Yorkshire and North East Region Drought Plan

January 2012

We are the Environment Agency. We protect and improve the environment and make it **a better place** for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

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Yorkshire & North East Region Drought Plan - Executive Summary

What is the drought plan?
As a regulator, we carry out a range of activities to protect the environment and implement the priorities of central government. We have a duty to secure the proper use of water resources in England and Wales. We monitor water in the environment, and issue abstraction licences to regulate who can take water from the environment.

We have produced this drought plan to explain how the Yorkshire and North East Region will react during a drought to protect public water supplies and the environment. Detailed information on droughts and responses to frequently asked questions can be found via our website: http://www.environment-agency.gov.uk/homeandleisure/drought/31791.aspx

Why do we write it?
Droughts do not happen on a regular basis, the last major drought being in this Region in 1995/6, therefore it is important that we know how to react in order to protect public water supplies and the environment. Drought plans are essential for managing water resources and help us make the right decisions at the right time.

We rewrite our plans roughly every three years - around the same time as water companies develop their statutory drought plans. We do this to ensure the plans align and that lessons from any intervening dry periods have been incorporated into both plans. This single document replaces all previous Environment Agency drought plans for our Region and should be considered alongside the statutory plans of our local water companies.

What does it contain?
The plan contains background information on what we do to manage water resources. It also contains actions and information specific only to the drought plan. The plan contains:

- an outline of how we will manage water resources during a drought and define our role and responsibilities;
- details of the structures and teams involved in managing the drought;
- the steps we will take to respond to the competing interests of the environment, the need for public water supply and other abstractors;
- what additional environmental monitoring we will carry out that is specific to drought;
- a framework for liaison with water companies, abstractors and others interested in water resources;
- a list of triggers, decisions and actions we will carry out as a drought escalates.

The plan also details the different stages of drought management. Droughts tend not to be sudden events therefore we escalate activity and use a weight of evidence approach before deciding which drought status we are in. Details on the different statuses can be found in Section 3 of the plan.

It is also important to recognise that this plan affords us some flexibility. Each drought and the impact on different sectors and the environment will be unique, and our response will have to vary dependent on the prevailing conditions.

Who's involved?
The drought plan describes the teams we will establish in a drought situation. We will also work with colleagues in other regions and in National teams. To manage a drought effectively, we will need to work with abstractors (including those for agriculture and public water supply), British Waterways, Natural England and a range of interested parties. We have actions associated with triggers and a communications plan within our drought plan which help us to manage a drought and inform the right people at the right time. The triggers can be found in Section 3 and the communications plan can be found in Appendix C.

Which are the most important bits?
The plan contains detail of the activities we will take relevant to managing drought. There are a number of sections which relate to internal processes which are useful for Environment Agency staff when managing a drought but of less relevance to the general reader.

The main component of the drought plan is the triggers and associated actions. Triggers are presented in Section 3. Reviewing this section will give you a good idea of how we will escalate our activities during a drought and what actions we would take. This is the main focus of the drought plan and would be relied upon to direct our activity as a period of drier weather escalates towards drought.

Changes to the plan
We asked for comments when a draft of this drought plan was made available for public consultation during 2011. We have amended parts of our plan in light of comments received.

Where can I find the plan?
The drought plan is available to the public via the Environment Agency website. There is a designated drought section at the following location: http://www.environment-agency.gov.uk/homeandleisure/drought/default.aspx.

If you have suggestions about how the Environment Agency can improve engagement with you during a drought, then please contact our Regional drought coordinator via email at: Drought.northeast@environment-agency.gov.uk

Contents

Summary

This plan tells you how we plan for and manage drought in the Yorkshire and North East Region of the Environment Agency. It sets out:

- our drought management structure;
- the drought management decisions and actions we may need to take and what will trigger these actions;
- how we monitor and measure the impacts of drought;
- how we deal with drought permit and drought order applications;
- how we report on drought;
- how we will keep people informed of what we are doing during a drought.

Weather conditions vary both across the country and within our Region. A drought might not be region-wide but will still need us to respond in a way that safeguards public water supplies and protects the environment as much as possible. This is made all the more difficult as each drought develops in a different way. The varied wildlife and habitats across the Region also respond very differently to drought conditions. These will require site specific responses and the plan reflects the need for a flexible response to prevailing conditions.

This single document replaces all previous Environment Agency drought plans for our Region and should be considered alongside the statutory plans of our local water companies.

Our drought plan focuses on what we need to do as a drought develops to protect the environment and users of water not supplied from public water supply sources including those who use water for agriculture, industrial needs, navigation or amenity purposes. In particular the plan shows how we will work with the water companies during a drought. Each of the three water companies in our Region (Hartlepool, Northumbrian and Yorkshire Water) has their own drought plan (Hartlepool's plan is included in that of Anglian Water). These detail the actions the water company will take to maintain public water supply during a drought.

The last significant drought in the Region occurred in 1995-96, and much of the approach given in this plan is derived from experience gained in that event. We have also benefited from experience of dry weather in 2003, 2010 and 2011 to improve our plan and the actions we will take.

For more information on drought, we have a summary guide on 'Managing drought in England and Wales' which explains the roles and responsibilities of the Environment Agency as well as others such as water companies and local authorities. It provides additional information on drought management, for example, an explanation on

temporary water use restrictions, drought permits and ordinary drought orders. You can find it on our website at

http://www.environment-agency.gov.uk/homeandleisure/drought/31749.aspx.

1. Introduction

1.1. Purpose

A drought is a natural event that we can't prevent and a pressure that requires management. If a drought is developing, the environment is more sensitive to discharges and abstractions. We therefore work closely with water companies and others to minimise any potential adverse effects on people, business and the environment.

The purpose of a water company drought plan is to protect public water supplies during periods of drought. It is the purpose of our Environment Agency drought plans to protect the environment, direct abstractors and the interests of other users of the water environment. The two plans are therefore complementary.

We monitor the environment on a routine basis, not just in a drought. The results tell us what impact human activities, including those we regulate, are having on the environment. They help us identify trends, anomalies and problems, and provide information to support decisions on how best to manage any issues identified. This identifies the additional stresses caused by drought.

This document sets out the measures that the Region and Area drought teams within Yorkshire and North East Region will take to plan for and respond to droughts. It should be read in conjunction with the three Water Company drought plans (Yorkshire Water, Northumbrian Water and Anglian Water for Hartlepool Water) as the actions contained within all the plans may have consequences for the others. This plan covers the decisions and actions our teams take to detect the onset and end of drought and manage impacts during a drought.

We will update our drought plans annually and review our plans fully every three years or in line with water company drought plan updates. Where time and resource allow, we will consider undertaking drought exercises to make sure we are ready for drought. These exercises will be based on information from historic droughts and will test the actions in our plan. As this is a new plan, it will not have been tested through such an exercise.

This drought plan is an operational document as well as a public document. As a consequence, some of the links connect to internal Environment Agency documents which cannot be accessed externally.

The Regional drought plan will:

- give a structured and flexible framework to deal effectively and efficiently with droughts of different types and severity;
- demonstrate the actions that the Regional, Area and Technical expert drought teams may take and their associated triggers;

- seek to minimise the impact on the environment by anticipating measures required and acting to provide levels of protection consistent with available resource whilst continuing to meet statutory requirements for protected sites;
- set out a system of monitoring and reporting that identifies and tracks the onset, progress and recovery from drought;
- enable appropriate support to be given to water companies in the implementation of their drought plans, having due regard to our commitment to environmental protection and our statutory duty to ensure proper use of water resources;
- enable timely warnings (via meetings with key stakeholders and public relations media releases) to be provided to all abstractors and other interested parties.

Every drought is different and each can have a different effect on people, business and the environment. Some droughts affect a large area while others are concentrated in a few catchments. This drought plan provides a flexible framework for dealing with different drought events and is an operational manual for Environment Agency drought teams operating in Yorkshire and the North East. It covers the decisions and actions our teams take to detect the onset and end of drought and manage impacts during a drought.

1.2. Definition of drought

This drought plan states the indicators we currently use to classify the different stages of drought. Droughts are complex, can be measured in a range of ways and will affect different aspects of the environment and water users in differing ways.

We received feedback from consultees seeking greater clarity on drought status. We plan to make sure that our external communications during drought provide a clearer and more detailed description of how and where drought is developing, its effects and future risks.

1.3. Drought plans and responsibilities

As mentioned above, our drought plan should be read in conjunction with those of our water companies. Although we are all working to manage scarce water resources, water company and our drought plans have a different focus. Water company drought plans are statutory and each water company has to show how it will act to manage its stocks in a dry year to ensure that public water supplies are protected. Our plan is not statutory. It aims to show how we will reconcile the competing interests of the environment, public water supply, other abstractors and users of the environment.

1.4. Background information on Yorkshire and North East Region

The Yorkshire and North East Regional drought teams cover the areas east of the Cheviot Hills and Pennines from the Scottish Border south to the Peak district, and includes the major cities of Newcastle upon Tyne, Leeds, Kingston upon Hull and

Sheffield. The landscape ranges from the uplands of the Cheviot Hills, the North Yorkshire Moors and the Pennines to the lowlands of the Vale of York. The Region is divided into two Areas for management purposes as shown in Figure 1.

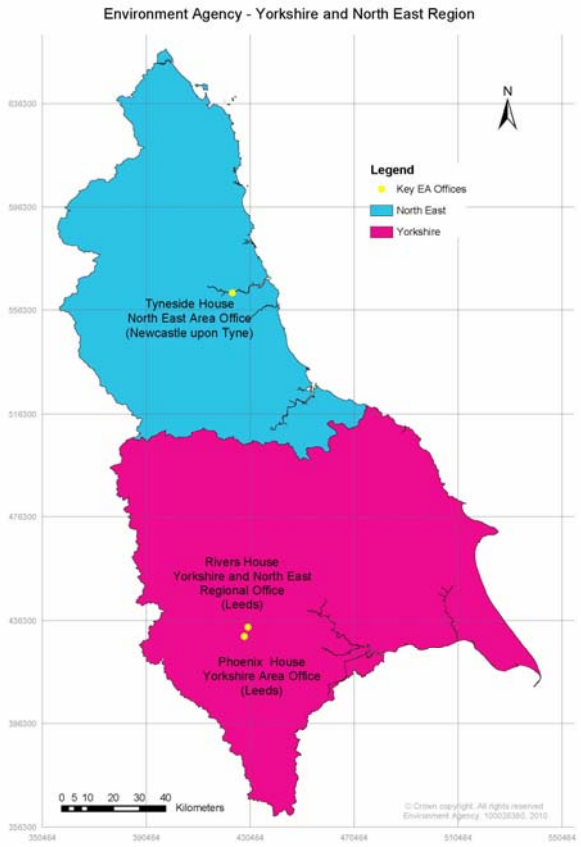


Figure 1 Environment Agency structure in Yorkshire and the North East Region

1.4.1. Water resources

Hydrology: The North East Area extends from the Scottish Borders to Teesside and includes the catchments of the Rivers Tweed, Till, Coquet, Tyne, Wear, Tees and numerous coastal rivers and streams.

The Yorkshire Area covers East, West and North Yorkshire, the majority of South Yorkshire and a small part of Derbyshire, including catchments of the Rivers Ouse (Yorkshire), Swale, Ure, Nidd, Wharfe, Derwent (Yorkshire), Esk, Aire, Calder, Don, Rother and Hull. All the rivers in Yorkshire Area, with the exception of the Esk, drain into the Humber Estuary but reflect different catchment characteristics: some drain largely rural catchments while others are more heavily constrained through urban areas.

Many of the rivers have reservoirs at their headwaters, particularly in Yorkshire Area. These can provide both public water supply and compensation flows, the latter being particularly important during periods of low flow. Examples include Gouthwaite on the Nidd, Winscar on the Don, Ryburn on the Calder and Lindley Wood on the Wharfe.

The rivers in our Region support significant abstractions for public water supply, industry, energy production and agriculture. They are an important source of drinking water for people who live outside the local area as water is transferred between catchments. In the North East Area, Kielder Water supports abstraction and flows on the Tyne, Wear and Tees whilst in Yorkshire Area, the Wharfe, Ouse and Derwent are all used to transfer water to other catchments.

The main catchments and rivers in our Region are illustrated in Figures 2 and 3.

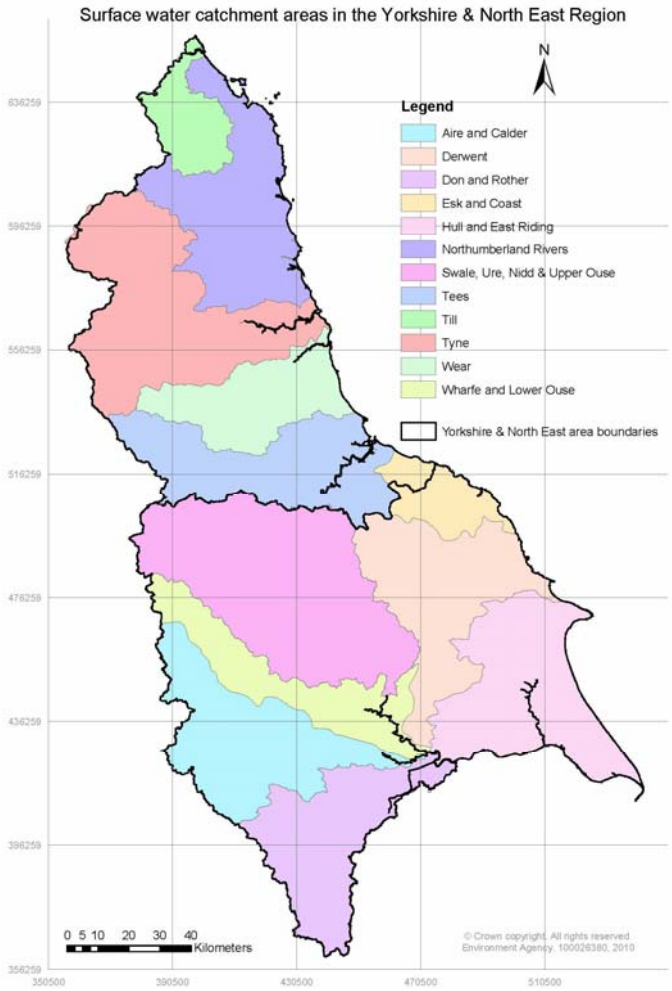


Figure 2 Surface water catchment areas in the Yorkshire and North East Region

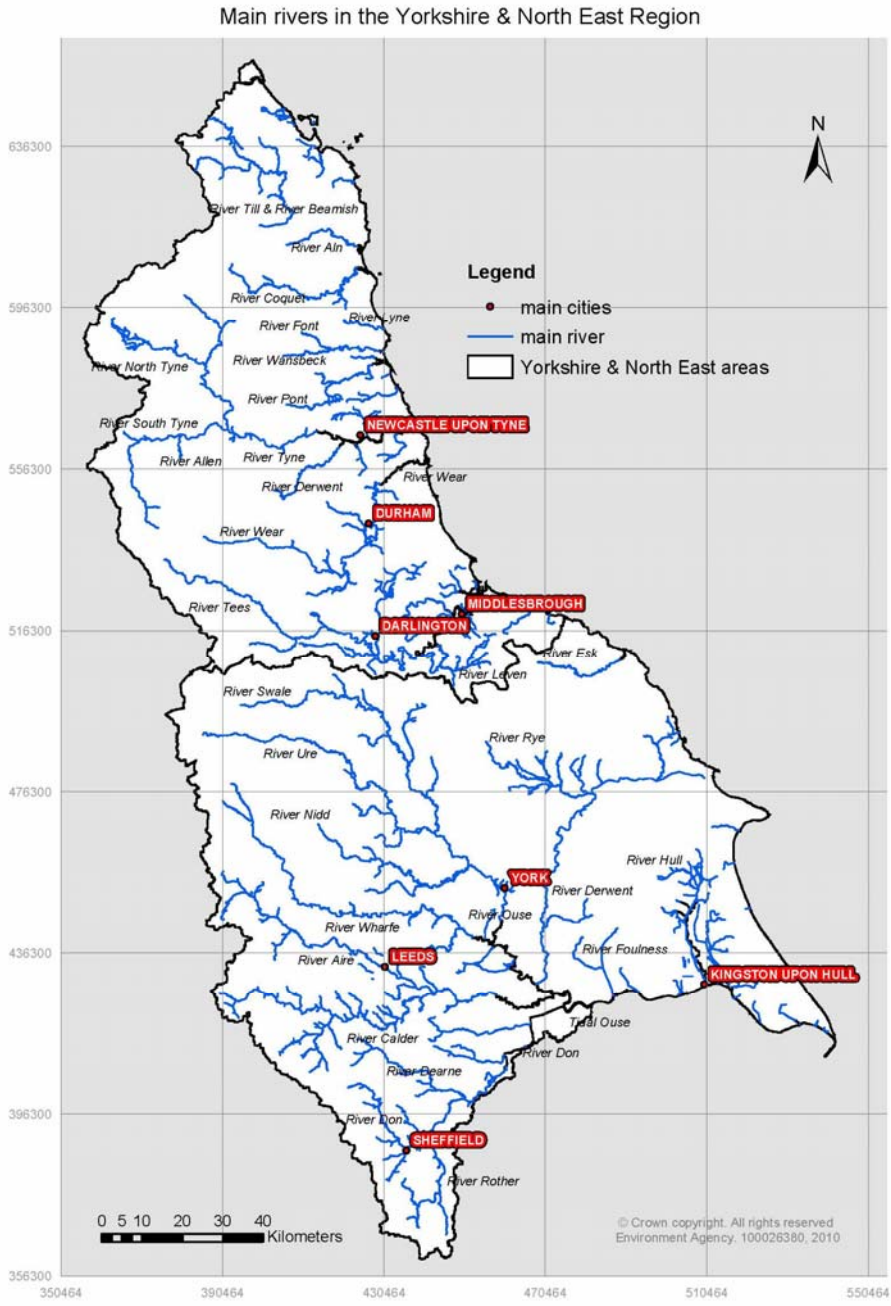


Figure 3 Main rivers in the Yorkshire and North East Region

Hydrogeology: Yorkshire and North East Region benefits from having several main aquifers from which good quality water can be abstracted (see Figure 4). The main aquifers within the Region include the Fell Sandstone (between Berwick and Wooler), the Sherwood Sandstone (extending from Doncaster to Teesside), the Magnesian Limestone (from Doncaster to between Darlington and Sunderland), the Corallian Limestone (north of the Vale of Pickering) and the Cretaceous Chalk of the Yorkshire Wolds. Secondary aquifers, including the Millstone Grit and Coal Measures, are locally important sources of water.

