

Department for Environment, Food and Rural Affairs

Water abstraction reform and drought

Supporting information for digital dialogue on drought

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Introduction

This document provides some key facts about drought and information on current drought management tools to facilitate participating in the drought digital dialogue.

Background

Droughts are a natural event. The most recent was in 2010-12 across parts of the UK – they can occur at any time of year. Low levels of rainfall during winter in particular can have serious impacts on the supply of water since winter rains are essential to replenish groundwater and reservoirs.

In the past two hundred years there have been 11 multi-year droughts in parts of the UK, four of which have occurred in the last 25 years:

- 1990-1992
- 1995-1997
- 2004–2006
- 2010-2012

Will there be more frequent and/or more severe droughts due to climate change?

Projections of future river flow are uncertain because of uncertainties in both future rainfall and evapotranspiration. Studies tend to agree on a trend towards similar or slightly increased average winter flows and reduced average summer flows, with mixed patterns in spring and autumn.

Some studies indicate increases in the magnitude and frequency of short droughts (<18 months) but there is little information on changes in longer droughts.

It should be noted that historically there have been far worse droughts than we have recently had and there is a risk that these could occur again.

What are the effects of drought?

Drought has a number of consequences both for business and the environment:

- Soils dry out, which impacts crops and other flora and drives demand for water for irrigation;
- River flows drop, which may result in fish kills and changes to spawning activity as rivers dry out and a fall in oxygen concentration; and

- Reservoirs and groundwater may not be replenished - we rely on rain from October to March to replenish our reservoirs and groundwater, which provide much of the water for our public supply.

All of these impacts mean there is less to abstract for our public water supply, industry and agriculture.

How do we plan for droughts?

The Environment Agency/Natural Resources Wales and the public water supply companies, draw up detailed plans to deal with droughts when they occur, helping us to reduce the impacts and consequences of these events.

We cannot prevent droughts occurring but we can take steps to reduce their impacts and consequences. Because around half of the water we take from the environment is used in our homes and commerce we have two¹ plans that address drought and its management: water resources management plans and drought plans.

Water resources management plans

Each water company must prepare and maintain long term water resources management plans. These explain how each company aims to achieve a sustainable supply-demand balance for the public water supply while protecting the environment. They set out how the company will meet demand for water, considering current and future demands.

The measures identified in a water resources management plan are intended to build in resilience in to our supplies, and will generally involve a combination of providing new resources where they are sustainable (e.g. reservoirs and perhaps desalination plants) and demand side measures (such as fixing leakage and behaviour changes through metering and water efficiency). The plans are not static but are intended to evolve in response to the implications of climate change, demographic change and increasing demand from new development.

A water resources management plan is the main mechanism to ensure unrestricted quantities of drinking water being available most of the time.

Drought plans

The water companies must also prepare and maintain drought plans. These set out how water companies will respond to a drought - setting out how they will continue to meet their duties to supply adequate quantities of drinking water during drought periods while

¹ Water companies also prepare emergency plans that set out their operational response to a range of emergencies, including drought scenarios beyond those planned for in their statutory drought plans.

protecting the environment. The plans contain a series of trigger points for action by the companies. The actions taken depend on the severity of the drought and include such measures as restrictions on non-essential use as well as taking more water from the environment than abstraction licences allow.

Although in theory water companies could provide us with guaranteed water in all realistic circumstances, the cost to a water company of having an infrastructure capable of withstanding prolonged drought without recourse to restrictions on use (non-essential use bans - 'hosepipe bans') or other demand management options would be very high and the additional costs would be borne by consumers.

The measures in the plan are intended to both protect the environment as far as possible (at a time when drought will already be causing stress to wildlife), as well as ensuring that our essential water needs are met.

Roles and responsibilities at times of drought?

Various organisations have a formal role in dealing with drought:

Government

The Government sets policies relating to water management, within the regulatory framework set by Parliament, and informs the privatised water companies and the regulators of a wide range of relevant policies, legal requirements and standards that affect water management. During a drought its main formal role is to consider and determine applications for drought orders from water companies and the Environment Agency / Natural Resources Wales.

Water companies

During a drought, water companies will implement a series of actions identified in their drought plan, to reduce demand or increase supply as appropriate.

Water companies should ensure that leakage is kept under control; this helps reduce the volume of water taken from the environment. They should consider enhancing leakage control in times of drought.

Water companies can work closely with their customers to explain the pressures on local water supplies and how to use water wisely to make savings on customer bills as well as for the environment – this will put them in a better position if the impacts of drought hit harder.

Environment Agency/Natural Resources Wales

During a drought the Environment Agency/Natural Resources Wales work with water companies to find the best ways of managing supplies and decide whether to issue drought permits or to reject permit applications.

