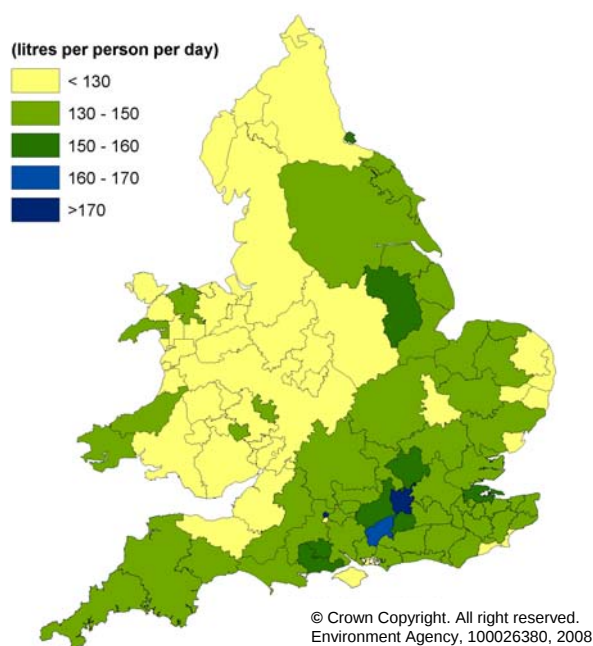


Figure 4c Per capita consumption 2007/08 (metered households)

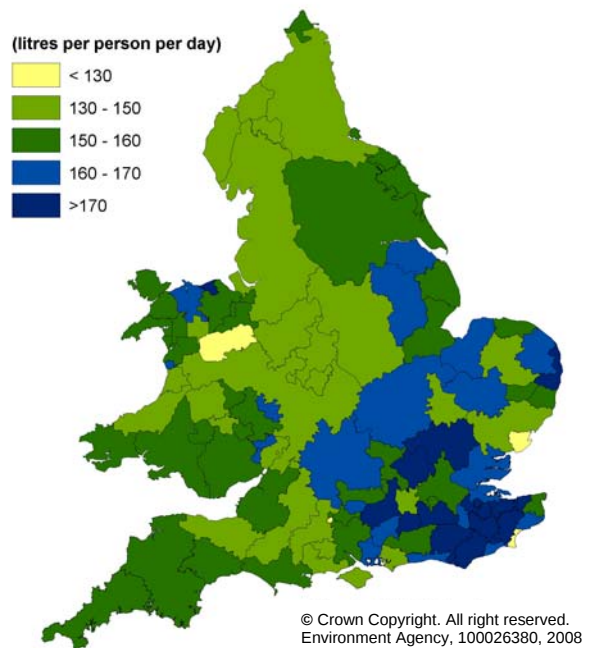


Figure 4d Per capita consumption 2007/08 (unmetered households)

Over the past decade, there has been little change in the average amount of water each person uses at home in England and Wales (Figure 4e). In 2007/08, average household water use over England and Wales was 148 litres per person per day. In homes where the supply is unmetered, people used slightly more at 153 litres per person per day. In metered properties, people used, on average, 13 per cent less than in unmetered homes.

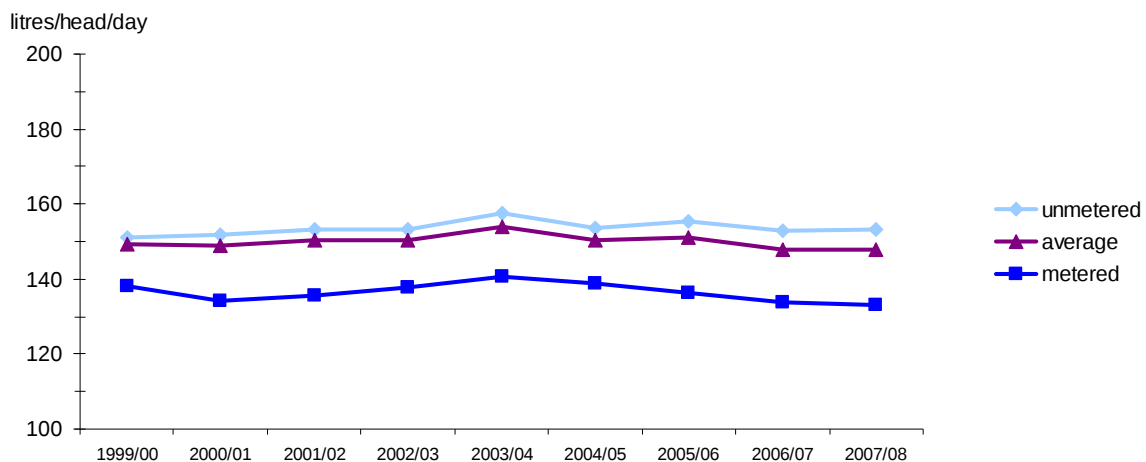


Figure 4e Household consumption in England and Wales

4.3 Household metering

Over 30 per cent of households now have a meter and pay according to the amount of water they use. The percentage of households with a meter varies across England and Wales from less than 20 per cent to more than 50 per cent (Figure 4f).

