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Managing drought in England and Wales

March 2008

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1 Introduction

This document explains how droughts are managed in England and Wales and who is responsible for managing them.

The Environment Agency has drought plans in place that set out the operational activities that it will take in a drought. Water companies also have drought plans in place to show how they will manage water supply through a drought. This summary is intended to provide some background to supplement the operational details contained in these plans.

Droughts are natural events. A drought happens when a period of low rainfall creates a shortage of water for people, the environment, agriculture, or industry. Some droughts are short and intense, for example, a hot, dry summer, while others are long and take some time to develop.

Droughts can happen anywhere in England and Wales, not just the drier parts of south-east England. Some droughts affect a large area while others are concentrated in a few catchments. Every drought is different and each can have a different effect on people and the environment.

2 Responsibilities for managing water resources

In England and Wales, the main bodies responsible for managing water resources are the Environment Agency, water companies and the Government.

The Environment Agency is responsible for securing the proper use of water resources in England and Wales and making sure there is enough water available for all needs including the environment. We achieve this by regulating the abstraction of water, monitoring the environment and working closely with the water industry and other abstractors to manage resources.

Water companies' water supply duties are set out in the Water Industry Act 1991. Water companies are responsible for developing and maintaining an efficient and economical system for public water supply in their area, without damaging the environment or affecting the needs of other water users.

Defra and the Welsh Assembly Government are responsible for the policies relating to water resources in England and Wales. They ensure the legislative framework for water resource management is fit for purpose. They direct companies on the development and content of their water resource and drought plans.

These bodies have their own distinct responsibilities for drought management. Further details are included in the References section.

3 Drought planning

In a drought available water is reduced and as no-one knows for certain when a drought will end, there is a need to conserve supplies so they last as long as possible. All organisations involved in dealing with the effects of drought should plan their activities to prepare in case a drought occurs and to ensure that the responsibilities of each different party are clearly defined and understood. Effective water resources and drought management starts with planning, both in the long-term and short-term.

3.1 Water companies

All water companies in England and Wales have a duty to prepare 25-year plans showing how they will manage their water resources into the future. In these plans, companies show how they will collect, store and transport water to meet demand in a dry year.

Due to the variable nature of rainfall, it is essential that water companies are prepared in case more unusual prolonged periods of dry weather threaten the security of their supplies. For this reason, water companies have drought plans which complement their long-term strategic water resources plans. The drought plans set out the range of short-term actions necessary to monitor and manage the impact of drought on their customers and the environment. The actions a company might take range from publicity campaigns and changes in normal operations to customer restrictions and drought permits or orders. It is important that companies plan these actions in advance in order to consider any potential impacts on the environment and other water users and plan measures to avoid or mitigate against these.

3.2 The Environment Agency

The Environment Agency has developed drought plans for all of its areas, regions, for Wales and its head office. Each part of the organisation has a plan in place reflecting the different operational responsibilities, setting out the steps it will take to recognise, monitor and lessen the effects of a drought. The plans set out the actions that can be taken at different stages throughout the drought and detail the indicators that will determine the various actions. They also provide details on the Environment Agency's arrangements for reporting and communications.

3.3 Government

Defra and the National Assembly for Wales develop the legislation for drought management and make directions to water companies about their drought plans.

4 Drought management actions

The type of action taken to manage drought and the resultant disruption corresponds to the severity of a drought.

In the first phase of a drought water companies will often make changes to the way they operate their water supply systems to conserve water in order to meet customer demands.

At this stage, water companies and the Environment Agency will also encourage people and businesses to reduce demand for water using publicity campaigns and other communications.

In England and Wales, water companies can introduce restrictions on using hosepipes for garden watering and car washing. This is often the next drought measure that is taken. The Environment Agency has the power to restrict or ban agricultural spray irrigation if this is necessary to protect the environment.

Further drought measures require legal permission granted either by the Environment Agency or Ministers in the form of drought orders or drought permits providing that the applicant demonstrates that there has been an exceptional shortage of rain. The further drought measures that can be taken are:

- The Environment Agency can apply to restrict or ban abstraction to protect the environment;
- water companies can apply to abstract more water;
- water companies can apply to reduce other abstractions;
- water companies can apply to restrict certain types of water use.

Ultimately in a very severe drought, water companies can apply to restrict water demand by using either standpipes or bowzers. These measures have not been implemented for drought management since 1976.

Throughout a drought, the water companies monitor water availability by collecting data about the state of their water resources so that they can be aware of the onset of a drought and monitor its development. The Environment Agency monitors river flows, groundwater levels and the environmental impacts of the drought, and where possible, mitigates the impact of drought on the environment (for example, by organising fish rescues).

4.1 Responsibilities during a drought

The Environment Agency, Government, the local authorities and water companies all work closely together at every opportunity to ensure the effects of drought are minimised and to make sure that we manage the need for water of consumers, abstractors and other users whilst protecting plants and animals from damage.