Groundwater sources can represent a significant proportion of a local area's source of public water supply. They are also vital for industry and agriculture. Droughts typically affect aquifers through reduced recharge and greater abstraction, but timescales differ as, depending on the source and nature of recharge, many aquifers naturally introduce a time-lag in response of groundwater levels to dry conditions.

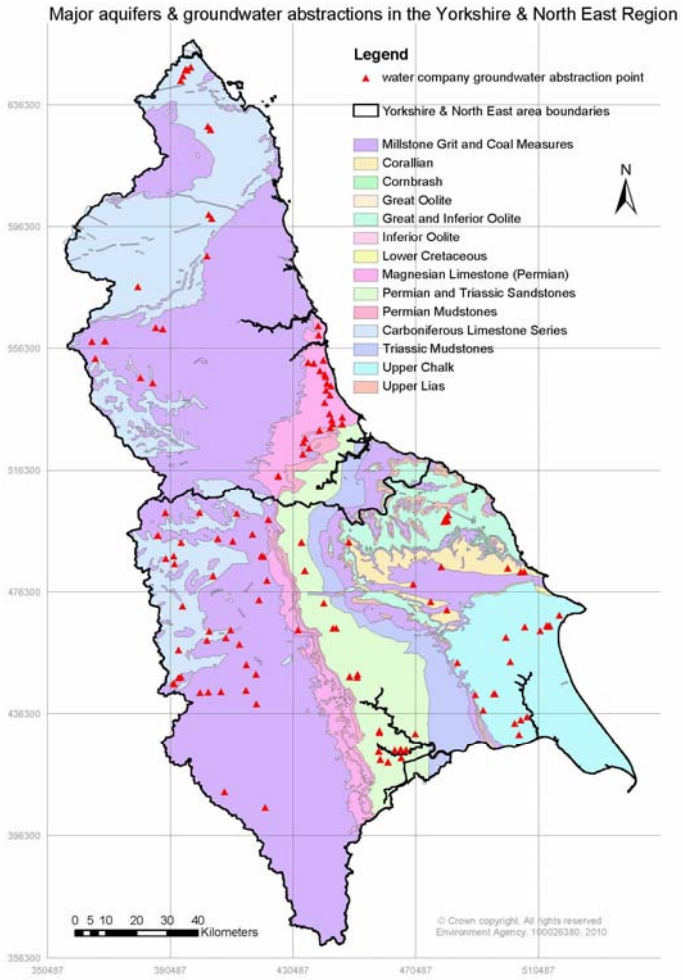


Figure 4 Major aquifers and groundwater abstractions in the Yorkshire and North East Region

1.4.2. Regulation of water resources

In Yorkshire and North East Region, water is abstracted from our rivers, groundwater sources, and from tidal waters for a range of purposes. The total amount of water licensed for abstraction within the Region is 5,279,424 Ml/a, with 2,333 licences[1] (see Table 1 below). The majority of abstraction (excluding tidal waters used in power generation) takes place from surface water sources (over 90 per cent of licensed quantity), including our many reservoirs. The main uses for water within the Region (again excluding tidal waters used in power generation) are for public water supply, fish farming, agriculture and industry.

Use	Total (Ml/a)	Total no of licences
Public water supply	1,463,698	167
Private water supply	4,334	189
Spray irrigation	26,941	1,005
Agriculture other than spray irrigation	4,332	277
Power generation	2,978,860	39
Other industry	559,301	571
Fish farming, cress growing and amenity ponds	233,807	66
Other	8,151	19
Total licensed quantity	5,279,424	2,333

Table 1 Numbers and volumes of abstraction licences for each use in Yorkshire and North East Region

Our new abstraction licences are issued with hands-off flow (HOF) conditions stated, designed to protect the environment at times of low flow. These are a standard type of condition on a licence which states that an abstractor cannot take water from a water source when the flow or level is below that specified in their licence condition. The HOF for an abstraction will be listed amongst its conditions at the time of issue. If no HOF is listed then the licence can abstract water under all conditions (assuming water is in the channel/aquifer). In our Yorkshire Area, we aim to notify licence holders with constraints before the spray irrigation season starts (usually April) giving an indication of prospects for abstraction for the coming season. In most instances we will contact licence holders to give them advance notice that they will need to cease abstracting. This is normally one week's notice as we have found that warning of HOF restrictions too far in advance introduces too much uncertainty to the abstractor as circumstances can rapidly change with any rainfall received. If

[1] Figures taken from ABSTAT report for 2009.

conditions do not improve we will then contact the licence holder to notify them to cease abstraction. It is important to be clear that it is the licence holder's responsibility to ensure they are compliant with the conditions of their licence.

An indication of a deteriorating water resources situation would be the need to enforce a higher than normal number of HOF licence restrictions. It is important to recognise that a HOF can come into force irrespective of the time of year, and is dependent upon the current water situation. For example, HOF's can restrict abstraction during the winter, affecting the ability of some abstractors to fill their storage reservoirs.

Many of our spray irrigation licences have HOF conditions, as shown in Table 2.

	No. licences with HOF condition	No. licences with HOF condition relating to level
Spray Irrigation	150	4
Other	50	3

Table 2 Number of surface water abstraction licences with cessation flow/level conditions (2011)

Although committed to protecting the water environment, we take into account the social and economic impacts of our regulatory measures on other users including industry and agriculture. Wherever possible, we will not make decisions which will impact on businesses without first giving notice or considering alternative solutions (for example voluntary rather than regulatory restrictions). We will also consider the number and time taken to manage restrictions as part of the wider assessment of the total impact on our own business.

1.4.3. Exempt Areas and purposes

The Environment Act 1995 (formerly part of the Water Resources Act 1963) currently exempts from licence control surface water abstractions from certain rivers and their tributaries in the border area between England and Scotland. This means that we do not regulate the abstraction of surface waters in the Till catchment. There are however, a number of abstractions in the area of the River Till Site of Special Scientific Interest (SSSI) within our Region which are consented by Natural England. In the event of drought or potential drought, management would be via liaison between the various responsible bodies, which include the Environment Agency, SEPA, Scottish Water, Northumbrian Water, Tweed Commissioners and the Tweed Foundation.

There are also some uses of water that are currently exempt from licence control.

We anticipate that these exemptions will be removed when parts of the Water Act 2003 are enacted.

1.4.4. Environmental issues

The Yorkshire and the North East Region boasts a wealth of internationally and nationally important wildlife habitats supporting a wide variety of plants and animals. Many of these sites (Figure 5) require water of suitable quality and quantity for their preservation.

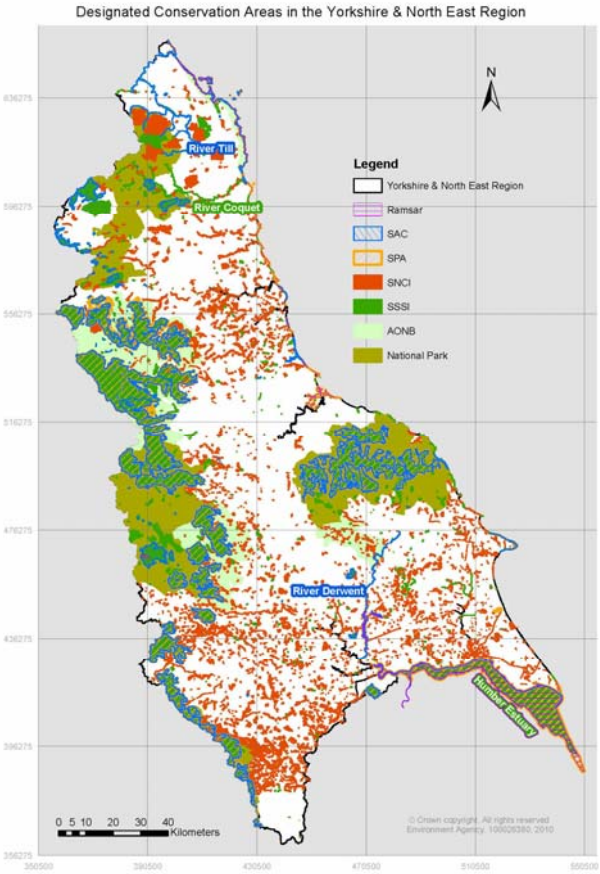


Figure 5 Designated conservation areas in the Yorkshire and North East Region

When considering actions we or the water companies take during a drought, we will ensure that we carry out our statutory duties (under Habitats Directive regulations and as a Section 28G authority under the Countryside and Rights of Way Act 2000), considering the impact on these important nature sites. Where necessary, we will carry out appropriate assessment of impacts.

Sites include:

- inter-tidal mudflats, salt marshes and rocky shore of the Lindisfarne coastal area;

- the pristine river environment of the SSSI designated River Coquet;
- North Pennine Moors and Upper Wharfedale;
- the complex of important riverine sites of the Lower Derwent Valley in Yorkshire;
- raised bog habitats of Thorne and Hatfield Moors;
- reed-beds, salt marshes and mudflats of the Humber Estuary.

For Habitats Directive sites, a full appropriate assessment of all permits associated with our regulatory duties was undertaken as part of implementing the Habitats Directive (the Review of Consents project). Our webpage at Habitats Directive gives more detail. This project was completed in 2010 and any permits requiring variations were either amended as appropriate or plans were put in place to effect change e.g. through the Periodic Review 2009 for changes to water company licences.

One particular consequence of prolonged dry weather in our Region is the heightened risk of moorland fires. These fires can require large amounts of water to be brought under control, and the upland rivers and reservoirs are sources for that water. We are looking at how we can work with our local resilience forums (LRFs), and the Fire and Rescue Service in particular, to manage upland fires with the least damaging impact on other parts of the environment. This could include identifying the best source of water for fire-fighting purposes. We will look to improve our approach and links with LRFs for our next drought plan.

1.4.5. Water companies

The Region has three principal water companies within its boundaries (see Figure 6). Yorkshire Water and Northumbrian Water are water and sewerage companies, whilst Hartlepool Water (owned by Anglian Water Services) supplies water only (Hartlepool sewerage being serviced by Northumbrian Water). A small area of Severn Trent Water and United Utilities water companies lie within our Region.

Public water supplies in the Region come from a combination of reservoir, river and groundwater sources. All public water supply abstraction is regulated through licences thereby making some abstractions less reliable in extended dry periods. To manage their water supplies during a dry period, water companies have a statutory obligation to produce a drought plan which they rewrite on a three yearly basis. Water companies will be publishing their revised drought plans in 2012.

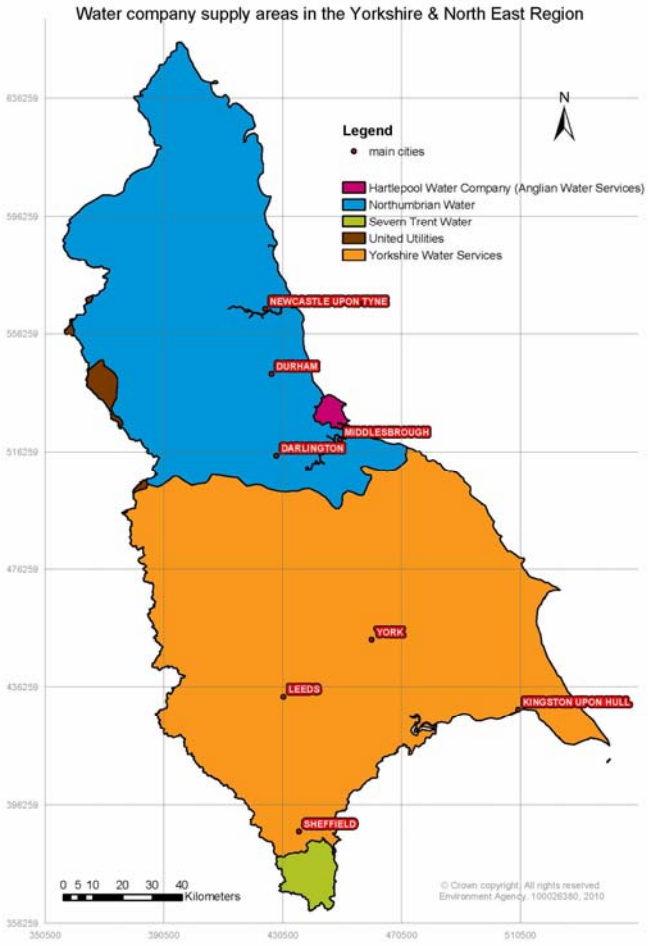


Figure 6 Water Company supply areas in the Yorkshire and North East Region

Northumbrian Water provides water and sewerage services from the Scottish border to North Yorkshire. It provides public water supply for major cities including Newcastle upon Tyne, Durham and Darlington. It also provides sewerage services for the Hartlepool area. It operates Kielder Water, Northern Europe's largest manmade lake, located in the headwaters of the River North Tyne. Kielder was designed to support a regional water grid, moving water into the Rivers Tyne, Derwent, Wear and Tees to support demand in Tyneside, Wearside and Teesside. Releases are directed through two hydroelectric turbines, installed within Kielder Dam. Water releases range from 114 to 1,330Ml/d and reflect the natural inflow into the reservoir, with more frequent discharges occurring during winter months. Kielder can support minimum maintained flows on the Rivers North Tyne and Tyne and in the Wear and Tees through the Tyne-Tees tunnel. A schematic of the transfer system can be seen in Figure 7. Currently there is also a small transfer from Northumbrian Water to Yorkshire Water (not shown in Figure 7) though this is due to finish in 2012.

Figure 7 The Kielder Transfer Scheme (from "The Tyne Catchment Abstraction Management Strategy", March 2005)

Yorkshire Water provides water and sewerage services across Yorkshire, operating over 120 reservoirs. To move water around the Yorkshire area, Yorkshire Water operates a grid as indicated in Figure 8. The operation of this grid is fundamental to how the company manages its water resources both in normal and under drought conditions. Yorkshire Water also has an agreement with Severn Trent Water transferring water into the grid system in the south of Yorkshire Water's operating area.

Hartlepool Water supplies potable water from the Magnesian Limestone aquifer to supply households and businesses in the Hartlepool area. The sewerage services for the area covered by Hartlepool Water are provided by Northumbrian Water.

United Utilities supply a minimal amount of water into the area and Northumbrian Water has a similar transfer back into United Utilities area.

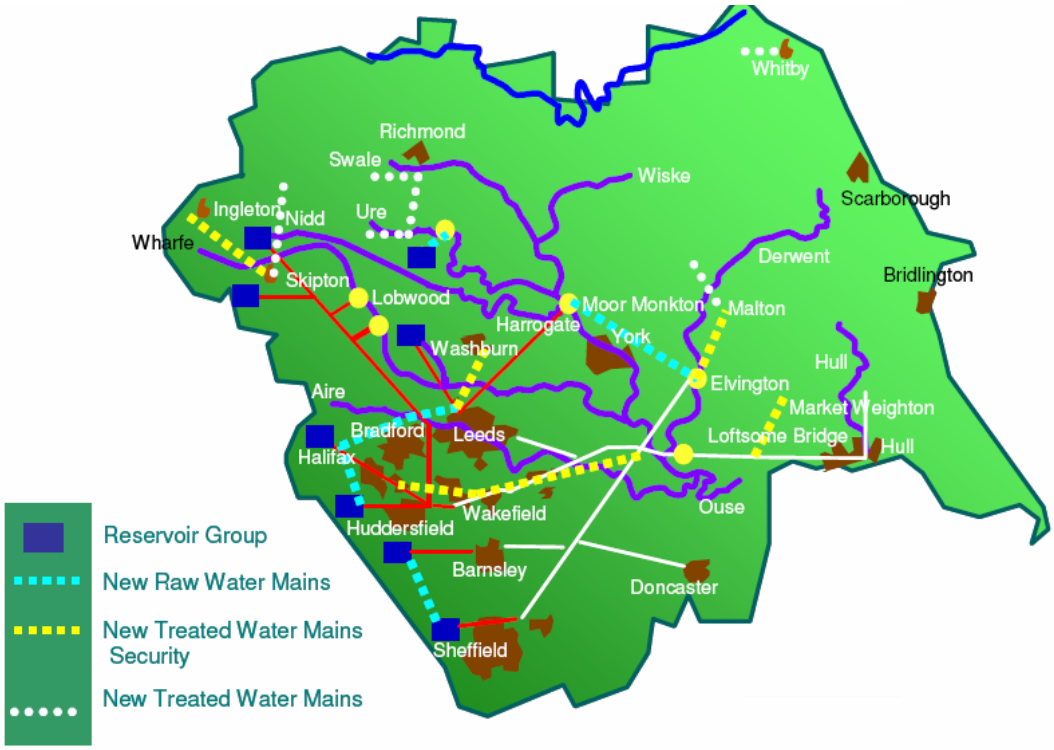


Figure 8 Yorkshire Grid (from Yorkshire Water's drought plan March 2009)

1.4.6. Industrial use of water

Industry draws water from both public water supply sources and through licensed direct abstraction from rivers and boreholes. This water is used in the production of chemicals, mineral extraction, engineering, paper and textile manufacture, and the food and drink sector. A licence allows a user of water to abstract but does not provide a guarantee that water will be available from the identified source. Where industries are licensed to take water directly from rivers and groundwater, they may be adversely affected as flows and levels reduce. Some industrial abstractors will be affected as hands-off flow (HOF) conditions come into force on their licences (see Section 1.4.2). It may therefore be necessary for the industrial user to consider alternative sources or to contact the Environment Agency to see what options are available as we fully understand people's concern for their livelihoods.