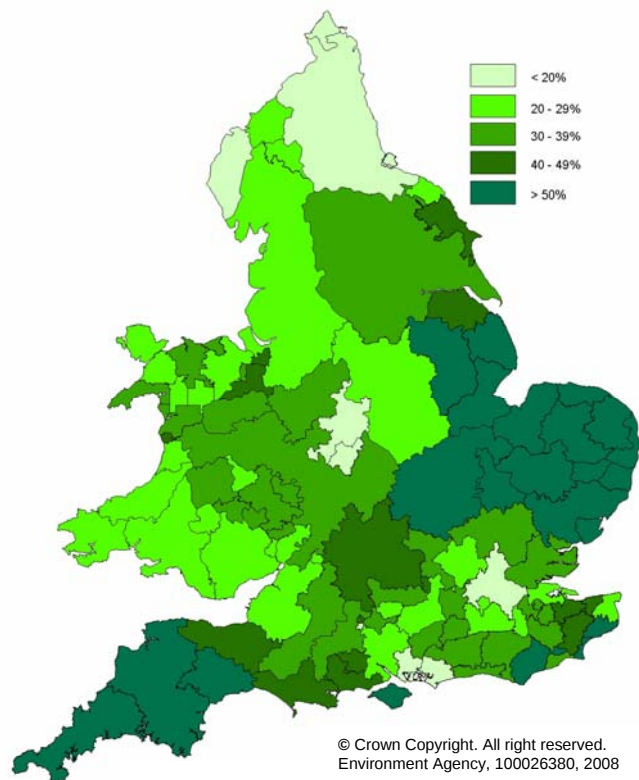


Figure 4f Proportion of households metered in 2008

The percentage of households with a meter in England and Wales has increased steadily in recent years. But, it will take over 30 years at current rates for water companies to install meters at all properties where it is reasonably practical to do so (Figure 4g). It is anticipated that “full metering” will be around 90 per cent of all properties.

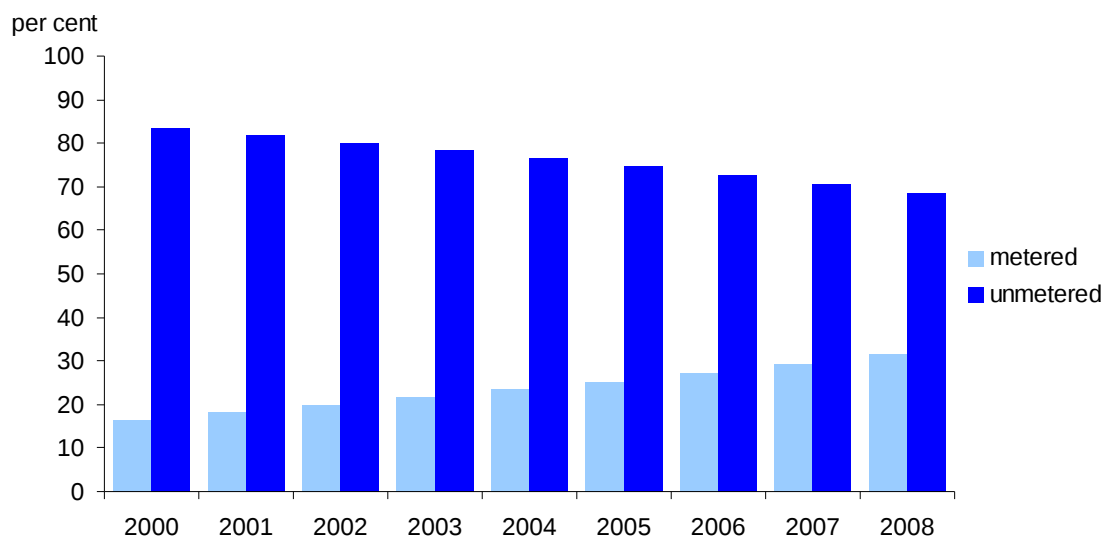


Figure 4g Households with meters in England and Wales

4.4 Leakage

Following the 1995 drought, water companies made good progress in reducing leakage from water mains by over 35 per cent by 2001 (Figure 4h). In the period to 2004, some companies allowed leakage to increase, but since then they have taken action to meet targets set by Ofwat (The Water Services Regulation Authority). Leakage is now about the same as it was eight years ago, at almost a quarter of the water supplied in England and Wales. About 25 per cent of total leakage is lost from customers' pipes supplying water into the home.

The majority of water companies are now at what they calculate to be their Economic Level of Leakage (ELL). This is the level at which the cost of further reducing leakage exceeds the cost of producing water from another source. Most water companies are planning to maintain leakage at their economic levels for the foreseeable future.