The following table sets out the principal activities each organisation will take during a drought:

Government	<ul style="list-style-type: none">• reports on drought to Parliament, the cabinet and to the National Assembly of Wales;• contributes to publicity campaigns about using water wisely during a drought;• decides on drought order applications;• prepares for a state of emergency and co-ordinates emergency arrangements with local resilience groups in exceptionally severe droughts.
Environment Agency	<ul style="list-style-type: none">• monitors environmental indicators such as river flows, groundwater levels, reservoir levels and river ecology to recognise the onset and development of droughts;• reports the state of water resources during a drought to the public,

	<p>Government and the media;</p> <ul style="list-style-type: none"> • checks water companies are following their drought plans and taking the necessary actions to protect public water supplies; • deals with drought permit applications from water companies to allow them to abstract more water without damaging the environment; • influences and advises water companies on managing water resources; • promotes awareness of drought and water efficiency; • protects the environment when water levels or river flows are low by enforcing abstraction licence conditions and restricting spray irrigation if required; • carries out actions to mitigate the impacts of a drought; • can apply for drought orders to protect the environment.
Water companies	<ul style="list-style-type: none"> • run publicity campaigns to encourage customers to use water wisely; • work with large businesses to reduce their water use; • increase work to find and fix leaks and reduce water pressure; • implement water conservation schemes; • obtain water to augment supplies from back-up emergency sources; • introduce hosepipe and sprinkler bans; • apply for drought permits or drought orders to abstract water; • apply for drought orders to ban non-essential use of water; • apply for drought orders in relation to discharges of water and abstractions by others; • as a last resort, apply for emergency drought orders to introduce standpipes, tanker supplies and rota-cuts for water supplies.
Local Authorities	<ul style="list-style-type: none"> • promote water efficiency to local communities with the local water company and the Environment Agency; • may assist water companies to implement emergency drought measures in an exceptionally severe drought.

5 Deciding when to take action

Droughts usually take a long time to develop and different actions are needed as a drought progresses. The sequence of actions will not always be the same as droughts are all different and need to be managed on an individual basis.

Defining and monitoring indicators helps the Environment Agency and water companies decide when a drought is happening and what actions they need to take. These indicators are often called drought triggers and a range of different triggers are used to identify whether drought actions need to be taken. Triggers can be based on:

- hydrological thresholds: rainfall, river levels and flows, reservoir storage, groundwater levels;
- environmental indicators: water quality, ecology;
- levels of customer demand;
- management actions.

As a trigger is approached or crossed, it triggers a drought team within a water company or the Environment Agency to consider whether to implement a pre-determined action or move to the next stage of drought management. The drought team decides whether it needs to initiate action based on a range of factors, including present and forecast weather conditions and how effective the action would be.

6 The legislative framework

The legislation relating to drought management provides a structured approach for managing droughts in a flexible way.

6.1 Drought plans

Water companies have a duty to prepare and maintain a drought plan under the provisions of the Water Industry Act 1991 as amended by the Water Act 2003.

The Drought Plan Direction 2005 sets out the requirements for the preparation of a drought plan. The legislation defines a drought plan as "a plan for how the water undertaker will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water, with as little recourse as reasonably possible to drought orders or drought permits".

Water companies must submit their drought plans to Ministers in central Government or the Welsh Assembly Government. Ministers can direct the companies to change their plans or to publish them.

The Environment Agency acts as a technical advisor to Government and as such, advises Government on the water companies' drought plans and publishes detailed technical guidance on preparing drought plans in the *Water Company Drought Plan Guideline* (Environment Agency, 2005).

6.2 Drought orders and drought permits

Drought orders and drought permits are legal mechanisms to allow more flexibility in managing water resources under conditions of exceptional shortage of rain as allowed by the Water Resources Act 1991 (and amended by the Environment Act 1995 and the Water Act 2003).

Water companies can apply to the Environment Agency to authorise them through a drought permit to take water from specified sources or to modify or suspend conditions contained in their abstraction licences.

Drought orders are granted by the Secretary of State or the National Assembly for Wales on the application of the Environment Agency (in specific circumstances) or a water company. Drought orders can go further than drought permits as they can deal with discharges of water, abstractions and discharges other than by the affected company, supply, filtration, and treatment obligations. They can allow water companies to prohibit or limit particular uses of water.

Emergency drought orders go further than ordinary drought orders as they enable a water company to have complete discretion on the uses of water that may be prohibited or limited and to authorise supply by stand-pipes or water tanks.

Drought orders and drought permits: Information from the Department for Environment, Food and Rural Affairs, Welsh Assembly Government and the Environment Agency (Defra, 2005) provides detailed information on drought orders and permits.

6.3 Hosepipe bans

Water companies can impose hosepipe and sprinkler bans under their own powers in the Water Industry Act 1991. They do not require any approvals. Before imposing a ban the water company has to be satisfied that a serious deficiency of water available for distribution exists or is threatened.

Hosepipe bans are temporary measures that will reduce the demand for water. They are normally one of the first steps taken by a water company to protect its supplies during a drought.

6.4 Widening the scope of the hosepipe ban powers

Government has recently consulted on proposals to replace the hosepipe ban powers of water companies with similar powers to ban a wider range of discretionary uses of water. They also proposed to amend the Drought Direction 1991 which sets out the uses of water which can be restricted or prohibited using drought orders. The Government plans to make changes to the legislation in the near future. More information on this consultation is available on the Defra website.

6.5 Spray irrigation restrictions

The Environment Agency has powers to enforce restrictions on spray irrigation during periods of drought. Most abstraction licences for spray irrigation now contain conditions where the licence holder has to reduce or stop abstracting water once the river has dropped to a certain level. However, some older licences do not have these restrictions and in these cases we use section 57 of the Water Resources Act 1991 to impose restrictions when necessary.

Restricting spray irrigation can seriously disrupt an agricultural business so these restrictions are only implemented when the environment is threatened. The Environment Agency works with abstractors, keeping them informed about possible restrictions and seeking voluntary reductions in water use first.

References

Defra, 2005. *Drought orders and drought permits*. Information from the Department for Environment, Food and Rural Affairs, Welsh Assembly Government and the Environment Agency.
<http://www.defra.gov.uk>

Environment Agency, 2005. *Water company drought plan guideline*. Environment Agency, Bristol.

Environment Agency drought plans – found on Environment Agency website.
http://www.environment-agency.gov.uk/subjects/waterres/1014767/1370506/1401682/1445410/?lang=_e

Water company drought plans – found on relevant water company website.

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