The Environment Agency/ Natural Resources Wales can apply for drought orders where necessary to protect the environment. The Environment Agency/Natural Resources Wales may also restrict abstractions from farmers if necessary to protect the environment and manage water availability for essential public supplies. This is done in liaison with local farming groups and industry representatives to prioritise needs and share the reduced water supply to maintain productivity as far as possible. Restrictions are a last resort.

Society

All parts of society have a role to play in responding to a drought, both in terms of reducing our demand for water in the short term and acting to protect the environment. Using water efficiently will help to ensure that enough water is available for our essential needs in homes, to produce food, products and services and to protect our valuable natural environment.

Water recreational users (anglers, canoeists, birdwatchers etc)

Regular visitors and users of rivers will see the impacts of drought and can report problems – eg wildlife or rivers/lakes/wetlands suffering from drought – to the Environment Agency.

Business users

Efficient use of water by business saves money and makes good business sense, as well as helping to preserve our water resources during periods of drought. WRAP (Water and Resources Action Programme) provides advice on reducing water consumption in business and commerce on its web site.

Farmers and other businesses who abstract water directly from the environment should consider participating in local water abstractor group discussions to agree how they best share local water supplies amongst them.

Drought management

During a drought, the Environment Agency, Natural Resources Wales and water companies make decisions on whether additional action is needed. The additional

regulatory tools available to help manage abstraction during a drought, including licensing control, are contained within the Water Resources Act 1991 (WRA). The WRA includes:

- a) Provisions for making drought permits and drought orders, including emergency drought orders where there has been an exceptional shortage of rain. These can allow water companies (or EA/NRW in the case of a drought order) to take more water or relax conditions on a licence, for example to allow a reduced flow; and
- b) Provision for water companies to apply to EA/NRW for a drought permit, where there is a serious deficiency of water supplies, to allow them to take from specified sources or modify or suspend licence conditions.
- c) Provision for water companies or EA/NRW to apply to the Secretary of State for a drought order (ordinary or emergency) which can include a range of measures to manage abstraction and discharge leading up to prohibiting particular uses and establishing stand pipes in an emergency order. The EA/NRW can claim any charges relating to a drought order or permit from the water company (e.g. any inquiry or additional monitoring to assess impact).
- d) Emergency variation of spray irrigation licences to reduce or stop abstraction where there is an exceptional shortage of rain (section 57).

Section 57

Section 57 of the Water Resources Act 1991 gives the Environment Agency / Natural Resources Wales powers for “Emergency variation of licences for spray irrigation purposes when there has been an exceptional shortage of rainfall or other emergency.” Groundwater licences can also be restricted through this power if the abstraction is likely to affect the flow or level of the river.

Section 57 was widely used in the early 1990s in parts of the East of England although some farmers felt that it was implemented too quickly and without sufficient warning. This has led to a more engaged phased approach to section 57 restrictions.

In 2005 restrictions were close to being applied in the Wye catchment in Wales as river levels were approaching the trigger level. However, after consultation with spray irrigators in the area it was decided that reduction / cessation of these licences would provide limited contribution to river flows as many abstractors were due to stop irrigating. As a result it was decided it would be inappropriate to introduce S57.

Section 57 restrictions were used in East Anglia in 2006 following engagement with the abstractors who would be affected. The restrictions were introduced in a phased manner and ranged from being allowed to abstract just half of their licensed quantity to full bans. In this instance a large uptake of voluntary reductions delayed the need to introduce formal restrictions until much later in the growing season than may have otherwise been necessary.

During the 2010-2012 droughts S57 was not used during the 2011 summer season, because the periods of lowest rainfall did not coincide with the main irrigation season so would have provided little benefit.

Drought orders

Section 73(1) of the Water Resources Act 1991 gives the Secretary of State / Welsh Ministers the power to make ordinary and emergency drought orders to provide more flexibility to manage the effects of drought on the environment, when there is 'exceptional shortage of water. Secretary of State or Welsh Ministers must be satisfied that a situation exists or is threatened, whereby there is such a deficiency in flow or level of water in any inland waterway to pose a serious threat to any flora or fauna which are dependent on those waters. The powers are wide ranging and could include both licensed and non-licensed use of water. Drought orders can be effective for up to six months, with the option to extend for up to a further six months.

Historically there have been a few occasions when the Environment Agency / Natural Resources Wales (or predecessors) have applied for drought orders to modify reservoir compensation releases or vary their own licences. The Environment Agency / Natural Resources Wales have never used drought orders to stop or limit the abstraction of water by other abstractors.



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