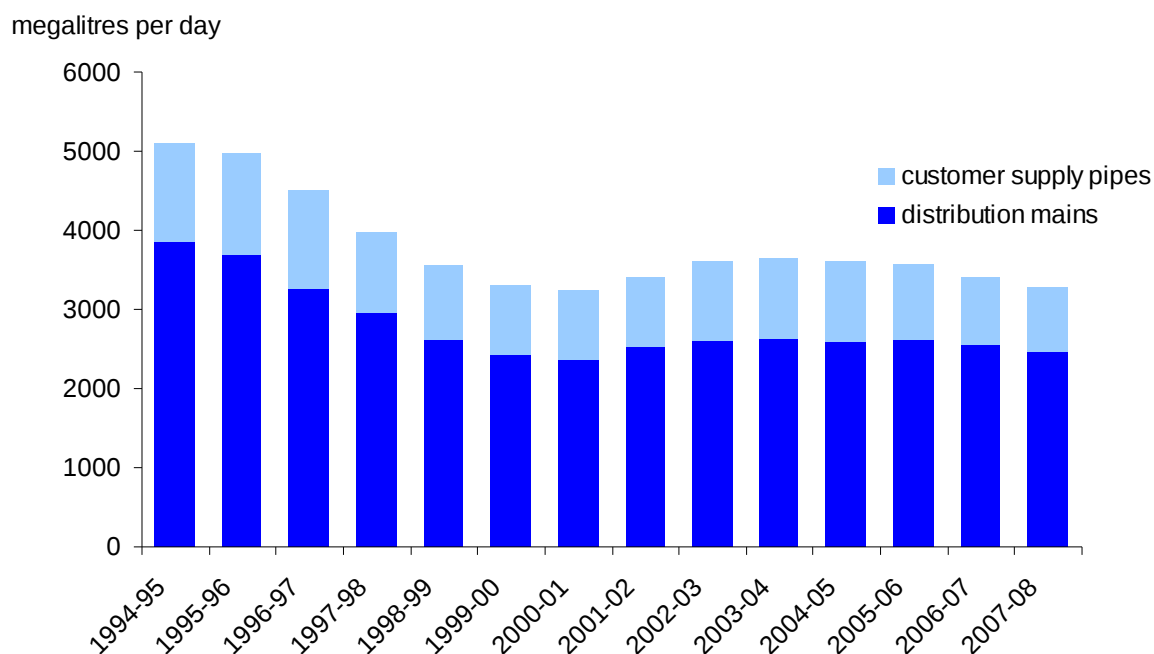


Figure 4h Leakage in England and Wales

4.5 Supply demand balance

The total amount of water put into supply by water companies is only slightly less than it was eight years ago. About half the water put into supply is to meet household demand. The amount used to supply business and industry has slowly declined in recent years and is now about 20 per cent of the total quantity supplied. Over England and Wales as a whole, we have enough water to meet demand in a dry year (Figure 4i). The difference between available supplies and demand is known as 'headroom'. Each water company calculates its target headroom to ensure it can reliably meet customer demand in a dry year.

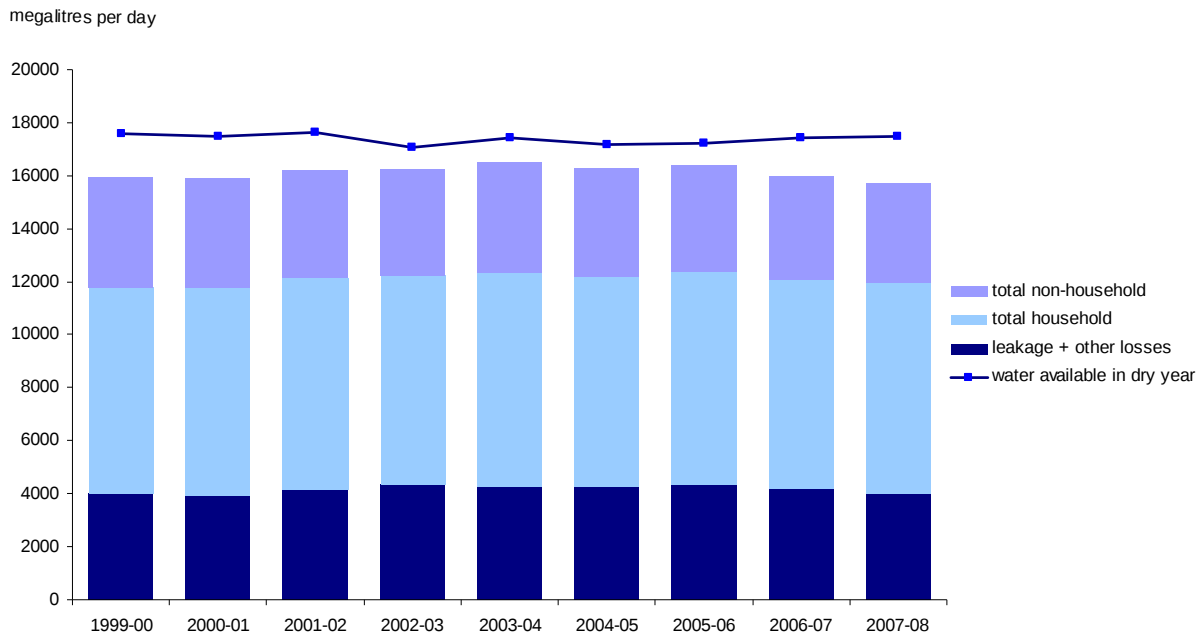


Figure 4i Supply demand balance for England and Wales

The position is not the same across England and Wales. Some water company supply areas are currently below their target headroom (Figure 4j). This means that customers in these areas are more likely to face supply restrictions in a dry year. Some of these supply zones are next to other zones where there is a healthy surplus.