1.4.7. Agriculture

Agriculture is an important water use in the Region (see Table 1). Water is abstracted to produce food, and any impact upon the amount of food available impacts upon our nation's food security. But peak demands, often for spray

irrigation, occur during the summer months when water is most scarce. We can restrict abstraction for agricultural purposes, either through HOF or other licence conditions or through Section 57 restrictions. Section 3.6.1 describes these actions in more detail.

We have a number of Internal Drainage Boards (IDBs) within our Region. IDBs are responsible for land drainage and water level management in areas where there are special drainage needs.

A number of fish farms exist within the Region. Although fish farming returns the majority of water abstracted back to the environment, there may be a stretch of water which experiences reduced flows. There may also be water quality impacts during a drought period due to lack of dilution.

1.4.8. Power generation

A significant quantity of water within the Region is used for power generation (see Table 1), primarily for cooling purposes. Much of this water (1,915,212 Ml/a licensed abstraction) comes from tidal sources and should not be impacted during a dry year. Where the water is from an inland source, or in an estuarine setting, we may see exacerbated environmental impacts such as increased problems with low dissolved oxygen levels and consequent impacts on fish populations and migration.

The Region is also seeing a growth in “green” energy production, including hydropower generation: we currently have 36 licences for hydropower generation. Hydropower generators who are dependent on river flows will be impacted by continued low flows.

1.4.9. Domestic use

Most domestic water supply is provided by the water companies. However, there are some households that abstract directly from private water sources such as boreholes and wells. These sources could be impacted by long dry periods, as groundwater levels fall. We will notify local authorities if we believe the water situation is deteriorating to the extent that some of these domestic sources become at risk.

1.4.10. Angling

Rivers throughout Yorkshire and the North East support important stocks of migratory, non-migratory and coarse fisheries. Fish rely on an adequate supply of water throughout their lifecycle, particularly during periods of migration. Careful management of abstraction levels and compensation releases from reservoirs is often the key to the long term health of these rivers, ensuring enough water is available during key life-stages. The success of actions taken to lessen the impact of drought on fish populations may be limited. Fish rescues, for example, often have limited success because holding areas for fish are limited. Restocking of fish populations may be possible in some circumstances. We act to ensure that natural effects of a drought are not exacerbated by any action we take.

1.4.11. Recreation

Navigation is an important recreational use of water across the Region. For example, on about 30 days in the year, water releases for canoeing purposes are made from Thruscross Reservoir into Fewston Reservoir. The 2.4km stretch between the two reservoirs is the only dam-release facility in England and has become one of the most important and heavily used competition sites in the country. There are also facilities for canoeing at Tees Barrage. Further rivers and water bodies are used for sailing, rowing, canoeing and boating. Where the primary purpose is water supply, however, there is no guarantee the activities may not be impacted during dry weather.

It is not anticipated that drought will present any significant navigational problems within our North East Area, although small-scale recreational activities may be affected (e.g. passage for small watercraft during periods of low flows). The situation is different for Yorkshire Area where there is a greater density of canals. Figure 9 illustrates British Waterways navigations in Yorkshire. Following on from a very dry period from March to June, in August 2010 60 miles of the Leeds-Liverpool canal was closed from Wigan to Gargrave, touching the west of our Region. In 2011, we have seen temporary restrictions on boat movements on some of the canals in Yorkshire.

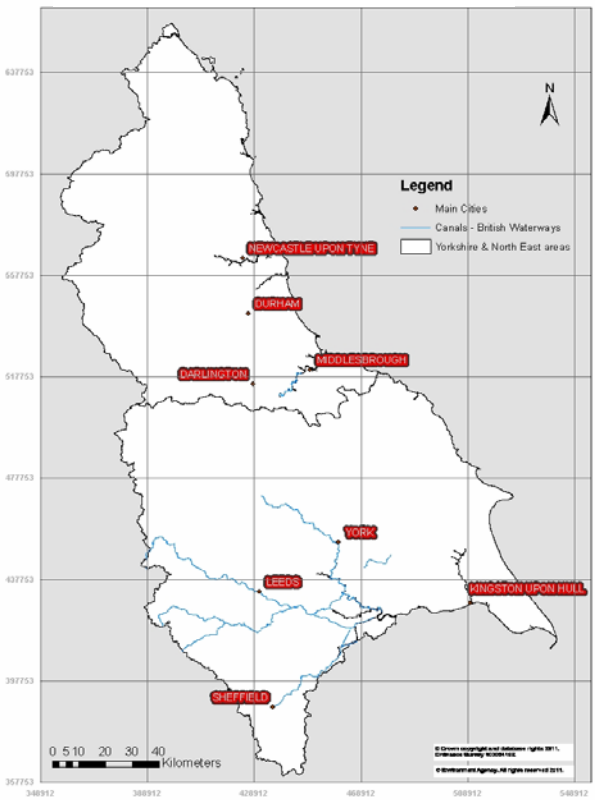


Figure 9 British Waterways navigations in Yorkshire and North East Region

1.4.12. Water efficiency

Although our primary duty is the protection of the environment, we also have duties to promote the efficient use of water and to have regard to impacts on the social and economic health of the Region. Drought reminds us of the importance of water and the need to be more careful with how we use it. We will work proactively to promote the wise use of water as a drought develops, and support initiatives to ensure people are aware of the implications of their own actions. We will build our key messages as referred to in our communications plan (Appendix C).

We will also be rigorous in making sure we use water efficiently within the EA at a time when the environment is under greatest stress. We will make extra efforts to drive down water consumption within our offices and look to where we can make savings. This will include simple initiatives such as not washing office windows or vehicles (unless health and safety needs demand it). We will raise the profile of water efficiency internally so that our staff are doing their bit to help the environment.

Water companies have an additional reason to promote wise use of water. If a water company is to apply for a drought permit or order, we would not support the application unless it the company can demonstrate it has implemented additional demand management measures prior to making the application. This could include publicity campaigns, hosepipe bans, bans on non-essential use, leakage control and mains pressure reduction. The only exceptions to this are where the significance of water savings is minimal even if the demand measure was adopted, for example, hosepipe bans in winter or if no significant environmental impacts are expected.

1.4.13. Other plans

The Region is covered by three **River Basin Management Plans** (RBMPs). The Humber RBMP covers the Yorkshire Area (and extends into Anglian and Midlands Regions). North East Area is mostly covered by the Northumbrian RBMP and partly by the Solway Tweed RBMP which extends into Scotland and North West Region. The aim of the RBMPs is to improve the environment by bringing more water bodies up to the point where “good status” is met. Article 4.6 of the Water Framework Directive (WFD) provides an exemption to meeting WFD objectives following the development of a prolonged drought and allows the temporary deterioration of the status of water bodies. WFD recognises difficult decisions may need to be made on the allocation of resources between environmental and human needs during a drought and may mean that drinking water needs are temporarily given priority at the expense of environmental needs. However, actions must not compromise the recovery of the water bodies once the drought is over and must be summarised within the next RBMP. Further details on the WFD and its plans can be found at River basin management plans

Each water company produces a **Water Resource Management Plan** (WRMP) describing what they propose to do to manage the supply of, and demand for, water over a 25 year period. These are reviewed on a five yearly cycle. These plans

provide a long term strategic plan for the management of water supply, and complement the drought plans. The water company plans develop the infrastructure and capacity to meet forecast demands for water while the drought plan demonstrates the short-term operational actions which a company would take during a drought. Drought may identify weaknesses within water company networks which future WRMPs can look to resolve.

The Environment Agency's **Catchment Abstraction Management Strategies** (CAMS) allow us to better manage the water resources of a catchment using an assessment of the water resources available at a local scale, and set out local water abstraction licensing practice. The CAMS provide the assessment to set HOF conditions that will be built into new abstraction licences. You can find out more about our CAMS at Catchment Abstraction Management Strategies.

The Environment Agency **Water Resources Strategy** for England and Wales sets out how we believe water resources should be managed to 2050 and beyond to ensure there will be enough water for people and the environment. The accompanying **Regional Action Plan** for Yorkshire and North East Region details the actions we propose to carry out locally to meet those long term aims. For example, one of the actions is to create Water Abstraction Groups for farmers where the sustainable use of resources could be discussed and developed. This will be of use both under normal conditions and during periods of drought. You can see our water resources plans at water resources strategy**.**

1.4.14. Past droughts

North East Area: from past experience, we would not expect to see major impacts from drought in our North East Area although catchments not supported from reservoirs such as Kielder can be expected to see reduced flows and public concern may be raised. For example, in 2010, the River Greta (a tributary of the Tees) was reported to be dry in the media; this is a natural response to dry weather conditions related to the geology of the catchment. Some of our drought work revolves around increasing understanding of what is normal environmental behaviour and what is exceptional. Our teams in North East Area will work to ensure where environmental impacts are likely to arise, actions are taken to prevent or reduce risks to the environment.

Yorkshire Area: Yorkshire Area experienced significant impacts from drought during 1995-96, whilst 2003, 2010 and 2011 saw dry conditions develop, leading to different challenges. The problems we were faced with have helped develop this plan. The main rivers impacted by the drought conditions in 1995-96 included the Rivers Hull, Ouse, Ure and Wharfe. Over this period 37 drought orders/permits were granted to enable reduced compensation flow and increased abstractions to manage the impacts on the environment and public water supply. A list of sites is given in Appendix B and drought orders and permits are covered in greater detail in Section 5. We have learned from these experiences and have carried out an assessment to

determine which catchments are particularly sensitive to environmental drought impacts. We know that the Hull catchment is susceptible to drought because of the sensitivity of the Chalk aquifer to low rainfall, the catchment's dependency upon groundwater to maintain supplies and flow in the river, and the lower rainfall normally experienced in the east of the Region. The Derwent is susceptible to low flow conditions in its upper reaches, where the Rivers Rye and Derwent flow over Corallian Limestone. Naturally occurring swallow holes can cause the majority of low river flows to disappear into the aquifer leaving lengths of river beds exposed and devoid of water. This happens in most summers.

1.4.15. Strategic Environmental Assessment and Habitats Directive Assessments

Strategic Environment Assessments (SEA) are not carried out on Environment Agency drought plans as our plans are voluntary and are not required under statutory legislation, nor under regulatory or administrative provision. A drought is likely to have significant effects on the environment and our drought plan sets out how we monitor and manage the impacts where possible. Our responsibilities as set out in this plan include (but are not limited to):

- making sure that abstractors do not take too much water from our rivers, whilst ensuring the environment is protected;
- checking water companies are following their drought plans and taking action to protect water supplies without placing unacceptable adverse impacts on the environment;
- promoting the need to preserve water, to reduce our impact on the environment and safeguard supplies for the future.

When developing our plans, we need to consider the principles behind SEA to help us understand, assess and, where possible, mitigate the impacts of our drought management actions on the environment. We will adopt principles of SEA in the development of our plans.

Water company water resource management plans and drought plans are statutory and therefore may need a SEA. We work with the companies to ensure that these plans follow the principles of SEA and minimise environmental impacts.

Where actions in our drought plan could have an impact on European designated sites, we will undertake a Habitats Regulations Assessment to determine if our actions are likely to affect the site. If we consider likely effects to be significant or if they cannot be determined we will complete an appropriate assessment.

2. Drought management in Yorkshire and North East Region

Our Region has experienced a number of dry periods in recent years. The major droughts of 1976 and 1995/96, particularly in Yorkshire, transformed the way we look at and deal with drought. This change is especially evident when we look at how water companies manage their resources. All our water companies now have statutory water resource management plans, demand management expertise and improved leakage control techniques. This means we know that water companies are getting the best use from the available water.

During a drought, our role is to ensure we manage and respond to the natural impacts of drought on the environment. Depending on the particular circumstances, we may need to respond a long time before water company drought plans are implemented.

As well as specifying roles and responsibilities, this section also covers our arrangements for securing resources and administration responsibilities both before and during drought.

2.1. Drought teams within the Region

We select members of our drought teams from across our Region, both from within Areas and at Region. We have four drought teams and one drought board within Yorkshire and North East Region brought together at specific times as a drought develops (see Figure 10).

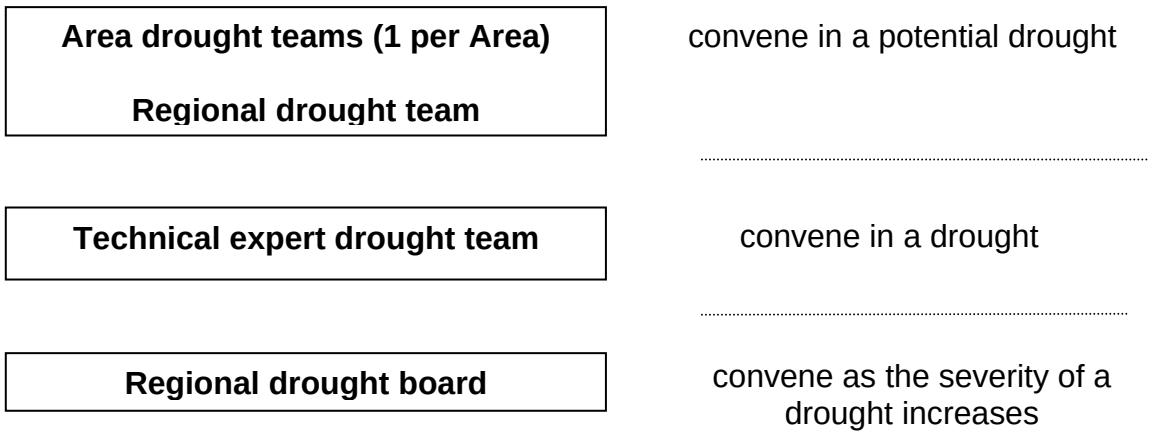


Figure 10 Drought teams in an escalating drought situation

Overall, during drought, our main responsibilities are to:

- make sure abstractors do not take too much water from our rivers, whilst ensuring the environment is protected;
- check water companies are following their drought plans and taking action to protect water supplies;
- deal with drought permit applications from water companies and respond to the Secretary of State on water company drought order applications;
- report on the state of water resources during a drought to the public and our partners;
- choose the best options to protect our environment during a period of intense pressure;
- work with other organisations, including British Waterways, National Farmers Union (NFU) and Natural England to ensure efficient use of water and protection of the environment.

2.2. Individual Regional drought teams – roles and responsibilities

Table 3 Area drought team

Role in Team	Who?
Area drought manager	Area Environment Manager or Area Environmental Planning (AEP) Team Leader
Area drought coordinator	Water Resources Regulation Team Leader, Senior Water Resources Environmental Planning Officer or Environment Management Team Leader
Environment Management representative	Environment Management Officer
Catchment coordinator	Environment Management Team Leader
Hydrology advisor	Hydrologist
Hydrogeology advisor	Hydrogeologist Technical Officer (Hydrogeology)
Water quality advisor	Senior Environment Officer (Water)
Ecology advisor	Technical Specialist Ecological Appraisal
Water resources representative	Senior Environmental Planning Officer
Fisheries advisor	Fisheries Technical Specialist
Biodiversity advisor	Team Leader Biodiversity or Biodiversity Technical Specialist
Discharge consents advisor	Regulatory Water Quality Technical Specialist
External relations advisor	Senior External Relations Officer
Analysis & reporting representative	Ecological Appraisal Officer
Legal adviser	Legal Services – Solicitor
Drought event administrator	Environment Assistant, Area drought coordinator or delegated member of drought team

The main roles and responsibilities of the Area drought teams are to:

- plan for and manage any drought event in the Area;
- keep the Area drought plan up-to-date;
- ensure that monitoring is adequate to assess the impact of drought;
- implement Area drought management actions;
- administer drought permit applications and respond to drought order applications;
- communicate with local parties interested in drought management and drought development;
- ensure site visits for enforcement are prioritised;
- ensure site inspections are carried out and relevant enquiries are dealt with;
- set up and report on integrated monitoring and impact assessments;
- liaise with relevant water users at a local level on operational issues;
- forecast potential drought impacts;
- implement mitigation actions in response to a water stressed environment;
- raise local public awareness on the state of the environment.

