

Water in Scotland

Is There a Problem in Scotland?

There is no immediate problem of drought or water scarcity in Scotland. It is not yet a mainstream political issue. It is not yet a media issue.

However there are underlying factors that point to the need to address water efficiency now.

Growth in Consumption

There is a need to extend the capacity of water and wastewater services for new housing and business in parts of Scotland. There is also a need to meet customers' changing demand patterns; the capacity of the assets may need to increase to meet both the demands of new customers and growth in usage from existing customers.

Scotland has seen a slower rise in demand than other parts of the UK but per capita consumption has still risen by 6% in the past two decades. Even though there is a projected fall in Scotland's population the total domestic demand for water will continue to rise, due to changes in household size and changes in usage patterns. There is a projected rise in domestic consumption to 150 litres per person per day by 2015. Demand for water still lies at the upper limit of the 1994 demand projections.

There is a general predicted increase in industrial consumption of about 15% by 2015. Most the growth is in the driest areas of the country. There is a predicted decline in overall agricultural use, but a shift to higher quality production and constraints on direct abstraction may lead to a greater use of mains water.

Climate Change

Climate change will have significant effects upon Scotland's water resources.

- Scotland will be warmer. This will lead to increased tourism and increased domestic and garden watering use; it will also lead to increased industrial cooling, and could lead to water quality issues with algal blooms in supply reservoirs.
- Scotland will be wetter but the rainfall will be more intense. There will be more rainfall in winter but less in spring and summer. Unlike Southern England and Eire, Scotland had a wetter than average winter in 2006.
- Rainfall variability could lead to resource problems in the East.
- Rainfall intensity could lead to water quality problems with increased diffuse pollution.

- River flow records for a selection of Scottish rivers over the past decade show that there has been an increase in high flows, but at the same time a steady decrease in the level of normal flows. This points to more floods but less available water.

Because Scotland relies predominantly on surface water abstraction it is susceptible to short-term variability in climate.

Increased water efficiency is a low-cost low-risk option for dealing with climate change impacts on water resources.

Environmental Impacts

The Water Framework Directive assessment has shown that a significant number of water bodies are affected by abstraction; in addition development pressures threaten a large number of additional sites.

The predicted changes in climate will have an effect upon Scotland's ecosystems and these effects may be exacerbated by increased abstraction during dry spells.

Threats to Supply

As a nation Scotland has a surplus of water supply over demand and this is likely to be maintained into the foreseeable future. However, due to the structure of the distribution network, and the increased variability of rainfall, there is a possibility of localised water resource shortfalls in certain areas; these are mainly but not exclusively in the South and on the East coast.

The drought a few years ago in Dundee illustrated the vulnerability of surface water supplies to changes in climate, but it has also highlighted the fact that Scottish Water is able to use demand management effectively to address supply-demand imbalances.

Sustainability Issues

Demand management is not just about drought or about the supply demand balance: there are also issues of resource productivity and wider sustainability.

Tap water is a precious resource, with embedded energy, money and chemical use, and an associated environmental impact. In many Nordic states with similar water resource availability to Scotland, there are large scale programmes of water efficiency.

Scottish Water is Scotland largest consumer of electricity and this is mainly used for pumping, a reduction in demand would decrease energy use thus reducing to Scotland's green house gas emissions.

Water efficiency may provide a cost effective method to address supply deficits, and could augment or replace supply-side action.

The water environment is one of Scotland's key natural assets and water efficiency can help protect this.

Water and wastewater service provision is already becoming a factor in new industrial and housing development and it is essential that growth is not constrained by a lack of water. Water efficiency offers a sustainable approach that enables new development whilst limiting the financial and environmental impacts.

Conclusion

Growth in water consumption, climate change and the challenge of meeting the infrastructure requirements of new development alongside the need for enhanced environmental protection, all indicate that there is a potential water supply problem in parts of Scotland.

There are also wider issues of sustainability and the protection of a valuable resource that highlight the need for concerted action on water efficiency.

The threats faced by Scotland offer an opportunity to develop a Nordic approach to water efficiency that, combined with the current work on the implementation of the WFD will put Scotland at the forefront of water protection and demand management.