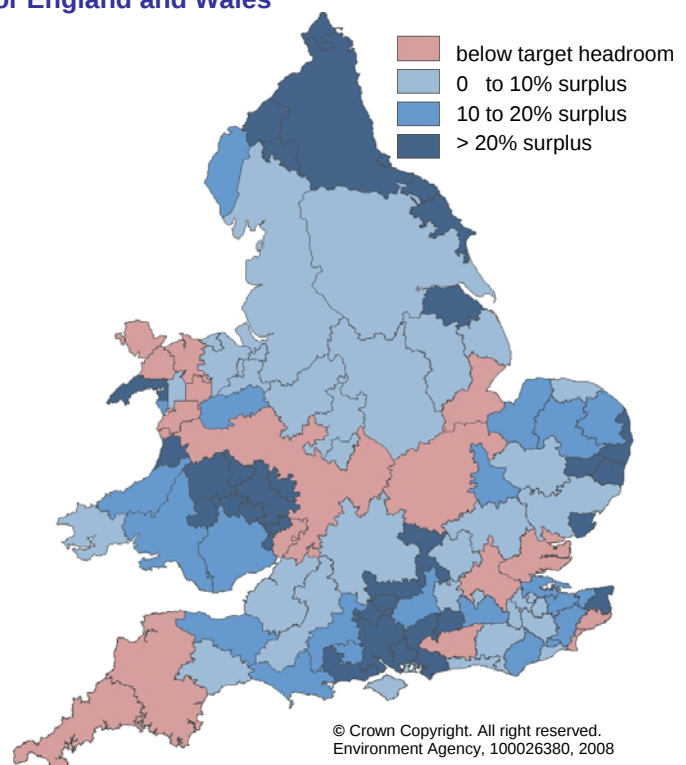


Figure 4j Relative security of public water supplies (from data reported to Ofwat, 2008)

5 Future pressures and trends

5.1 Water Framework Directive

We have used the information from the CAMS process to help develop River Basin Management Plans as part of the requirements of the European Water Framework Directive (WFD). We have identified those river water bodies likely to be at risk or probably at risk of failing WFD objectives from abstraction pressures by 2015 (Figure 5a). This map shows that action may be required to reduce abstraction across England and Wales to help ensure that water bodies achieve good ecological status to comply with the WFD.

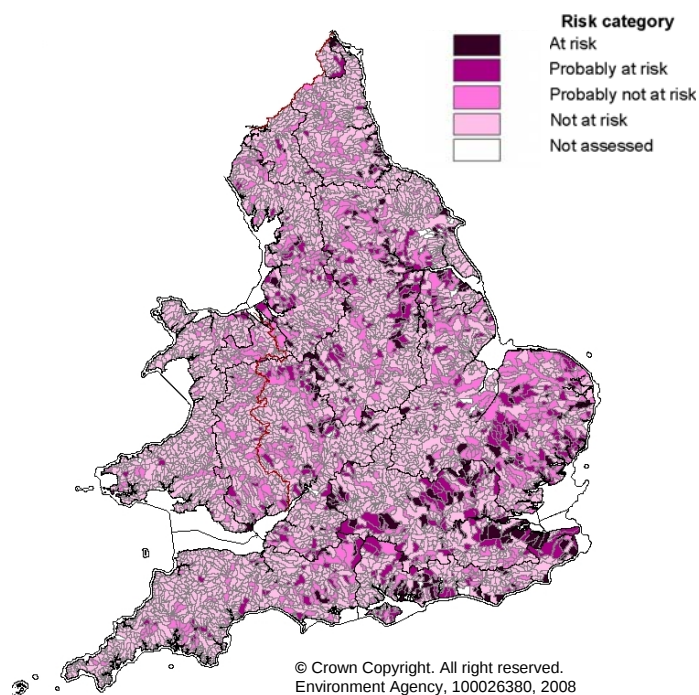


Figure 5a
Surface water bodies at risk from abstraction

5.2 Pollution pressures

Discharges from sewage works and industrial processes can present a pollution risk to the water environment. In England and Wales, we estimate that almost a fifth of all river water bodies are at risk or probably at risk of failing to reach good ecological status by 2015 because of pollution from point sources. The risks are greater for diffuse pollution washed by rainfall from the land into groundwater, with over 90 per cent of groundwater bodies at risk or probably at risk of failing to meet good ecological status from this pressure under the WFD. Figure 5b¹ shows the groundwater bodies at risk from nitrate pollution, which is a significant pressure on public water supplies taken from groundwater. There is a similar picture for rivers as for groundwater with over 85 percent of water bodies at risk or probably at risk from diffuse pollution.