Table 4 Regional drought team:

Role in team	Who?
Regional drought manager	Water Resources Planning Manager, Regional Environmental Planning (REP)
Regional drought coordinator	Principal Environmental Planning Officer (Water Resources, REP)
Area drought manager (Northumbria)	Environment Manager
Area drought manager (Yorkshire)	Team Leader, Area Environmental Planning
Area drought coordinator (Northumbria)	Team Leader, Area Environmental Planning
Area drought coordinator (Yorkshire)	Senior Environmental Planning Officer (Water Resources), Area Environmental Planning
Communications officer	Communications Manager
Regional hydrological officer	Team Leader (Hydrology)
Fisheries officer	Principal Environmental Planning Officer (Fisheries), REP
Biodiversity officer	Principal Environmental Planning Officer (Biodiversity), REP
Water quality officer	Regional Environmental Planning Officer (Water Quality), REP

Hydrogeological technical advisor	Technical specialist Groundwater & Contaminated Land
Other team members (when appropriate):	
Water resources lead for Yorkshire Water	Principal Environmental Planning Officer (Water Resources), REP
Water resources lead for Northumbrian Water	Principal Environmental Planning Officer (Water Resources), REP
Regional incidents and emergencies Planning	Regional Incidents and Emergencies Planning Manager
Regional finance officer	Functional Accountant
Legal advisor	Principal Solicitor
Business planner	Business Planner
National Permitting Service	Senior Permitting Officer

The main roles and responsibilities of the Regional drought team are to:

- assess the impacts of a drought across the Region;
- co-ordinate communication across the Region during a drought;
- implement Regional drought management actions and monitor the drought actions taken by Area drought teams, water companies and other parties;
- formally advise the Secretary of State on drought orders and determine drought permits, using expert advice from the Technical expert drought team;
- support the Area drought teams in the Region in managing a drought;
- provide information to our Head Office drought team on the effects of the drought and actions taken across the Region;
- identify regional resource requirements and monitor costs with a view to cost recovery;
- keep the Regional drought plan up-to-date.

Table 5 Technical expert drought team:

Role in team	Who?
Regional drought manager	Water Resources Planning Manager, Regional Environmental Planning (REP)
Regional drought coordinator	Principal Environmental Planning Officer (Water Resources), REP
Technical lead Hydrology	Technical Specialist Hydrology
Technical lead Hydrogeology	Technical Specialist Groundwater and Contaminated Land

Water resources water company lead	Principal/Senior Environmental Planning Officer (Water Resources), REP/AEP
National Permitting Service	Senior Permitting Officer
Fisheries/ecology technical lead Including Habitats Directive	Technical Specialist (to provide advice when appropriate)
Water quality technical lead	
Water resources regulatory technical lead	Senior Environmental Planning Officer (Water Resources), AEP
Communications technical lead	Communications Manager
Regional incidents and emergencies	Regional Incidents and Emergencies Planning Manager
Administration officer	To be identified when appropriate

Timescales that accompany a drought permit or order application are short and a prompt response is necessary. The Technical expert drought team will convene when a drought has developed to the point that a drought permit or order is starting to be considered. Their role is to work with the National Permitting Service to manage the whole process related to permits and orders. The Technical expert drought team is composed of key members of staff that we have identified in advance with the experience to provide a technical response. It will be drawn from both Regional and Area drought teams, and from the National Permitting Service (NPS), providing a vital link across teams. The Regional drought coordinator will ensure that there is clear communication between the National Permitting Service, the Region and drought teams.

Table 6 Regional drought board:

Role in team	Who?
Project executive	Regional Director or Environment & Performance Manager
Regional drought manager	Water Resources Planning Manager (REP)
Yorkshire Area representative	Yorkshire Area Manager
Northumbria Area representative	Northumbria Area Manager
Other members of the Regional management team to be included as appropriate	

The main roles and responsibilities of the Regional drought board are to:

- provide the overall direction for managing a severe drought;
- support and provide guidance to the Regional drought and Area drought teams;
- prioritise objectives of specific staff involved in managing the drought to reflect the commitment required, and agree additional staff requirements;
- approve redeployment of regional resources, cost recovery methods, and other resource deployments;
- drive and support public relation initiatives;
- ensure collated drought related information meets the required standard and timescales;
- promote and ensure communications are timely and kept clear both internally and externally;
- liaise and negotiate with relevant water users at appropriate levels;
- support the drought plans.

A list of names and contact details for our drought teams is held in the Yorkshire and North East Region drought folder.

2.3. Decision making

Within the Environment Agency, the authority to make decisions relating to non-financial matters is given to certain members of staff through the non financial scheme of delegation (NFSoD). Some drought decisions can therefore only be approved by certain staff. These are set out below in Table 7. The scheme includes provision for powers to be delegated to other members of staff during periods of absence, ensuring continuity of cover.

Table 7 Key decisions

Activity	Staff member authorised to approve
Approval of water company drought permits	National Permitting Service Manager or Area Manager(s)
Approval of our comments to the Secretary of State on water company drought orders	Regional Director
Approval of Environment Agency drought order applications	Regional Director
Approval of memorandums of understanding (MoUs) that relate wholly to an Area	Area Manager(s)

Approval of memorandums of understanding (MoUs) that are of regional concern	Regional Director
Approval of invoice to water company for recovering costs relating to drought permit or order application	Regional Director

2.4. Securing resources

During a drought, the Yorkshire and North East Region drought manager is responsible for reviewing and identifying resource needs so that we continue to fulfil all necessary commitments associated with the management of drought. Additional resources are sourced internally via the redirection of internal staff or externally by using consultants.

2.4.1. Redirecting internal resources

We anticipate that activities carried out in the run-up to a drought will be absorbed into normal workloads, which may need re-prioritising accordingly. Prior to a Regional drought board being convened, the Regional drought manager will seek agreement over what other work we may no longer be able to deliver and how that impacts on our customers. As a drought escalates, we will use our internal project management and procurement processes to secure sufficient resources and thereby guarantee effective delivery of actions. The Regional drought board will take over responsibility for resourcing when they have been convened in more extreme drought conditions. This process will enable the recording of the total resources needed, including (but not restricted to):

- staff costs, including time/overtime spent on drought work;
- operational costs, for example additional weed cutting;
- drought order/permit cost recovery.

Once the need for additional resources has been identified, either by the Regional drought manager or the Regional drought board, the Executive Managers responsible for the Areas and Regional office will need to consider the redirection of internal staff to priority drought work and manage the impact on delivery of other work. The decisions made will be documented and shared with the Regional Planning Manager so that the impact on business delivery can be considered.

At our Head Office, the Strategic Management Team (SMT) is formed during a National drought event and meets on a fortnightly basis. This team contain the Director of Operations, National Permitting Manager and specific Regional Management Team representatives. Its purpose is to allocate resources nationally to impacted Regions and manage the major risks identified as the drought escalates. If requested or we require, our Region will provide a representative. As most of the

issues relating to drought are likely to affect our Yorkshire Area, our nominated management lead will be the Water Resources champion in the Regional Management Team – typically the Yorkshire Area Manager or drought manager. The SMT can request resources including staff and equipment to support the impacted Regions. Our Regional SMT representative is responsible for ensuring we respond to any actions. Any sharing of resources from Yorkshire and North East Region will be determined based on local need, pressures, prospects for the rest of the year, any Regional re-allocation already underway and any other risks identified. We are also requested to provide a Single Point of Contact (SPoC) who can provide responses to SMT and our National Incident Room at short notice. This will generally be the Regional drought coordinator.

2.4.2. Financial resources

If extra staff or consultants are appointed to assist with increased workloads, the appropriate drought manager makes budget holders aware of the financial implications at the earliest opportunity. Approval for this spend is sought according to the Financial Scheme of Delegation.

The relevant Area and Regional drought manager is responsible for monitoring the costs incurred as a result of the drought, including staff costs, consultant costs and operational costs. During drought, our drought teams and supporting teams record their time spent on drought activities against specific drought project codes. The national drought team provides a set of time recording codes for our teams to use at the onset of drought.

We will actively seek to recover costs from water companies, reflecting the costs we incur in undertaking additional monitoring and mitigation measures required as a result of water company drought permits/orders. We will agree a framework for cost recovery with the relevant water companies. Exact details will be specific to events as they evolve, and the framework will be reviewed as part of the regular drought liaison arrangements between the Environment Agency and the water company. The recovery of costs will be led by the Regional drought manager, working with the Regional drought coordinator and finance business contact on the Regional drought team. We will make sure all drought work is correctly and explicitly entered within our time recording system to enable cost recovery.

2.4.3. Obtaining external resources

The use of external resources is arranged working with our Procurement team using one of the consultancy frameworks.

2.5. Administrative arrangements

At the onset of and during drought, our drought teams open and maintain several administration documents and databases.

All documents relating to drought are stored on our internal regional N drive at the following location N:\Yorkshire and North East Drought\.

It is important that an accurate audit trail is kept throughout a drought event. Environment Agency records are public documents which may be referred to at a public hearing, either during or after a drought. They are also useful to ensure we learn lessons to continually improve our response to drought events and to understand how the environment behaves through a range of natural conditions.

All communications may be subject to Freedom of Information (FoI) requests (such as telephone conversations, letters, emails etc.) so must be recorded and filed accordingly. General communications must be made available on request according to our FoI procedure.

We retain all log sheets, notes and any other records of information for at least three years. The Regional drought manager is responsible for assigning someone to set up and maintain the necessary logs at Region. The drought coordinator will do this initially but as the drought escalates an administrative officer may be appointed. Area drought teams will set up similar recording systems with the Area drought event administrator being responsible for filing drought documents on the regional N: drive, following internal records management procedures. Each drought team member is responsible for documenting their own work and passing it to this person.

When a potential drought is triggered, the Regional drought team must create a risk log and complete the necessary HELP paperwork (for an explanation of the HELP process, see Section 6.2.5). Each risk must be evaluated to determine the likelihood of it occurring and the impact that it would have if it did occur. Where risks have high likelihood and impact scores then the Regional drought team should think about whether action is necessary to avoid, transfer or reduce the risk. High level risks should be referenced on the Region's internal risk register for raising with the Regional Management Team. The Regional drought manager must inform the Head Office drought manager of any risks or issues identified at regional level that are nationally significant.

3. Drought triggers and actions

Drought impacts vary from minor to very severe. Our drought plan covers the whole range of drought management activities and decisions we take to manage the impacts. As droughts become more severe, more effort and time is needed to manage our own activities.

It must be acknowledged that during any drought, the unique set of circumstances presented will mean that lessons will be learned. This document has a “dynamic” nature, and will be reviewed regularly to accommodate lessons learned from within the Region and across England and Wales. We review our plan annually and look to rewrite it every three years or in line with the statutory water company process. This section sets out the actions our drought teams take for drought planning and management, who decides on the action and what indicators trigger these actions.

There are specific triggers associated with how we work with our water companies. Under normal conditions, our water companies report their stocks on a weekly basis. Northumbrian Water’s drought plan shows it will never have drought restrictions. Nonetheless, we continue to monitor their stock position and the environment in our North East Area. For Yorkshire Water, we receive a weekly report which shows stock positions across Yorkshire in relation to an EA trigger line. When stocks in any part of their system cross this EA trigger line, we will open formal liaison and monitor the water situation on a regular basis. The trigger is set so that it is crossed well before the Area is in potential drought; it’s purpose is to provide an early indication of problems that may develop later. Once the trigger has been crossed, we will work closely with the company, ensuring that they are following their drought plan procedures and that they are taking the necessary actions to manage the situation as it develops. Only when stocks recover to above the EA trigger line will the frequency of our contact be reduced.

3.1. Stages of drought management

The decisions and actions we take for drought planning and management are split into four stages (Table 8):

Table 8 Drought stages

Drought stage	
Normal	Drought planning actions in a normal water resource situation, including routine monitoring.
Potential drought	Drought actions required to prepare for drought once prolonged drier conditions are evident. Careful monitoring is necessary and there may be additional reporting.
Drought	Actions required to manage drought once localised drought conditions impact on people, business and the environment. Other activities may be reduced or stopped.
Post drought	Actions required to monitor and manage the return to normal water resources conditions. Assess outcomes and review drought plan as necessary.

We use these stages to help us make timely decisions and actions.

3.2. Drought triggers and actions

We use a range of drought triggers to identify what drought actions to take and when. The crossing of a drought trigger does not mean that the action must automatically be taken; rather we will take a "weight of evidence" approach. Our drought teams make a decision on whether action is needed based on a range of factors, including the present and forecast conditions and how effective the action would be. We will draw upon local expertise within the EA to inform our management of a drought and the decisions we make.

Not all parts of the Region will respond to dry weather at the same time or in the same way. We may not call a potential drought or drought yet escalate activity in certain areas to protect the environment or where mitigation measures will have clear benefits.

3.2.1. Normal drought management

In any year, there are variations in rainfall and availability of water. In a 'normal' year we would expect there to be sufficient rainfall during the preceding winter and present year to mean that there is no need for any specific drought actions. If conditions have been or turn dry, there may need to be activities associated with water resource management but this does not mean we are in drought. For example

we would realistically expect to have on-going discussions with water companies, potentially issue hands-off flow cessation letters and may need to work with partners such as British Waterways to ensure any short term risks are managed. Every April, we will review the prospects for the forthcoming year, reflecting on the previous year and the current resource position.

As part of our routine annual work to remain prepared for drought, we will review our drought plan, drought team memberships and our communications plans whilst continuing with routine monitoring.

The following tables indicate the activities undertaken within the drought plan. The severity of the drought would determine the sequence of events. The tables below illustrate the sequence of activities we are likely to follow and do not reflect the relative importance of an action.

Table 9 Normal conditions:

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
1	The Region and two Area drought teams meet to review plan and update if necessary	- March each year	Drought coordinators	Drought coordinators	Regional and Area drought coordinators	- revised plan produced or existing plan approved prior to end of March	- publish new plan if revised - notify interested parties of changes - undertake consultation if required for significant changes to plan
2	Review membership of Region, Area, Technical expert drought teams and Regional drought board	- annual review of drought plan	Drought coordinators	Drought coordinators	Regional and Area drought coordinators	- up to date 'team' membership identified. - 'skills list' reviewed - notify Head Office Drought coordinator of any changes in positions - ensure all nominated members are aware of their responsibilities	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
3	Update communications plan including details of internal and external customers e.g. water company drought contacts	- annual review of drought plan	Regional drought coordinator	Regional drought coordinator	Communications lead	- communications plan updated - ensure aligned with 'triggers' in drought plan	
4	Agree final drought and communications plan and ensure changes to plans are understood by local and Regional teams and those impacted. Water company annual reviews of plans are reflected in the changes	- annual review of drought plan	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- those impacted by changes to plan are informed - any 'new' team members advised of their role and responsibilities	- notify relevant people impacted by changes to the plan
5	Routine hydrological, hydrogeological, ecological monitoring and data interpretation	- none - routine activity	Routine Monitoring teams - hydrology, H&T, A&R, S&C	Ongoing monitoring review via AEM with responsibility for monitoring programme in consultation with clients	Routine monitoring teams - hydrology, H&T, A&R, S&C	- throughout the year as scheduled. Observation of routine data for drought trigger criteria - groundwater scenarios based on differing scenario predictions - identify potential high risk sites (to drought) such as depleted river stretches (so that we can assess if 'normal' or 'drought' impact)	

In some years, we can still be in the ‘normal’ drought classification but need to escalate our activities as periods of dry weather generate media and public interest. We may need to put a large amount of effort into managing hands-off flows on abstraction licences without ever getting into potential drought. The amount of work required will be dependent on the duration of the dry weather. We will monitor our triggers and decide whether the weight of evidence is sufficiently compelling to move into potential drought. As each year and each dry period will be unique, we will assess the full range of triggers before moving to potential drought.

Until a potential drought is declared at an Area level, drought work at Area revolves around routine actions but with a heightened awareness of any potential drought impacts and readiness to respond. Work is undertaken as part of the normal operational staff duties until such time as the escalation of effort threatens to undermine the operational ability of the team to deliver objectives.

Table 10 Normal conditions – dry weather leading to extra effort:

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
6	Raise internal awareness of dry weather through briefings to HO Drought coordinator and RMT members	- below average period of rainfall for period over two months (may need to refine) - another EA Region declaring potential drought - Y&NE Area evaluating move to next drought status	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- produce relevant briefings as requested or proactively for internal audiences - ensure external drought messages are refreshed to reflect prevailing conditions - weekly reporting to HO drought team if HO drought team established - ensure Regional risk register retained up to date	- utilise internal communications to inform staff of issues
7	Send all licence holders with hands-off flows prospects for summer letter	- April each year if there has been below average rainfall in previous three month period or, where flows are notably low	Area Environmental Planning Officer	Senior Environmental Planning Officer (WR)	Area Environmental Planning	- letters of drought prospects sent to spray irrigators	- update NFU/CLA of position via existing liaison or targeted letter
8	Contact British Waterways (BW) to ensure current situation assessed	- weather conditions put at risk Winterburn Reservoir and other BW assets	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	- if necessary, send advanced notification of restrictions letter to BW Continue regular liaison	- send notification letter
9	Open informal communications with water companies	- extended period of dry weather and approaching liaison triggers	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- review outputs to assess if further communications required	
10	Open formal liaison with Yorkshire Water	- reservoir stock line in Water Situation Report from YWS crosses the EA trigger line	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- telecon in advance and if required meeting arranged with Yorkshire Water's production planning team - discuss opportunities for voluntary arrangements/changes	- contact water company representative
11	Open formal liaison with Northumbrian Water	- request from National drought team for position statement	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- meeting arranged with Northumbrian Water's production planning team	

12	Open formal liaison with Hartlepool Water	- request from National drought team for position statement	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- contact made with colleagues in Anglian Region to ensure Hartlepool Water position is known. If not collate locally	
13	Contact key stakeholders and partners to ensure necessary messages and preparatory work are undertaken	- outcomes of water company liaison meeting - significant changes to our drought plan	Area drought team	Area Environmental Planning	Regional drought coordinator	- if deemed necessary, stakeholders and partners are contacted. Information and nature of content will be as defined in the communications plan - Regional drought coordinator considers coordinated approach to communications with comms team	- targeted communications
14	Contact trade associations and representative bodies to ensure necessary messages are distributed	- if sectors identified at risk after a review of resources position	Area drought team	Area Environmental Planning	Regional drought coordinator	- if deemed necessary, stakeholders are contacted. Information and nature of content will be as defined in the communications plan - Regional drought coordinator considers coordinated approach to communications with comms team	- targeted communications
15	Notify local authorities where domestic sources may be at risk	- groundwater levels suggest potential for increased risk of failure	Regional drought coordinator	Drought coordinators	Regional drought coordinator	- information passed onto local authorities so that they may identify a way forward	
16	Establish annual leave and media risks	- evidence suggests Regional drought team will need to be convened	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- update 'leave spreadsheet'. Request annual leave details from those involved in drought management - review who media trained spokespeople are and arrange training if necessary	- organise media training (possibly through head office communications team)
17	Send advanced notification letter to abstractors who may need to cease abstraction	- approaching flow where licensed HOF will be crossed and no rain forecast	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Area Environmental Planning	- letters sent to all abstractors where conditions may require cessation - attempt to give at least 1-week's notice where possible - consider promotion of voluntary restrictions/operations	- update NFU/CLA of position via existing liaison or targeted letter

18	Send HOF Letters to abstractors	- river levels are lower than conditions on some abstractors' licences and no rain is forecast. - at least 1-week's notice has been given	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Area Environmental Planning	- ensure we contact abstractors when they are able to abstract again - notify EM Team Leader of need to refocus effort - request communications support to promote messages via media	- update NFU/CLA of position via existing liaison or targeted letter
19	Target visits of Environment Officers to most at risk catchments and those permits where we have historic evidence of breaching conditions or the licence holder has been contacted to cease abstracting	- HOF conditions are in force and actively managed through AEP team - 1-week has passed since cessation letters issued for those issued them	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (Area)	- EM teams focus effort on at risk catchments and those abstractors with cease abstraction letters - supply EM Team Leaders with list of abstractors who have received a notification and cease abstraction letter - log drought related incidents using NIRS process derived in 2011	
20	Consider the possibility of hydrological forecasting to augment that undertaken by water company		Regional drought coordinator	Supra-Area Hydrology team	Supra-Area Hydrology team	- scenarios produced to define the risk to the environment at those locations defined as most at risk	
21	Alert drought coordinators of hydrological indicators of potential drought through regular situation reports	- flow, SMD or DSI indicators suggest potential for increased risk of drought	Supra-Area hydrology team	Supra-Area Hydrology team	Supra-Area Hydrology team	- hydrology send monthly report to Regional communications team	- communications team publish hydrology report to internet
22	Organise meeting with representatives of Area and Regional drought teams and technical specialists to consider moving to 'potential drought status'	- managing HOFs and the overall weight of evidence suggests drought has become significant in terms of disrupting the business and no significant rain events are forecast	Drought teams & Technical teams (e.g. hydrology, FRB)	Regional drought coordinator	Regional drought coordinator	- meeting of Regional drought team arranged and decision made. Regional drought manager notifies RMT of recommendation to change status	
23	Produce information for internal reporting: management performance reports, cascade briefs, weekly update emails and Regional reports to a standard format (for SMT, RMT and HO drought team)					- appoint a single point of contact (SPoC) when SMT established - ensure RMT know an SMT representative is required - nominate Yorkshire AMT member for SMT	- consider whether proactive briefings for local MP's might be appropriate (only if HO drought team convened)
24	Ensure all staff involved with drought begin to use the file structure for drought on the regional N: drive. Sender saves 'policy' for emails and attachments	- any drought team established - escalation in workload impacts on delivery of day job	Drought coordinators	Drought coordinators	Drought coordinators	- full audit trail retained - post drought review made easier	

25	Defer decision to move to potential drought	- one area considering potential drought - weight of evidence inconclusive	Area drought coordinators	Area drought coordinators	Area drought coordinators	- continue to review triggers and monitor situation for subsequent review. Organise repeat discussion	
26	Decision made to move to potential drought	- one Area recommends potential drought. - weight of evidence across business suggests appropriate - hydrological triggers suggest potential drought (as defined in drought plan)	Area drought coordinators	Area drought team	Area drought manager	- internally agree 'potential drought' - inform E&P Manager, Regional Director and Area Managers of Regional drought team recommendation to move to 'potential drought' - notify Head Office colleagues of decision	

3.2.2. Potential drought

Through our routine monitoring, we will be able to determine (through our triggers) whether we move into 'potential drought'. The basis for this would be the inability to carry out normal operations due to workload generated by the dry weather and a perceived risk to the environment which would require additional resources to be deployed. We may also change status if a water company is concerned about resources.

At this stage, we will put increased effort into managing the impacts from the dry weather and will be planning based on an assumption of continued dry weather.

Table 11 Potential drought conditions:

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
27	Formally convene Area drought team	- moving to potential drought	Area drought coordinators	Area drought manager	Area drought coordinators	- convene Area drought team - notify AMT of current position - Area drought coordinator informs Regional drought coordinator	
28	Formally convene Regional drought team	- Area drought team convened	Regional drought coordinator	Regional drought manager	Regional drought coordinator	- convene Regional drought team and invite technical specialists - submit HELP report - notify RMT of current position - inform appropriate National contacts (dependent on position elsewhere in country)	
29	Establish drought time recording code. Ensure drought specific activity is recorded to drought code	- moving to potential drought	Regional drought coordinator	Regional drought manager	Regional drought coordinator	- all staff know how to time record drought activities (NB much of the work is 'day job' therefore only the drought specific items need recording to a drought code) - we are able to assess the effort put into events and will have evidence of time spent should we require cost and time estimates to recover costs post drought - some staff taken offline to manage drought situation. Other work reprioritised	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
30	Implement drought reporting plan	- Regional drought team meeting assesses data available and concludes 'potential drought' should be declared	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- single log established for Region - drought key decisions and actions log created - drought risk log created - drought communications log created - drought lessons learnt log created - communications plan updated and agreed - decide if administrative support will be needed - report to timescales required (weekly, fortnightly, monthly)	
31	Implement communications plan	- moving to potential drought	Regional drought coordinator	Drought coordinators	Communications lead	- formal lines to take produced - appropriate proactive media and communications enacted - reactive response to media requests - water saving publicity plan - disseminate drought status information and changes in line with communications plan (internal and external where necessary)	- refresh local drought messages - proactive media stories distributed in line with HO guidance
32	Plan to implement 'potential drought' monitoring programme. Increase monitoring of weather forecasts, rainfall, river flows, groundwater levels, reservoir levels and soil moisture deficits. Monitoring programmes increased from routine monitoring where appropriate	- moving to potential drought	Drought teams & Technical teams (e.g. hydrology, FRB)	Area drought team	Area drought team	- interpret drought monitoring data and report to drought coordinators - relevant team leaders informed of requirements	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
33	Continue liaison with water companies, encourage improved water efficiency (leakage control, demand management escalation, combined or complementary media coverage) and implementation of water company drought plan if required	- continued decline in reservoir stocks and continued dry weather	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- further liaison meetings - water companies begin to implement the statutory drought plans - frequency of meetings determined based on needs of water company risk	
34	Work with British Waterways to encourage efficient use and changes to operations with view to maintaining canal network operational		Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	- ensure a formal communications meeting is established - agreed communication plan - mitigation measures identified	
35	Increased effort on enforcement of licences with HOF conditions and any voluntary restrictions in place	- moving to potential drought	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	- targeted compliance visits - EM teams reprioritise visits to abstractors	
36	Consider initiating low flow surveys (<Q95)	- moving to potential drought	Area Hydrologists	Area drought manager	Supra-Area Hydrology team	- flow data improved - post drought review illustrates where flow was an issue - sites recorded for future spot gauging comparison	
37	Review whether work is required for drought orders and drought permits including that associated with water companies and for environmental purposes	- annual review of Drought Plans identified work required - weight of evidence suggests situation will deteriorate. - water company forecasts suggest drought permits/orders may be required	Drought coordinators	Regional/Area drought teams	Drought coordinators	- decision on whether to complete environmental assessments or whether to deliver as planned - refresh content of drought order/permit work considered necessary (e.g. where lessons learnt means can be improved) to ensure our applications can be approved quickly	
38	Review resource and evidence and defer decision to declare 'drought' status	- weight of evidence and forecast insufficient to support change of status	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought managers	- continue to review triggers and monitor situation for subsequent review	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
39	Review resource and evidence and declare 'drought' status	- weight of evidence and forecast suggests deteriorating situation which will require additional resources or, environment physically impacted	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought managers	- meeting of Regional drought team - plan for additional resource requirements - notify RMT of decision and recommend convening Regional drought board	

We will be planning both mitigation and preventative actions and increasing our levels of monitoring and communications. At this time more than one Environment Agency Region elsewhere in England and Wales may be in potential drought and we may be working with our National colleagues to ensure the dry weather is managed across the wider Environment Agency.

We will have to mobilise our resources as the lack of rainfall persists, to tackle environmental issues as they expand across the whole Region. Our Areas will work with the agricultural community and industry to minimise their impacts on the environment.

We form the Regional drought team when an Area declares potential drought.

3.2.3. Drought

There will come a time when lack of rainfall means the normal operation of water company abstractions will be unable to meet public demand for water. It is at this time, when water companies or we ourselves apply for drought permits/orders, that we have entered full drought conditions in the Region. Whilst our drought plan continues to respond to the increasingly dry conditions and the environmental impacts of drought, the water company drought plan(s) come into force. The plans will run side-by-side but, whilst water company drought plans show what they will do to safeguard public water supplies, our plans will identify how we will balance their needs against those of the environment.

At this stage of the drought, the risk of environmental damage has increased and potential actions also carry a greater risk of causing harm. All users of water will need to be rigorous in managing their operations to ensure the environment

(including protected sites) is put at minimal risk. Water companies will need to minimise the risk of the impact of all their operations on the environment, including sewage treatment works discharges (see Section 4.4).

We will need to reallocate considerable resource to monitor drought effects, encourage changes in behaviour of water users and take additional voluntary and regulatory actions. Other operational work will not be delivered or may be delayed. This will impact on our internal delivery targets and on what customers might expect from us as an organisation. For instance, if there are numerous drought permits requiring public inquiries and specialist permitting support, customers applying for an abstraction licence may find it will take longer than during more normal conditions.

Table 12 Drought conditions:

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
40	Ensure water companies are following their drought plans and where public water supply is regarded as secure, ask what support the companies can offer to protect the environment	- upon entering 'drought' status	Regional drought coordinator	Regional drought manager	Regional drought coordinator	- partnership working to safeguard environment - shared effort on communications - propose voluntary measures - amend operations to help mitigate impacts	- proactive media to support development of water company work - agree communications protocol between companies and Environment Agency
41	Convene technical expert drought team	- upon entering 'drought' status	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- review resource requirements, risks and resource needed. Identify at risks sites and prioritise activity required. Collate, report and act on recommendations. - ensure cross regional support is possible through pooling technical skills and resources	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
42	Escalate drought reporting and communications as defined in the Reporting Plan Communications plan (Appendix C)	- upon entering 'drought' status	Regional drought coordinator	Drought coordinators	Drought coordinators	- each action with action as consequence will be communicated to the relevant people - increase communications with relevant customers and promote water saving publicity	- Contact Angling groups with advice on conservation, fish rescue and aeration contractors, press releases and bankside management
43	Respond to requests for information	- upon receipt of a request for information					- communications team deal with media requests
44	Assess resource and business implications and request additional resource if required	- Regional drought team identified that drought management actions and reporting cannot be managed within existing resource and we have stopped other priority work being delivered. Make recommendation for additional resource requirement	Regional drought coordinator	Regional drought manager	Regional drought manager	- summary of resource which is required, what work will not be delivered and environmental consequence will be reported - inform Environment & Performance Manager of need and requirements and ensure resource is requested - ensure business planning are aware of potential impact on delivery (change forms completed if required)	
45	Request additional resource from PAB and RMT	- briefing of E&P manager on basis that additional resource required - drought status confirmed by Regional Drought Team and RMT	Regional drought manager	Regional drought manager	Regional drought manager	- necessary management, resource and financial support is available - establish a project code either locally or from National against which to record time, effort and money for subsequent recharge purposes	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
46	Convene Regional Drought Board	- PAB & RMT approval received. - Regional drought team have recommended its establishment -when management of drought requires senior management support and delivery of wider business activities is being impacted	Regional drought coordinator	Regional drought manager	Environment & Performance manager	- provide overall steer for Regional approach to drought management including resource allocation	
47	Review and escalate 'drought' monitoring programme, analysis and dissemination as necessary	- upon entering 'drought' status	Area drought coordinators	Area drought team	Area drought team	- interpret drought monitoring data and report results to drought coordinators - daily monitoring of key surface water flows with restrictions in force	
48	Focus effort and resource where monitoring data and evidence shows there is potential for drought impacts		Area Environmental Planning	Area drought manager	Area drought manager	- ensure all aeration equipment for deployment is serviced and working	
49	Target compliance and enforcement visits to at risk catchments and those contacted with letters from Area Environmental Planning. Where voluntary irrigation restrictions have failed consider application of Section 57 restrictions and give formal notice of restrictions to abstractors if unwilling to adopt voluntary initiatives	- low river flows and HOFs enforced for extended duration - monitoring data highlights at risk catchments	Area Environmental Planning	Area drought manager	Area drought coordinators	- serve s57 notices to relevant abstractors and target with EM teams - submit HELP report if s57 utilised - ensure media messages prepared - promote mitigation measures (e.g. overnight irrigation)	- proactive media in preparation for compulsory restrictions - media messages on efficiency and conserving water aligned to water company
50	If appropriate, work with Northumbrian Water to amend the operation of Kielder reservoir (in line with the operating agreement)						- if any amendments or special operation required ensure appropriate communications in place

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
51	Ensure water companies are following their drought plans and where public water supply is at risk ascertain what the companies are doing to manage the situation and whether we can anticipate restrictions on customer use or drought permit applications	- triggers in water company drought plans are crossed - environmental triggers (e.g. river flows) require mitigation actions to be implemented (site specific)	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- liaise with water companies at frequency appropriate to water company and environmental drought - agree drought mitigation measures and implement as necessary (including recreation and navigation) - mitigation measures agreed with Area Drought Teams and implemented as necessary - organise director level meetings if required	- ensure MPs are notified of the current position and the potential impacts
52	Increased escalation of work with British Waterways (BW)		Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	Senior Environmental Planning Officer (WR)	- pool resources for fish rescues and media messages - encourage BW to put up notices for boaters to share locks, maximise efficiency of locks, prioritise repairs to damaged locks losing water, report incidents of blue/green algae	- combined drought messages produced and promoted
53	Respond to representation on proposed restrictions of water use and implementation of hosepipe bans	- situation report and meetings with YWS suggest approaching drought control line - ensure company has applied appropriate use restrictions and measures to restrict demand prior to applying for hosepipe ban	Regional drought coordinator	Drought coordinators	Drought Teams & Technical Teams (e.g. hydrology, FRB)	- demand management restrictions imposed by water companies - ensure representations are considered by company	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
54	Undertake activities associated with water company drought permits and support companies to ensure submitted information is sufficient to satisfy Environment Agency National Permitting Service	- continued Yorkshire Water communications and forecasts suggest temporary-use restrictions and hosepipe restrictions will be applied, further rain forecast not sufficient to prevent reservoir stocks crossing the Drought Control Line in six-weeks	Regional drought coordinator	Regional drought manager	Regional drought coordinator	- water company lead from Environment Agency works with water company to ensure content of drought permits sufficient for NPS purposes - preapplication work done in Area and Region prior to formal submissions - allocate nominated individual for each drought permit - draft versions reviewed by Technical expert drought team - Technical expert drought team make recommendations on whether to approve or amend permit/order application - submit HELP report & brief RMT - signed off by Area Manager or NPS Centre Manager	- respond to media enquiries associated with publicity of drought permits and orders
55	Permitting Support Centre receive formal application for drought permit(s) from Water Company	- Regional Environmental Planning have completed pre-application work with company - hosepipe bans or other temporary restrictions available have been implemented - request for assistance in determination from NPS once formal application received. - water company has served notice of application	Drought Teams & Technical Teams (e.g. hydrology, FRB)	Drought Teams & Technical Teams (e.g. hydrology, FRB)	National Permitting Service (NPS)	- Regional Environmental Planning and Permitting Support Centre support work on assessing application and respond to requests for information. Technical Expert Drought Team respond to applications and make recommendations to drought teams. Drought teams make decisions based on evidence and respond to NPS. - Regional Environmental Planning team appoint lead for each potential drought permit - submit help report	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
56	Respond to application for drought order(s) from water company	- drought order submitted to Secretary of State - drought order notice published - environmental impact assessment submitted, discussion on monitoring and mitigation	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought teams & Technical teams (e.g. hydrology, FRB)	- notification email sent to drought coordinators - OTL code set up to allow subsequent cost recovery - formal response to SoS	
57	Receive objections and make decisions on whether a hearing is appropriate - organise if required	- representations and objections to proposed drought permit received	Regional drought coordinator	Regional drought manager	Regional drought manager	- book planning inspectorate and venue for public meeting if necessary	
58	Consider appropriateness of operational activities: weed cutting, dredging, channel maintenance/profiling, fish rescues						
59	Apply for drought orders to allow us to manage water in a way which protects the environment longer	- work during potential drought identified sites at risk and work on drought order impact assessment has started - compensation flows from reservoirs threaten to deplete reservoirs and put at risk continued river flow	Regional drought team	Drought teams & Technical teams (e.g. hydrology, FRB)	Regional drought team	- organise public hearing or inquiry if required. - ensure communications to relevant people have been carried out in advance of application. - sign-off of drought order by Regional Director	- contact with partners and impacted groups

3.2.4. Post drought

When our monitoring and triggers show we are no longer in drought, our operations will return to normal. Those teams involved with monitoring, communicating and managing the event will collate information to ensure we gather an accurate picture of what we did and how well it worked. Our aim is to continually improve our understanding of the impacts of drought and ensure subsequent plans are improved through building on lessons learnt. For instance, we will be able to use evidence gained during the drought to improve our understanding of sites at highest risk from drought, and

prioritise where we deploy our resources under similar circumstances. We will review this information against that collated from other parts of our business to ensure we learn from impacts and actions from all around the country and not just our local experiences.