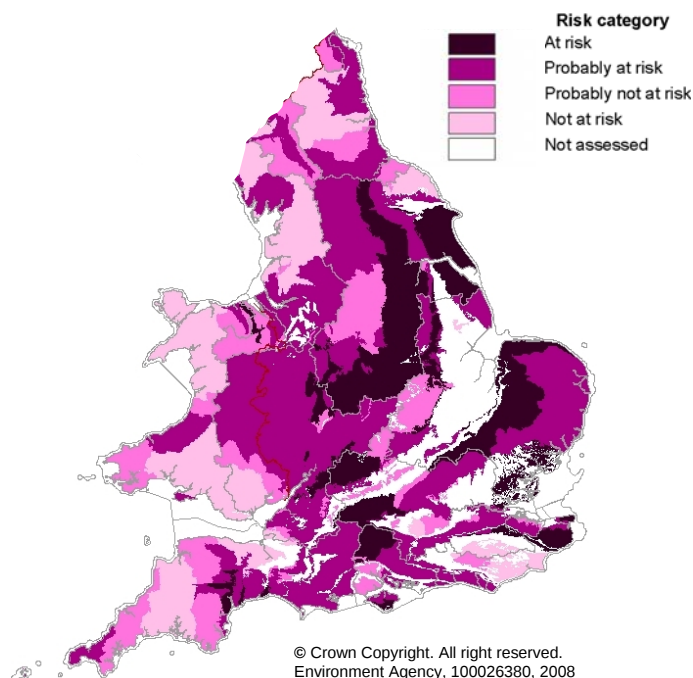
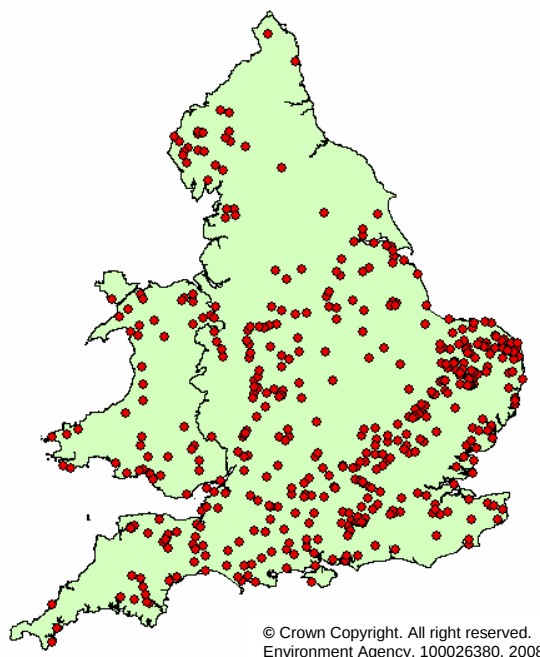


Figure 5b
Groundwater bodies at risk from nitrate pollution

¹ The assessment covers both urban and agricultural sources of nitrate pollution, but does not necessarily mean that action is needed within a particular groundwater body. A groundwater body identified as being at risk, or probably at risk, means that somewhere within that body there is a risk of one or more environmental objectives not being met. Please contact the Environment Agency for details on how this assessment has been derived.

5.3 Water for wildlife

There are many important wildlife sites that we believe may have been affected or may be under threat from water abstraction (Figure 5c). Many of these are in East Anglia where available resources are particularly scarce. These sites are included in our Restoring Sustainable Abstraction (RSA) programme where we plan to take action to reduce abstractions after we have confirmed the nature and cause of the problem and have identified a suitable solution.

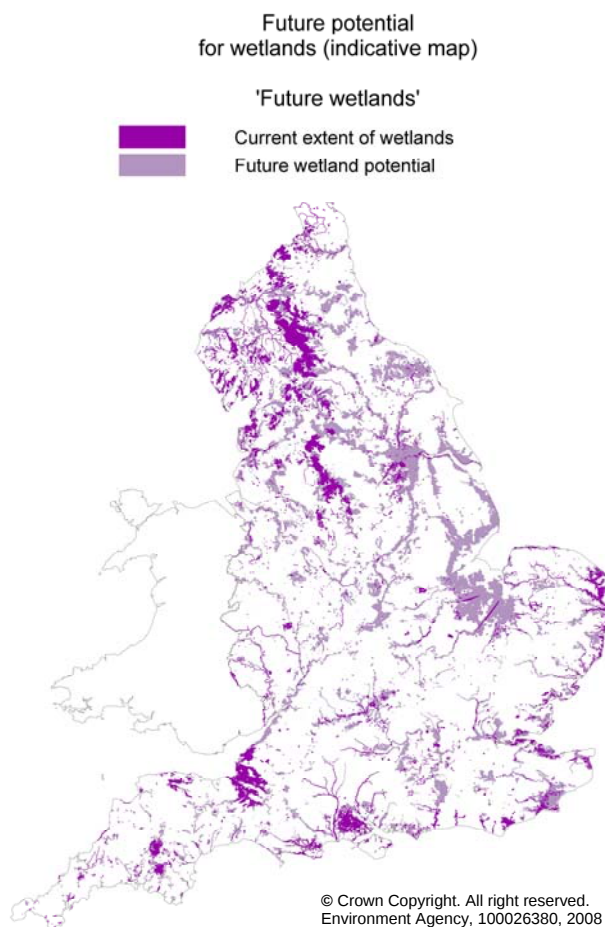


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Figure 5c
Restoring Sustainable Abstraction (RSA) sites

5.4 Water for wetlands

We have worked with our partners (Natural England, English Heritage, RSPB and the Wildlife Trusts) to produce a 50-year vision for England's freshwater wetlands (Figure 5d). This was launched in July 2008 and shows where new wetlands could be created and current wetlands restored, if enough water is available. The aim is to make space for water in our countryside, help people and wildlife adapt to a changing climate, protect our heritage and reap the benefits that wetlands can provide such as helping to moderate the extremes of flooding and drought.



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Figure 5d
England's freshwater wetlands 50-year vision

5.5 Population growth

One of the biggest pressures on water resources is the increase in population. It has risen at a faster rate over the past 10 years than the previous 20 across England and Wales as a whole and is forecast to increase at an even greater rate over the next quarter of a century (Figure 5e). By 2031, we expect the total population of England and Wales to grow by an extra 10 million people, an increase of 18 per cent from 2006.

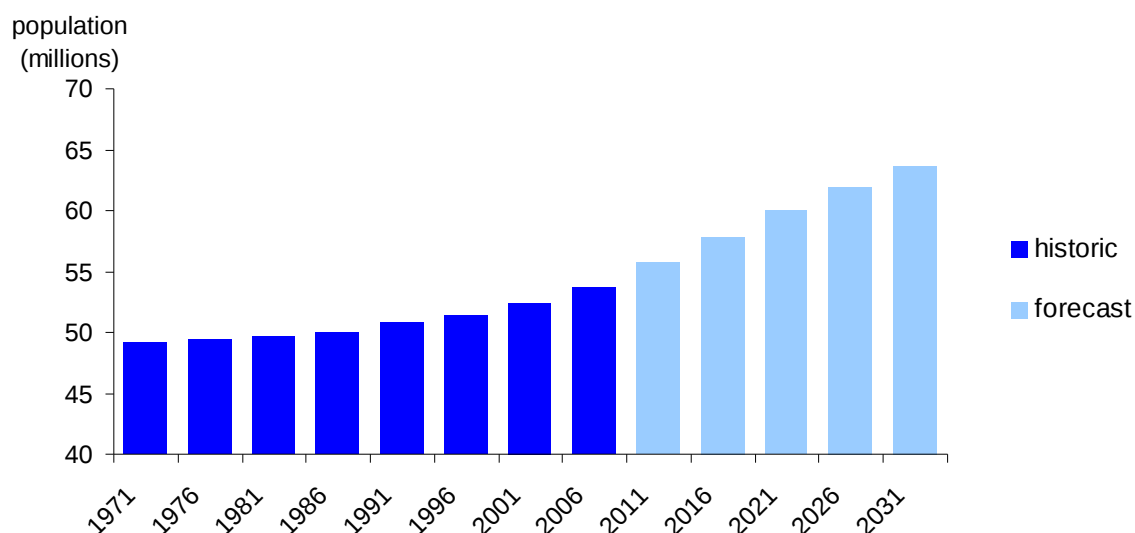


Figure 5e Population trends in England and Wales (source ONS)

The forecasts vary from place to place with the population in some parts of the country expected to increase by over 40 per cent (Figure 5f). Many of the growth areas are in places where the water environment and/or water supplies are already stressed.

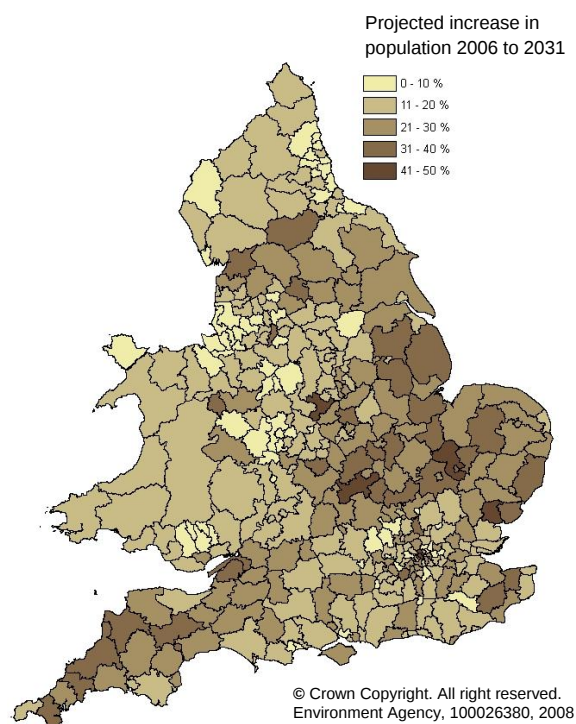


Figure 5f Projected population growth 2006 to 2031 (source ONS)

5.6 Trends in household metering and water use

One of the main responses to the pressure on supplies from a rising population is to increase the number of households that pay for water by metered supply. Water companies are currently following a statutory process to produce new water resources management plans. All companies are planning to continue their meter installation programmes (Figure 5g). Companies supplying water to areas of serious water stress in South East and Eastern England (see Figure 4b) plan to install meters at a faster rate than the rest of England and Wales so that by around 2020, 80 per cent of households in those areas will have meters.