Table 13 Post drought conditions:

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
60	Assess evidence to see whether reduction in drought status to 'potential drought' or 'normal' is appropriate	- significant rainfall and previous triggers no longer applicable. Business operations returning to 'normal' and reallocated resource no longer required. All catchments are at potential drought or less	Drought coordinators	Drought teams & Technical teams (e.g. hydrology, FRB)	Drought managers	- closure of Regional drought board, Drought teams and Technical expert drought team - communicate decisions to downgrade the status	
61	Reduce reporting and communications and write post drought review	- hydrological triggers and activities return to 'normal'	Regional drought coordinator	Regional drought coordinator	Regional drought coordinator	- logs are closed. Lessons learnt document reviewed. Post-drought report completed	- review media interest in drought
62	Collate information on actions taken, environmental impacts, statistics on rainfall/flow and resources utilised. Actively seek feedback on the effectiveness of our drought plan, including the balance between abstraction and environmental protection	- declaring end of drought	Regional drought coordinator	Regional drought manager	Drought teams & Technical teams (e.g. hydrology, FRB)	- evidence collated from a series of years is used to identify likely sequence of events and impacts of a drought. Ensures greater confidence in dealing with subsequent droughts. Also captures data as justification for problems such as low dissolved oxygen (Humber Habitats Directive) and changes in water body status (Water Framework Directive) - feedback to Regional drought team and Regional drought board - produce drought maps for rainfall and groundwater recharge demonstrating progression of situation	

	Action	Trigger(s) for considering if action required	Who monitors trigger?	Who makes the decision on whether to take the action?	Who is responsible for taking the action?	Outcome/consequence & subsequent actions	Communications Activity (for drought team members)
63	Compile costs of managing drought and seek payment from water companies	- declaring end of drought - water company has applied for drought permits or orders	Regional drought coordinator	Regional drought manager	Regional drought manager		
64	Review drought monitoring and establish whether monitoring required for additional sites as consequence of drought needs to be maintained	- declaring end of drought	Area drought coordinator	Area drought coordinator	Area Environmental Planning	- monitoring programme is put in place or, accept routine monitoring is sufficient	
65	Assess collated information and incorporate into a lessons learnt report. Draw conclusions and make recommendations to improve or update the drought plan	- following return to 'normal' in all catchments. - annual review of drought plan	Regional drought coordinator	Regional drought manager	Drought teams & Technical teams (e.g. hydrology, FRB)	- improved drought plan with minimal work required for annual update in March each year	
66	Review condition of assets and reservoirs where drying conditions may have caused subsidence or damage. Ensure an inspection plan and maintenance programme appropriate to risk and conditions is delivered						
67	Continue to monitor the situation closely to ensure that the cessation of drought is sustained. If necessary consider return to potential drought conditions						

3.3. Hydrometric triggers

The starting point in any decision is hydrometric data (see Appendix A1). We use a combination of triggers to indicate that a dry period of weather is developing into a drought situation, or that there is a change in drought status. These triggers have been tested against historical records of drought to ensure they correctly describe known drought events. Table 14 shows indicative hydrometric triggers.

Table 14 Indicative hydrometric triggers to consider moving into potential drought and drought status

	SPRING	SUMMER	Groundwater
Potential Drought Period	**1st March - 31st May**	**1st June - 31st August**	**1st September - 29th February**
'Exceptionally low' flow for time of year	30+days	30+days	30+days
Scenario generating Drought Severity Index (DSI) at Yellow	no more rain	same rate of rain	no more rain
'Exceptionally high' Soil Moisture Deficit (SMD) for time of year or =maximum	6 weeks	8 weeks	8 weeks
Top 10 driest National Climate Information Centre (NCIC) rainfall (since 1910)	3 month total	6 month total	9 month total
levels in monitoring boreholes	below normal	below normal	notably low
Yorkshire Water reservoirs	Below EA control line and a downward trend		
Northumbrian Water reservoirs	Below control rules		
Kielder transfers actual or forecast	Operating		

Drought	**either short, sharp**	**or longer term**
'Exceptionally low' flow for time of year	45 + days	60+ days
Drought Severity Index (DSI)	red with same rate of rain	amber with same rate of rain
'Exceptionally high' Soil Moisture Deficit (SMD) for time of year or =maximum	6 weeks	16 weeks
National Climate Information Centre (NCIC) rainfall (since 1910)	< 4th highest over short term	< 6th highest in longer term
levels in monitoring boreholes	notably low	notably low
Yorkshire Water reservoirs	Predicted to head below drought control line	
Northumbrian Water reservoirs	Below lower control rules	
Kielder transfers	Sustained operations	

Triggers include the Drought Severity Index (DSI), river flows, rainfall, soil moisture deficits (SMD) and reservoir levels, as described below:

- Drought Severity Index (DSI) – the DSI uses long-term rainfall records to identify potential change in drought conditions. The cumulative deficit below the mean rainfall for the previous three to six months is used to identify four categories of

rainfall deficit (normal, moderate, serious and severe). These categories help determine the current drought status of the catchment: normal, potential drought, drought, or post drought. An example of a DSI report can be found in Appendix E.

- River flows – as flows become low for the time of year, the hydrology team will increase monitoring and situation reporting. The Q95 value is the flow that is equal to or exceeded 95% of the time and is typical of normal summer low flows. It is frequently used as a flow dependent condition on abstraction licences at which abstractors must stop taking water from a particular watercourse (HOF conditions). Flows may be above annual Q95 values and still be low for the time of year e.g. a dry spring may result in flows more usual for the summer months. This could provide an early indicator that the annual recession to low summer flows has started early and may cause problems later in the season.
- Soil Moisture Deficit (SMD) – a SMD occurs when the water content of the soil becomes depleted, and is determined as the amount of water required to return the soil to field capacity (when the soil is saturated but not waterlogged). The SMD data are provided by the Meteorological Office (Met. Office). The accumulating SMD is monitored, with levels in excess of 75mm indicating dry conditions and in excess of 130mm indicating very dry conditions.
- Reservoir stocks data – reservoir data are supplied weekly by both Yorkshire Water and Northumbrian Water. This information details the overall reservoir resources available as well as the situation in individual and small groups of reservoirs. Reservoir levels and rate of use are monitored and compared to control rules and historical data. However, reservoir stocks alone do not give an indication of available water supplies because water companies also abstract from rivers and groundwater for the purpose of public water supply.
- Groundwater levels – we have identified key boreholes which are representative of the water level conditions in our major aquifers. Triggers which are flagged to the Area drought team are when levels fall below normal, reach halfway to minimum and reach an historical minimum.

3.4. Other triggers

We will also use information from the catchment teams such as fish welfare, water quality and long term weather forecasts before taking drought actions. Our Environment Management teams look out for any pollution incidents that might have been made worse by low flow conditions or unusually dry catchment conditions that could indicate the commencement or increasing severity of a drought, and record these on our National Incident Reporting System (NIRS). Local knowledge, experience and judgement are an important part of drought management.

3.5. Sequence of drought actions

Following the onset of potential drought, Areas will increase the frequency of monitoring at the network of spot flow gauging sites on main rivers. This will involve spot flow gauging using portable electronic flow meters. Area Hydrometry and Telemetry (H&T) teams deliver this monitoring. Our hydrology team will interpret the

data and can request additional hydrometric monitoring when a drought trigger is reached. The Area drought coordinator will act according to advice given by the hydrology team and will consult with the H&T team leader to arrange for additional monitoring to be undertaken if required.

At a regional level there will be increased reporting, provision of briefings and liaison with water companies; this is the role of the Regional drought coordinator (with Regional drought manager support). As the situation deteriorates, and the Region moves into drought, this work becomes more formalised and more frequent, through the role of the Regional drought team.

Once an Area has recommended a change to potential drought, the regional drought team is convened. When escalating to drought, the Technical expert drought team is convened to ensure efficient consideration of drought permits and orders when required. The Regional drought team will manage all aspects of drought at the regional level, working closely with Area drought teams managing the drought at the Area level. Regional work will include preparing for, receiving and determining drought permit and drought order applications (drawing heavily upon Area expertise).

If the drought becomes sufficiently serious (as determined by the Regional drought team), the Regional drought board will form to provide higher level support. The Regional drought board consists of senior managers and is established when it is apparent that resources from other teams and parts of the business will be needed to manage the situation.

3.6. Working with specific sectors

3.6.1. Direct abstractors

In order to manage water resources and protect the environment across England and Wales, the Environment Agency grants abstraction licences. During a drought, one of our key roles is to make sure that abstractors are complying with the terms given in their licences irrespective of whether the water is being used for public water supply, agricultural, industrial or other purposes. As part of our core duties, we visit all licence holders on a variable frequency to ensure that licences are being complied with. We will adapt our frequency and targeting of locations as a drought develops. Some abstractions also have restrictions on the time of year when they can be used. These are typically agricultural users, frequently for spray irrigation. Spray irrigation licences are typically written to allow abstraction in the growing season from April to October. Other conditions allow some people to only take water in winter to refill storage reservoirs for subsequent use of the water later in the year when resource may be less reliable. Other licences are restricted by HOF conditions (see Section 1.4.2).

We have the power under Section 57 (s57) of the Water Resources Act 1991 to restrict abstractors with licences for spray irrigation. To impose s57 restrictions we will need to set trigger levels for when these restrictions will need to be implemented. To date, we have not needed to use such a regulatory control as river flows are

generally protected by HOF conditions. However, we have some areas where HOFs do not exist on licences and environmental damage may result from continued abstraction for spray irrigation. Although we hope not to have to use them, we will develop our s57 process and identify the triggers for restrictions to come in operation. We will identify the best way forward through consultation with organisations that represent those affected (such as the NFU) and other interested bodies (including Natural England). We will draw upon best practice from other Regions where s57 restrictions have been used in past droughts (for example in Anglian Region) to develop our approach.

We will still only consider s57 restrictions when HOFs, other mechanisms and voluntary measures have not worked. We will work closely with the farming community, perhaps through agricultural liaison groups, prior to s57 restrictions being enforced.

We do understand people's concern for their livelihoods when water restrictions are applied and therefore take great care to ensure that we strike the right balance between the needs of the environment and those of abstractors. When considering the need to impose any extra controls, our decisions will be based on a detailed assessment of the local water situation. During a drought, we aim to liaise closely with licence holders and relevant organisations such as the National Farmers Union (NFU) and Country Land and Business Association (CLA) to find the best local way forward.

During dry weather there may be opportunities for us to work with Internal Drainage Boards (IDBs) to manage water to provide both agricultural and environmental benefits. We want to explore the possibilities directly with the boards where, for example, it may be possible to retain a higher than normal summer water level in field drainage systems. We aim to develop a workable way forward, in consultation with drainage boards and other interested parties. This will not happen until we have investigated the options thoroughly and talked to other Regions where such measures have been used successfully in previous droughts.

3.6.2. Working with British Waterways

Low reservoir stocks and licence restrictions can also affect navigation in our Region. We will aim to have early dialogue with British Waterways (BW) and ensure as much notice as possible is given, for example, before a cessation notice is sent. When flows are at or around HOF conditions on BW licences, our Area team in Yorkshire will be in frequent communication with BW to ensure abstraction is managed in such a way as to maintain navigation without restrictions as far as possible.

When the abstraction licence HOF is in force, we expect BW to undertake activities to promote efficient use of water. These may include restrictions in boat use on the canal network to reduce demand and conserve stocks. It is the decision of BW to decide whether to impose these restrictions. We do not use the closure of a canal or other restrictions being put in place as a trigger for drought and we may see these

sorts of restriction under 'normal' conditions. We will however assess the resource required to manage the situation and use this when considering our own drought status.

3.6.3. Protecting fish stocks

During a drought, we take local decisions about where and when to carry out actions to protect fish stocks. Along with partners such as Natural England and BW, we may need to rescue fish in distress or move Biodiversity Action Plan (BAP) species (e.g. native white-clawed crayfish) where the risk of drought threatens to impact on the integrity of the population. We will work with partners to ensure action is taken as quickly as possible but it is expected that in dry weather we will not always be able to rescue fish in distress and therefore we will only attend sites identified as priority locations. Wherever possible we will contact fishery or riparian owners before we act. We encourage anyone seeing signs of environmental stress to call our Environment Agency incident number of 0800 807060. Where timescales permit, we may change our operations to help mitigate any adverse impacts and may need other riparian owners to do the same.

Where it is not possible to move fish, we will consider whether we can utilise other techniques such as aeration of water bodies at risk. This tends to work in smaller, discrete water bodies with limited flow. Our ability to do this depends on the availability of hydrogen peroxide and trained staff; we will only be able to respond to a few incidents using this technique. We will prioritise these locations according to the conditions.

In our North East Area we will need to carefully consider the utilisation of the Kielder transfer. The movement of water across catchments is expensive and requires considerable amounts of energy with associated carbon costs. Northumbrian Water operate the system to ensure they protect public supplies and, in dry years, will need to move greater volumes of water. If required, we can also request that additional water is released from Kielder to support fish migration at appropriate times.

3.6.4. Protecting the environment

Droughts are natural events and therefore environmental stress will be unavoidable. We need to minimise the impact however, through the actions we and others take. Our actions can include tightened enforcement to ensure compliance with regulated activities, fish rescues or aeration, or additional regulated measures such as HOF's. In the Region we have only one RSA site where we are looking at restoring sustainable abstraction, where we have identified a licensed abstraction volume that has the potential to damage a designated or local site. We involve our biology, ecology and conservation technical experts in the drought teams to ensure the impacts of our actions are assessed and mitigated against. Where we know of water dependent designated sites/species, we will consider the impacts of our actions on those sites although in most cases our actions will be to the benefit of those sites or features.

4. Drought monitoring

We do routine drought monitoring as part of our national monitoring programme to provide data for detecting the onset and end of drought and assessing impacts during a drought. This includes data from:

- rainfall totals;
- indicator flow gauging station network;
- groundwater level monitoring network;
- national ecological drought surveillance network;
- surface or ground water quality monitoring networks;
- reservoir storage data.

We may collect additional hydrometric, ecological or other data during a drought.

This section describes the additional data we collect for drought purposes and how it is used. Further information on our river monitoring for example can be found in at What's in your backyard.

4.1. Hydrometric monitoring

We routinely monitor weather forecasts, rainfall, river flows, groundwater levels, reservoir levels and soil moisture deficits to help us decide when to move through the stages of drought, identify triggers that have been crossed and when to take action. As a drought develops, our teams increase the level of hydrometric monitoring to track the development of the drought and its impacts.

In a period of heightened awareness, our Hydrology team will:

- increase monitoring of drought triggers and disseminate findings by email and direct liaison with the Regional and Area drought teams;
- inform relevant Area staff of river and rainfall conditions in comparison to the long term averages;
- provide a water resource report to the Area drought team;
- inform the Regional drought coordinator of any changes.

4.2. Ecological monitoring

Drought can affect aquatic communities in a number of ways. In upland streams this may be as severe as rivers drying up completely or being reduced to isolated pools. Natural upland streams will have macro-invertebrate communities that have evolved to be able to withstand periods of low flows. However, where streams have been supported by compensation flows, released at a set volume over many years from

specific reservoirs, the macro-invertebrate communities will not be used to the periodical low flows, and will be less able to withstand the effects of drought.

In addition to the effects of reduced flows, the macro-invertebrate communities will also be exposed to alterations in temperature and increased concentration of pollutants resulting from decreased dilution of effluents. Lower reaches of the river system will have reduced flow rates and therefore water will stay longer in the river. This will allow the increased growth of planktonic algae, which use up oxygen and therefore decrease the oxygen concentration in the water further.

We carry out ecological monitoring to understand the impact of drought on the health of the environment. The national ecological monitoring network (Appendix A2) ensures that monitoring starts long before the onset of drought and will continue after drought ends to assess any long-term changes.

Within Yorkshire Area, drought monitoring downstream of compensating reservoirs is required to understand the impact of drought orders and permit applications. Monitoring will also enable targeted mitigation measures to be put in place where immediate action is required. The core ecological monitoring programme for 'drought' purposes within Yorkshire Area is managed and funded by Yorkshire Water Services. Details are given in Appendix A3.

No sites within our North East Area are monitored specifically for drought purposes. This is because there is no recent history of drought and so it is not possible to predict where a drought might occur. Once North East Area enters into a drought, after crossing hydrometric triggers, a decision would be made as to the type and amount of ecological monitoring required, as well as the timescales for this. This will only apply to watercourses that are not regulated or compensated by reservoirs.