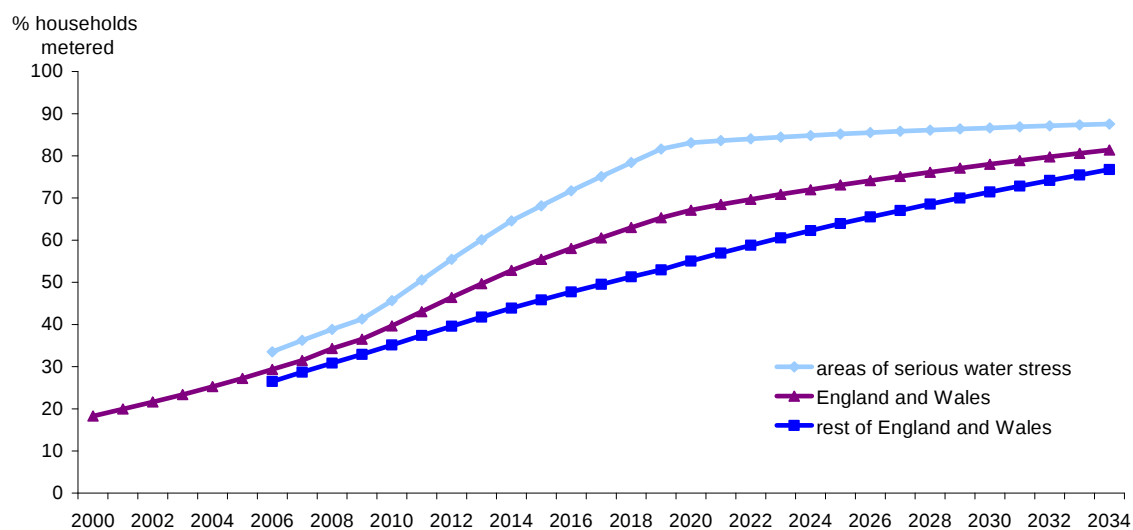


Figure 5g Forecast household metering in England and Wales
(from water company draft water resources management plans 2008)

On average, over England and Wales, water companies expect the water used by both metered and unmetered households to increase slowly from year to year. However, the average use per person for all households is expected to fall because the forecast water savings resulting from installing meters should more than compensate for the underlying growth in water use (Figure 5h).

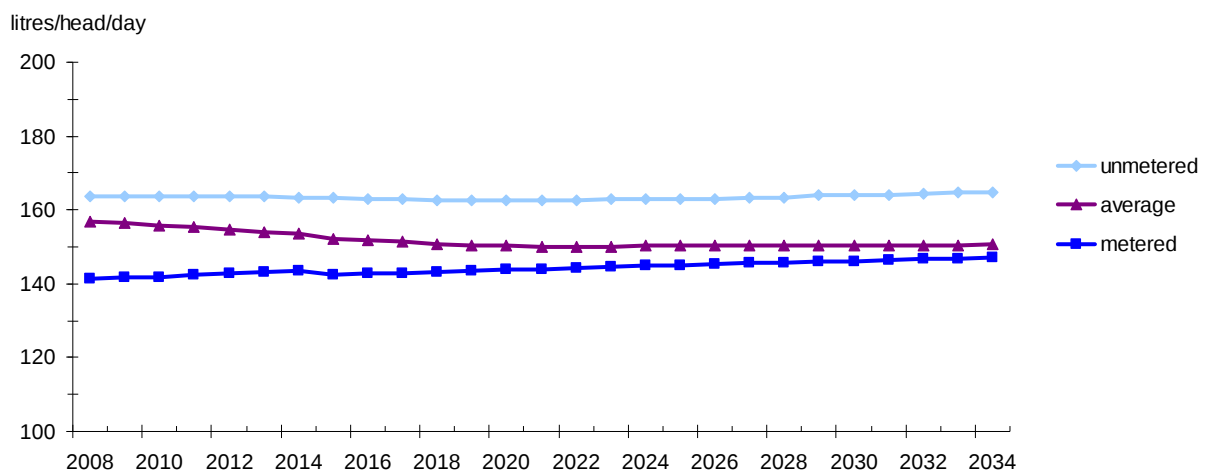


Figure 5h Forecast household water use (dry year) in England and Wales
(from water company draft water resources management plans 2008)

5.7 Climate change

We have recently assessed how climate change could affect the water resources that will be available in the future (Figure 5i). Our work shows that there will be a significant impact on average river flows across England and Wales by the 2050s. By 2050, river flows in winter may increase by 10 to 15 per cent but with lower flows in most rivers from April to December. River flows in the late summer and early autumn could fall by over 50 per cent, and by as much as 80 per cent in some catchments. Overall, this could mean a drop in annual river flows of up to 15 per cent.

If effects of this magnitude occur, this will probably be the biggest challenge we need to overcome to ensure that there is enough water for people and the environment.

Related work indicates that climate change may reduce the recharge of aquifers and lead to a consequent lowering of groundwater levels.

As well as reducing river flows and groundwater levels, climate change will have other effects on the water environment, such as increased water temperatures. The warmer climate will also mean higher demands for water by both households and by direct abstraction for crop irrigation.

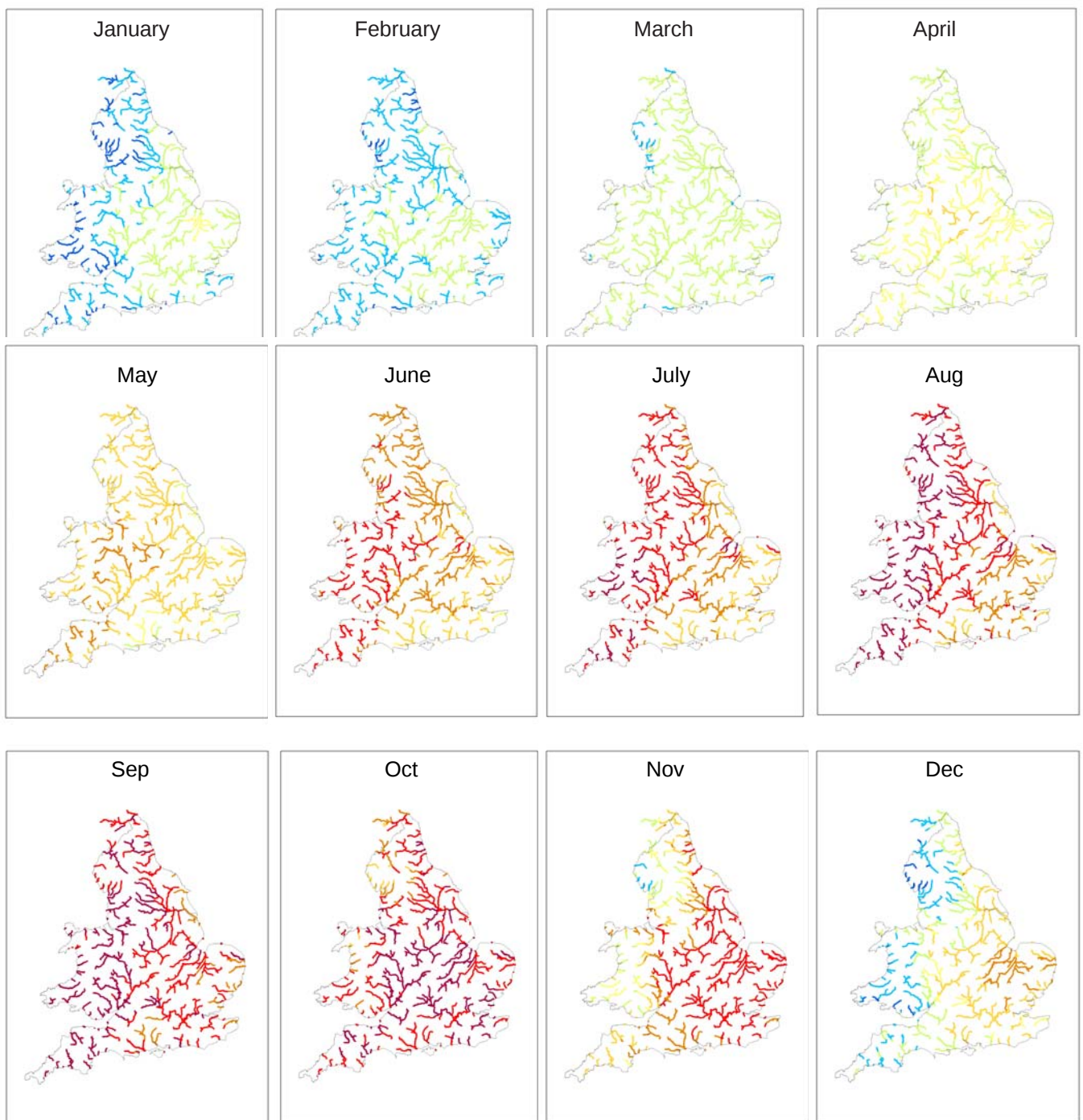
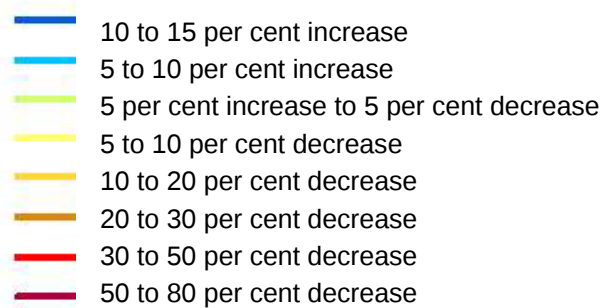


Figure 5i
Percentage change in mean monthly flow
between now and the 2050s using the
medium high UKCIP02 scenario



6 Future strategy

The water resources across much of England and Wales are used intensively and are subject to significant pressures. Meeting the future demands of society, whilst protecting and improving the environment in the face of the impact of climate change, will be a daunting challenge.

The future management of this precious resource is too important to be left to chance. In early 2009, we will publish our strategy for managing water resources in England, and Wales, for the next 50 years.

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