Additional monitoring may be needed during a drought to increase the number of sites sampled or frequency of sampling to understand the full range of shorter-term impacts. We will consult with Natural England where an action is proposed that may impact on a protected site, but we do not guarantee that any additional monitoring will be carried out. We will base our response upon our technical review of the evidence provided in support of the additional monitoring. The frequency and duration of monitoring will be dependent on the nature of the site and the type of drought. All available data would also be used to identify the most and least sensitive sites and would therefore identify where there may be a greater need for monitoring and protection. Any extra monitoring that is implemented during a drought would continue until conditions return to normal or sufficient data has been collected to answer the original question we posed. If a drought order was granted to a water company, the Environment Agency would reach an agreement for extra monitoring to be done by the company, or be funded by them. This would form part of the drought order.

4.3. Monitoring for fish

Drought conditions can have major impacts on fish populations. Low flow conditions can result in higher water temperatures, increased competition for space and food and increased predation. Low flows during the summer months can result in failure to spawn. If conditions continue to deteriorate, fish mortalities may occur due to stress from the increased water temperature and decreased oxygen availability. In upland areas, trout streams may dry up although, to an extent, trout have evolved to deal with these events, surviving by moving downstream or congregating for periods in pools. In the event of a watercourse completely drying out there are likely to be fish deaths. Fish are much less mobile than macro-invertebrates that often have a terrestrial adult phase and recolonisation will be much slower or even impossible due to barriers to movement.

Drought conditions can also impact on the success of angling due to fish being stressed and highly visible.

In the event of an actual or potential drought trigger being reached, visual observations will be increased. Fisheries Officers will visit all parts of the catchment and visually monitor the river to identify adversely affected areas. If conditions deteriorate we may need to relocate fish to a more suitable location, ensuring a mixture of size groups are left to aid natural recovery of the population.

In areas where algal blooms are present, oxygen concentration of the water will decrease, especially overnight. Other stretches of water may also experience low dissolved oxygen levels. Species particularly sensitive to lower dissolved oxygen and warmer water temperatures, such as brown trout and grayling, will often be first to show signs of stress, although as conditions worsen the impact will be felt further downstream where coarse fish (e.g. roach, bream) predominate.

North East Area has an oxygen-based supply and demand model that can predict fish deaths in the Tyne estuary. This model predicts fish response to low flows and is not a drought trigger or indicator, but can be used rather as an early warning system, alerting us to the possibility of conditions that may lead to a drought. To reduce problems with fish in the Tyne estuary, there is the possibility to carry out periodic releases of water from Kielder reservoir, guided by the modelling. Such releases should only be requested in exceptional circumstances, subject to agreement with Northumbrian Water, since a natural flow regime is preferable wherever possible.

4.4. Water quality monitoring

Water quality samples are collected from a large number of points within the main rivers of the Yorkshire and North East Region. The reasons for sampling include:

- monitoring associated with national and international commitments (for example European Directives including the Water Framework Directive);
- monitoring associated with programmes agreed by the Environment Agency solely with the United Kingdom Government (for example Defra);
- monitoring associated with programmes agreed at National Level by the Environment Agency and implemented in all regions;
- monitoring associated with operational programmes agreed at Regional and Area level and implemented locally.

Any additional monitoring required would enable us to assess the effectiveness of specific actions taken. The data will be used to identify points within the river where the impacts of the drought on water quality are most acute and provide information about appropriate responses.

When entering a drought situation, we will work with water companies to determine how emergency or storm overflows are reported to the Environment Agency Incident Communication Service (ICS). Integrated Pollution Prevention Control (IPPC) regulated critical sites, where self monitoring and reporting is carried out by the operator as a requirement of their permit, will be spot sampled on a fortnightly basis by Environment Officers. All drought related in-river sampling shall to be given high priority by the Environment Agency laboratory.

Significant discharges are those with a major discharge load in relation to available dilution. These sites require rigorous regulation to minimise the impact on water quality and the aquatic ecosystem. We expect that significant discharges to controlled waters will have a greater impact on water quality at times of drought due to the reduction in the available dilution. The majority of these discharges will be from sewage treatment works, operated by the water companies. We currently have a risk-based monitoring programme associated with consented discharges; this usually includes monitoring of the discharge and the receiving watercourse. It is anticipated that in most cases the existing monitoring programme will be sufficient to provide early warning of deteriorating quality of the discharge, the watercourse or both. The most important factor here is to ensure the rapid analysis of the monitoring data to ensure that problems are identified at an early stage.

The most significant discharges are monitored on a weekly basis and we do not expect that monitoring will be required more frequently than this. The next level of monitoring is fortnightly with the majority of discharges being sampled monthly. We anticipate that this is too infrequent to provide effective data upon which to base operational decisions. Additional monitoring should only be considered where there is

a reasonable expectation that action can be taken to improve the quality of the discharge and that in turn this will have a positive effect on water quality.

Some smaller discharges are monitored infrequently, yet in drought conditions the impact of these discharges can be severe. Holiday parks, caravan parks and campsites often have treatment plants that are under the most stress during the summer months when drought conditions are most likely to exist. Such discharges should be identified at an early stage, and if routine monitoring is not programmed, additional monitoring will be required. Should the discharges be outside the terms of the consent then it should be a high priority to initiate action through our enforcement policy to ensure compliance. As part of the post drought review, consideration should be given to an analysis of discharge consents, which had either a quantifiable impact or potential impact in lower flow conditions when adequate dilution was not available, and if necessary instigate a review of the conditions.

Sites covered by IPPC, where operators self monitor discharges, will be requested to provide results of all analyses to the Area drought team's environment management representative, as soon as they are received from their laboratories. Normal reporting by the Permit Holder to the Environment Agency's Process Industry Regulatory team (PIR) will continue. The Catchment Coordinator will tabulate results for discussion at Area drought team meetings in order to identify and assess any trends or quantifiable impacts being observed at the main river water quality monitoring sites.

Water companies will report any operation of emergency overflows or storm overflows immediately to us. Should an impact be noted from any critical discharge, an emergency Area drought team meeting would be convened, to discuss possible tightening and variation of discharge consent(s) under a drought order (see Section 5).

Both Yorkshire Water and Northumbrian Water companies are engaged in programmes for asset improvement which may mean that effluent treatment is compromised when civil engineering work is taking place. This may be through the temporary relaxation of conditions on permits or consented discharges. However, we would not take such a decision lightly and would carefully consider the work and its impacts on a case-by-case basis. We would expect the work to be carefully planned with monitoring and mitigation measures in place, and risks evaluated. And we would take a precautionary approach if the works impacted upon a sensitive site. If a drought is declared, the programme of works for each of the water companies needs to be checked with the two programme coordinators within the Regional Environmental Planning Water Quality team.

As drought continues, the improvement programme should be regularly consulted and consideration should be given to negotiating with the water company involved to minimise the impact of improvement works on the environment during construction.

4.5. Water company liaison

We routinely receive information from water companies as part of our water situation reporting. During a drought, we receive additional information from the water company to help us track the development of the drought and to monitor their actions.

Water companies are responsible for ensuring that arrangements are in place to monitor the impacts of their drought management actions on the environment; these will be identified in their drought plans. In certain cases it's more practical for us to carry out the monitoring work instead of or in addition to the water company. Where we carry out additional monitoring on behalf of a water company in relation to a drought permit or order application then we will recover the costs we incur.

Water companies must keep the Regional drought coordinator informed of the actions they are going to take as a drought progresses. These will include measures to reduce demand, such as publicity campaigns and temporary water use restrictions and measures to increase supply, such as reintroducing abandoned sources and upgrading water treatment works**.**

5. Drought permits and drought orders

Drought permits or drought orders are granted either by the Environment Agency or Government Ministers to maintain public water supplies or protect the environment where there has been an exceptional shortage of rain. If granted, drought permits or orders allow:

- water companies to abstract more water;
- water companies to reduce other abstractions;
- the Environment Agency and water companies to reduce compensation requirements from reservoirs;
- water companies to restrict certain types of water use;
- the Environment Agency to modify, restrict or stop abstractions to protect the environment.

There are three measures available: drought permits, ordinary drought orders and emergency drought orders. The Environment Agency determines drought permit applications submitted by a water company. The Secretary of State determines and grants drought order and emergency drought order applications from water companies, using advice given by the Environment Agency. Drought orders applied for by the Environment Agency are also determined by the Secretary of State.

This section sets out how our drought teams and National Permitting Service (NPS) deal with water company drought permit applications and respond to Ministers on drought order applications in Yorkshire and North East Region. It shows how the Regional drought team will delegate detailed consideration of water company drought permit/order applications to the Technical expert drought team identified in Section 2. A summary of who is responsible for the variety of key roles required for a drought permit or order application is given in the following sections. Finally we also set out if, where and how we apply for drought orders to protect the environment.

When dealing with all drought permits and orders applications, we follow the guidance available in the joint Defra/ National Assembly for Wales/Environment Agency guideline and in our internal guidance 31_10 How to deal with water company drought permits and 32_10 How to respond to drought order applications.

5.1. Water company drought permits

In an escalating drought, only a water company can apply for a drought permit and only we can determine and then grant or refuse it. We must be satisfied that a serious deficiency of supplies of water in an area exists or is threatened, and that the reason for the deficiency is an exceptional shortage of rainfall.

Our key actions in granting or refusing a drought permit are set out in Figure 11. A drought permit can only:

- authorise a water company to take water from specified sources;
- modify or suspend any restrictions or obligations to which a water company is subject that relate to the (existing) taking of water from any source.

The water company must prepare an environmental report for the proposed site in advance of an application, setting out the anticipated effects of the proposal and any impacts on other abstractors. If the proposal affects a Site of Special Scientific Interest (SSSI), as the Section 28G authority under the Countryside and Rights of Way Act (2000), we must give notice to Natural England and take into account their advice before granting a drought permit that we believe is likely to damage a site. If the proposal affects a Habitats Directive site, we must undertake an appropriate assessment of the effect on the site. If we believe there to be an adverse effect, we can only grant the drought permit if there are no alternative solutions and the drought permit is required for imperative reasons of overriding public interest. In this situation, measures will be required before the drought permit can be issued. If the proposal affects a navigation authority, the written consent of that authority must accompany the drought permit application. We will be in discussion with the water company to identify appropriate environmental monitoring and mitigation arrangements for any drought permit application.

We will not normally grant a drought permit where a water company has not implemented additional demand management techniques prior to the application. Such measures would include publicity campaigns, temporary bans on water use, leakage control and mains pressure reduction. However, there would be exceptions to this rule where, for example, the savings would be minimal (as with a hosepipe ban in winter).

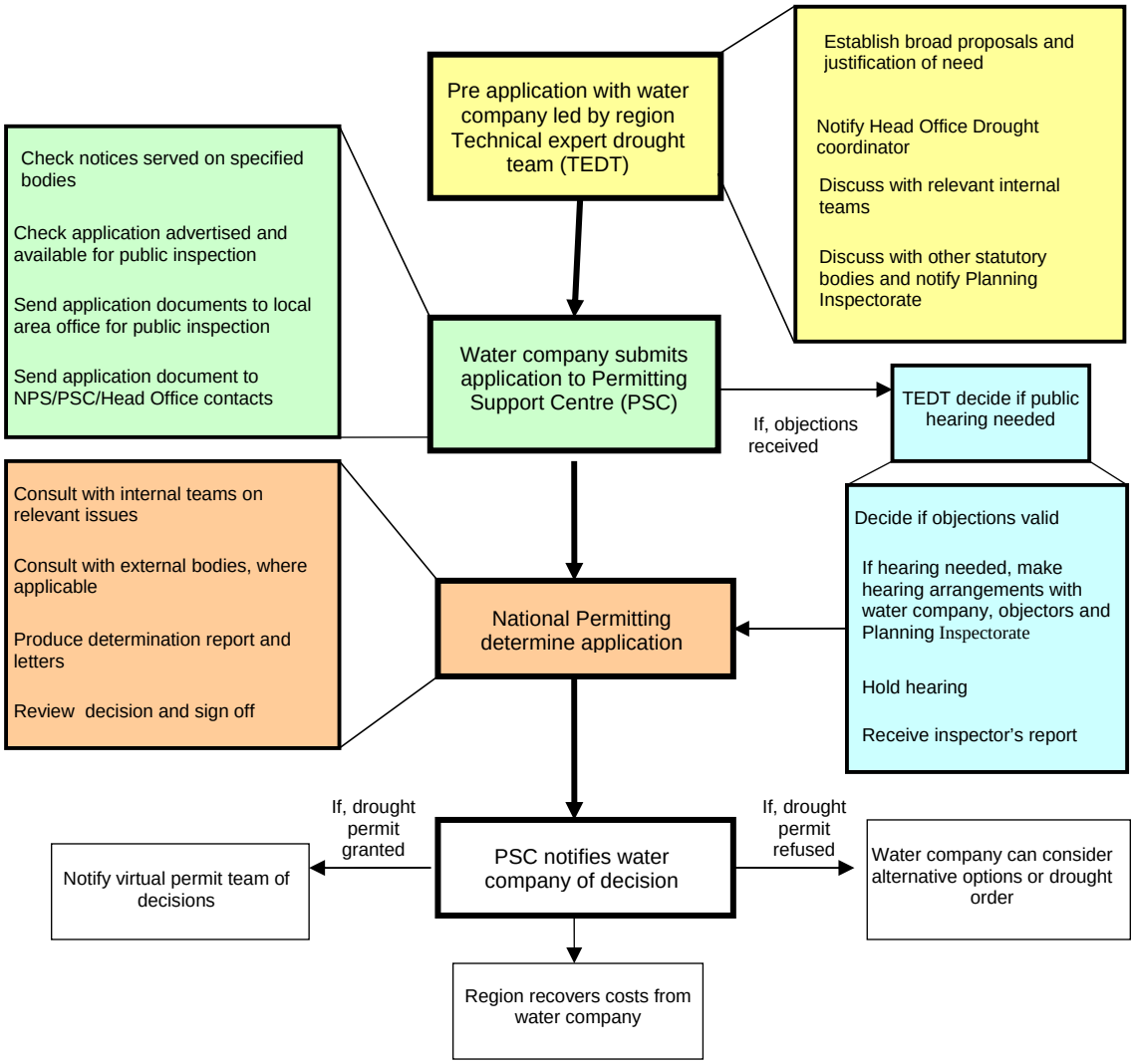


Figure 11 Key actions for granting/refusing a drought permit

Table 15 Key responsibilities for drought permit applications

Key role			Lead
Drought permit	**Pre-application lead**		REP water company lead
	Pre-application support		AEP, PSC, NPS
	Receive application		PSC
	Lead on determination		NPS
	Support for determination	**Justification of need**	TEDT, Hydrology
		Provide local information	TEDT, Ecology, Environment Management leads
		Legal support	RDT legal lead
		Identify conditions	TEDT
		Technical review	TEDT
	Sign-off		NPS manager/Area Managers
	Arrange hearing/inquiry		TEDT
	Appoint Inspector		TEDT
	Receive objections		PSC
	Monitor compliance		ADT

REP – Regional Environmental Planning
AEP – Area Environmental Planning
NPS – National Permitting Service
PSC – Permitting Support Centre
RDT – Regional drought team
ADT – Area drought team
TEDT – Technical expert drought team

5.2. Water company drought orders

A water company can apply for a drought order as can the Environment Agency (see below). Only the Secretary of State (or Welsh Ministers for Wales) can determine and grant/refuse it. Our role is to provide information to the Secretary of State so that he/she may determine a water company application for an order accordingly. We must be satisfied that:

- a serious deficiency of supplies of water in an area exists or is threatened;

or

- such a deficiency in the flow or level of water in any inland waters as to pose a serious threat to any flora or fauna, which are dependent on those waters, exists or is threatened;

and

- the reason for the deficiency is an exceptional shortage of rain.

Key actions are set out in Figure 12.

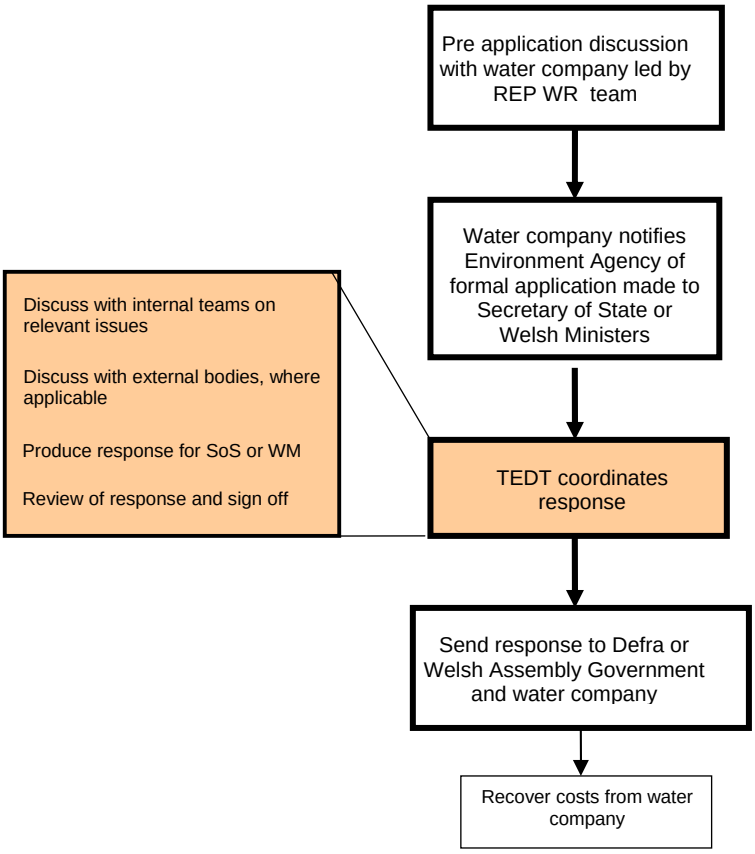


Figure 12 Key actions for water company drought order applications

A drought order can go further than a drought permit. It can authorise a water company to:

- take water from a source specified in the order;
- prohibit or limit the use of water for any non-essential purposes in the Drought Direction 2011;
- discharge water to a place specified in the order;
- authorise the Environment Agency to prohibit or limit the taking of water from a source specified in the order;
- prohibit or limit the taking by the Environment Agency of water from a source specified in the order;
- suspend or modify restrictions or obligations to which the water undertaker or any sewerage undertaker or anyone else is subject with regard to taking, discharging, supplying or filtering/treating water;

- authorise the Environment Agency to suspend, vary or attach conditions to any consent for the discharge of effluent by anyone.

As for drought permit applications, we expect to see environmental reports from water companies for the proposed site detailing anticipated effects. As with drought permits, we will not normally support a drought order application where a water company has not implemented additional demand management techniques.

Sites for drought permit/order applications are identified within Yorkshire Water's drought plan, and provided in Appendix B. These include those applied for in the 1995/96 drought. Northumbrian Water and Hartlepool Water levels of service, as stated in their water resource management plans, mean they will not have any drought permit/order applications.

Table 16 Key responsibilities for drought order applications

Key role			Lead
Drought order	**Pre-application lead**		REP water company lead
	Pre-application support		AEP, REP, NPS
	Receive application		Secretary of State
	Lead on response to Secretary of State		TEDT
	Support for response	**Justification of need**	TEDT, Hydrology
		Provide local information	TEDT, ecology, Environment Management leads
		Legal support	RDT legal lead
		Identify conditions	TEDT
		Peer review	TEDT
	Sign-off of response to Secretary of State		Regional Director
	Arrange hearing/inquiry		TEDT
	Appoint Inspector		Planning Inspectorate
	Receive objections		Secretary of State
	Monitor compliance		ADT

REP – Regional Environmental Planning
AEP – Area Environmental Planning
NPS – National Permitting Service
PSC – Permitting Support Centre
RDT – Regional drought team
ADT – Area drought team
TEDT – Technical expert drought team

5.3. Emergency drought orders

Emergency drought orders go further than ordinary drought orders. They are used where a drought situation is likely to impact upon the economic or social well-being of people in an area. They allow water companies extra powers to:

- limit the use of water for specific purposes (outside of the Drought Direction 1991);
- set up and supply water by means of stand-pipes or water tanks.

Emergency drought orders must be preceded by full use of ordinary drought orders and, where suitable, drought permits.

Our role is the same as for ordinary water company drought orders, providing advice to the Secretary of State to aid their determination of the water company application.

5.4. Environment Agency drought order applications

We set abstraction licence conditions that will protect the environment during a drought. But we can apply for an Environment Agency drought order if the environment is suffering serious damage as the result of abstraction during a drought or should we wish to change compensation releases from a reservoir. We manage abstractions to protect the environment and during drought periods will work with partners to minimise the environmental impact.

We would consider applying to the Secretary of State for a drought order, for example, to:

- vary an existing Environment Agency licence for a river augmentation scheme where the river environment is at risk;
- prevent excessive compensation releases where a reservoir is at risk of drying up and the water company has not applied for a drought order or permit, to produce a more normal reduction in flow to give the environment more time to adjust;
- prevent releases where a reservoir is so low that compensation water is likely to prejudice water quality (i.e. with sediment etc).

There are a number of reservoirs where a drought order could be used to protect the environment through the modification of compensation discharges. If the reservoir is linked to abstraction for public water supply, the water company will apply for these. However, if the reservoir is not associated with a public water supply abstraction, we will consider applying for a drought order for environmental purposes. It is possible that those interested in the river environment (e.g. angling clubs, environmental groups etc.) may also ask us to exercise these powers. It is at our discretion whether we will do so or not, and in exercising that discretion, we will have to consider the matter in the light of our duties under Sections 6 and 7 of the Environment Act 1995. Section 6 concerns our responsibilities to manage water (including proper use of

water resources) while Section 7 details our general environmental and recreational duties.

We are currently reviewing where we might apply for a drought order, to restrict compensation releases to prevent reservoirs drawing down at a rate that will put the downstream river environment at risk. The triggers will be based upon storage capacity and rate of drawdown of reservoir levels, weather forecasts, water company information and the status of the downstream environment. If we chose to apply to the Secretary of State for a drought order on environmental grounds, we will produce an environment assessment report to support the application. The content will be consistent and to the same level of detail as that which we would expect of a water company drought order application.

We will not apply for an emergency drought order as they do not allow the Environment Agency to do anything above that allowed through an ordinary drought order.

5.5. How it will work in practice

With water company drought permits and orders, the regional water company lead will be the point of contact for pre-application discussions although another member of staff may be identified to coordinate actual applications or to support pre-application work.

Once an application for a drought permit has been received, the National Permitting Service will lead the determination process, with Area and Technical expert drought team support.

For the Regional and Area drought teams within the Yorkshire and North East Region, a nominated drought team member will become the primary point of contact for drought permit/order work whereas the Regional drought coordinator will form the point of contact for drought permits/orders on behalf of the Regional drought team and Technical expert drought team.

On behalf of the Technical expert drought team, Yorkshire and North East Hydrology team will review the hydrological situation in order to determine the Environment Agency's response to the stated need for drought order/permits.

When an application for a drought order has been received, the Technical expert drought team will provide advice to the Secretary of State for drought orders, maintaining a close dialogue with Area drought teams and National Permitting Service at all times. The Technical expert drought team should prepare for receiving drought permit/orders by reviewing the conditions Area drought teams have designed for expected drought permits/orders.

The technical work associated with drought permit and order applications includes:

- identifying appropriate conditions for the support of drought order/permits;
- identifying additional ecological and hydrometric monitoring requirements;
- ensuring compliance with guidelines for the preparation of environmental action plans for drought permits/orders;
- ensuring Habitats Directive requirements are met fully.

The Regional drought manager will:

- ensure key personnel and resources, together with support staff, are ready to deal with drought permits/orders.

The Technical expert drought team will provide advice, quality review, and disseminate best practice across Area drought teams, across regions and with the National Permitting Service, to ensure a common standard of response to applications.

To ensure we are able to submit sufficient information to support any drought order applications we will be carrying out additional work to complete the environmental assessments.

Having determined the validity of the application and the Environment Agency's required conditions, the Technical expert drought team will advise the Regional drought team who will seek final agreement on our approach from the Regional drought board. The Regional drought team will then provide the Environment Agency's response to the applications. Contact with Area drought teams and National Permitting Service will be maintained throughout this process, the Technical expert drought team advising relevant team members and providing continued feedback to improve the determination process.

Ultimately the National Permitting Service Manager or Area Manager will approve drought permit applications. Our Regional Director will approve our response on water company drought order applications that we make to the Secretary of State.

6. Drought reporting and communications

A large part of each drought team's work is reporting and coordinating drought communications across the Yorkshire and North East Region and with our partners. This includes communicating with neighbouring drought teams and our national drought team. Externally, the appropriate drought team leads on communications with local communities and on working with organisations spanning more than one area. This section sets out how our drought teams communicate with others, what we want to say and when.

Before, during and after a drought we are happy to receive feedback on what is going or has gone well, or where we need to improve. Our approach and our drought plan will become stronger through understanding lessons learned. All feedback should be made through either the Area or Regional drought coordinators to ensure we do not miss any messages associated with the drought. Details of the drought coordinators will be made available on our webpage and other drought correspondence, or they can be reached through our National Customer Contact Centre (03708 506506).

6.1. Reporting

6.1.1. Routine water resources situation reporting

Northumbrian Water and Yorkshire Water report their respective water situations weekly to the Environment Agency. The information on reservoir stocks will provide a trigger for opening liaison with the water company should stocks fall as a result of a developing deficiency in rainfall.

Our Regional Hydrology team produces a routine water situation report on a monthly basis, in line with internal Head Office guidance "795_08 How to produce monthly water situation reports". The report is shared with Drought coordinators within the Regional and the Hydrology teams, and feeds through into the Regional water situation page on our external webpage Y&NE water situation report. It forms the hydrological basis for reporting to internal management and is used to inform media request. An example is given in Appendix F1.

6.1.2. Drought water resources situation reporting

The onset of a drought necessitates increased awareness of the hydrological and water situation. In turn, this may require an increase in the frequency of reporting. Drought reporting needs to:

- be flexible to deal with spatial extent and intensity of the respective drought;
- be accessible to a wide audience;
- provide timely information;
- mirror routine reporting as far as possible to minimise confusion;
- reflect drought action issues.

We have a number of internal reports that are specifically generated by dry conditions (see, for example, Appendix F2) .

Area-specific reports will be produced to keep key Area staff and management informed of any developing drought situation. We would not expect North East Area to experience the conditions needed to report in this way. The Yorkshire Area report is then used by the Regional drought manager to produce a Regional version for sharing with the Regional SMT representative, Drought managers and coordinators. It will feed into a regular report to senior Regional managers, the "Monthly Performance Report". We also share this report with the National drought coordinator. This report will be produced where the Region is experiencing impacts from a prolonged dry spell but when it is not in drought.

Weekly reporting to the National drought coordinator occurs when the National drought team has been established and has increased the frequency of reporting. This is when we would expect at least one Environment Agency Region within England and Wales to have moved to drought status. It takes the place of the Regional report referred to above. This report follows a set template (see Appendix F3) and covers:

- rainfall statistics and triggers;
- relevant groundwater levels;
- affected river flow and level data;
- respective reservoir stocks;
- abstraction related information;
- fisheries, ecological and water quality effects, as appropriate;
- number of drought orders and permits in force;
- number of hosepipe bans in force.

Our Head Office team will use the information supplied by the Regions to manage drought on a National scale and to inform Government and national media. Our weekly Regional reporting will be sent through to the SMT representative and to the National incident Room. The National Incident Room can be established to manage all major incidents, and can be established for drought purposes when the National drought team has been convened.

We will also take advantage of any internal methods to disseminate simple informative messages about the water situation within the Region. We will arrange to have an internal e-newsletter monthly update while the dry weather persists. We will also keep wider Environment Agency staff informed through monthly staff "Cascade" team briefings when we feel it is required.

Where there are clear links to specific sectors, for example to a particular industrial, horticultural or agricultural activity, we will attempt to disseminate timely and key messages. We would look to do this through working with trade associations and representative bodies including, for example, the NFU. However, at this time we will probably be responding to a large number of private and media enquiries and so our actions will be dependent on our internal resources and the severity of the situation.

6.2. Communications

6.2.1. Communications action plan

The Yorkshire and North East Region communications action plan includes separate sets of actions appropriate for communicating with our internal teams and external partners. These are linked to our drought triggers.

The actions take into account:

- our responsibilities;
- requirements of individual teams and sectors;
- severity of the drought;
- current public perception of the drought situation;
- need to conserve water;
- water company actions;
- other ongoing communications activities, such as flooding awareness.

You can find the drought communications plan in Appendix C. At the onset of drought, the communications action plan is tailored to the specific needs of the individual drought event. The Regional drought coordinator and Regional drought team communications officer updates the plan when in potential drought and maintains the plan throughout the drought event.

6.2.2. External communications

The drought communications action plan identifies a number of external communications actions. We have set these out in Appendix C .

6.2.3. Local Resilience Forums

Local Resilience Forums (LRFs) co-ordinate planning activities during a civil emergency. Droughts are not emergencies unless there is a serious threat of restrictions to public water supply such as standpipes or rota cuts. In these circumstances, our drought teams will work with LRFs to make sure that water companies assess the risk of drought properly and take all the right steps to avoid standpipes or rota cuts wherever possible. We also want to develop our links with the LRFs (including the Fire and Rescue Service) so that we can work better together to manage the threat from moorland fires (see Section 1.4.4). We will improve our engagement with LRFs before the next full review of this plan.

6.2.4. Internal communications

Within the drought communications plan, we have identified a number of internal communications actions. These are set out in Appendix C.

6.2.5. Head Office Emergency Liaison Procedure reporting

As drought escalates, the resource and time needed to manage the situation increases and the impact on business operations and the environment increases. Under such circumstances we need to follow the Head Office Emergency Liaison Procedure (HELP). HELP is the means by which we inform senior management of significant threats and events happening in the Region or Areas which may affect health and safety, the environment, delivery of our operations and our reputation.

HELP ensures that any notifiable events are passed to the Director of Operations within two hours. A notifiable event is one within our area of responsibility and/or interests and falls into one of the categories identified within our internal HELP procedures (as given in “05_01 Head office emergency liaison procedure (HELP)”). Drought falls within this definition.

There are four reports which will need to be considered: initial report, update report, closedown report, or an initial and closedown report for short lived events that have been swiftly resolved. Internal guidance is available to help us write the reports and provides details on roles and responsibilities.

6.2.6. Communications toolkit

When our National drought team moves into potential drought, a national communications toolkit is created. The toolkit is stored on our internal shared drive at Drought Comms Toolkit. The folder contains drought messages, questions and answers, drought briefings, standard templates and examples of best practice communications. Our drought teams use information from the toolkit, and adapt it where necessary, for local communication needs.

7. Post drought

It is important we review the actions we took during a drought event and identify any improvements we can make to managing future droughts. We also monitor how the environment is recovering as a drought recedes. We can use our observations to feed into longer term work including water resource management plans and the Water Framework Directive.

7.1. Monitoring

Any additional monitoring that has been identified and implemented during a drought will continue until conditions have returned to normal. This may take a matter of months or some years dependent on why the monitoring was requested.

7.2. Review

Once our drought teams across England and Wales have returned to a normal (non-drought) status, we will conduct a drought review. Drought teams will meet internally within Region to review how we managed the drought and its impacts, what went well and where we can improve. Each of our Regional drought teams will write a post drought report, which will feed into the Head Office drought report. We will produce this report no later than six months after the drought. The Regional drought coordinators will lead on producing the post-drought review. We will actively seek feedback on how successfully we have managed the drought, particularly the balance between abstraction and protection of the environment.

7.3. The future

In May 2011, the Secretary of State for England issued a statement relating to how various organisations, industries and government departments work together to coordinate a response to drought which is appropriate and timely. We will use our drought communications plan (Section 6 and Appendix C) to develop a closer working relationship with key interested parties to identify the most appropriate way of managing limited water resources. We currently work with other organisations such as British Waterways, National Parks and water companies routinely, but will need to be more proactive with these and other partners to plan for the short and long term security of water resources.

We aim to improve how we work with key users of the water environment. In particular we want to explore how we could help establish and work with Abstraction Liaison Groups for the agricultural community so that we can improve our response to managing the impacts of drought and, in the longer term, climate change.

Our long term objective is to improve resilience when faced with uncertainties over climate change and increasing population and demands for water. But

improvements, adaptation and mitigation will need time to develop. We aim to integrate the mitigation of drought risks within other work such as Water Framework Directive, water company business planning (through Ofwat's Periodic/Price Review process) and providing advice to business. This plan does not attempt to deal with these issues but recognises the need for them to be developed.

We have identified a number of areas where we want to improve processes identified within the plan, for example how we might use drought orders for environmental benefit.

We will carry out annual reviews of our drought plan to incorporate change, but be careful to maintain flexibility in our response to manage the natural variability of drought events.

Abbreviations:

ADC	Area Drought Coordinator
ADM	Area Drought Manager
ADT	Area Drought Team
AEP	Area Environmental Planning
AMT	Area Management Team
AONB	Area of Outstanding Natural Beauty
A&R	Analysis and Reporting team
BW	British Waterways
CAMS	Catchment Abstraction Management Strategy
CBI	Confederation of British Industry
CCWater	Consumer Council for Water
CICS	Common Incidents Classification Scheme
Defra	Department of Environment Food and Rural Affairs
DO	Drought Order
DP	Drought Permit
DSI	Drought Severity Index
EA	Environment Agency
GWCL	Groundwater and Contaminated Land team
HELP	Head Office Emergency Liaison Procedure
HO	Head Office
HOF	Hands Off Flow
HWC	Hartlepool Water Company
ICS	Incident Communication Service
IDB	Internal Drainage Board
IPPC	**I**ntegrated Pollution Prevention and Control
LRF	Local Resilience Forum
Ml/a	Mega litre per annum (equivalent to 1,000 cubic metres per year or 1 million litres)
Ml/d	Mega litre per day, 1,000 cubic metres per day or 1 million litres
MD	Managing Director
MoU	Memorandum of Understanding
NCIC	National Climate Information Centre
NDC	National Drought Coordinator
NDM	National Drought Manager
NFSoD	Non Financial Scheme of Delegation
NFU	National Farmers Union
NIRS	National Incident Reporting System
NPS	National Permitting Service
NWL	Northumbrian Water Limited
Ofwat	Office of Water Services
OTL	Oracle Time and Labour (time recording system)
PAB	Project Advisory Board
PSC	Permitting Support Centre

Q&A	Questions and Answers
R&D	Research and Development
Ramsar	Site of International Wetland Importance protected under the 'Ramsar Convention' (Iran 1971)
RBD	River Basin District
RDC	Regional Drought Coordinator
RDM	Regional Drought Manager
RDT	Regional Drought Team
REP	Regional Environmental Planning
RMT	Regional Management Team
RSA	Restoring Sustainable Abstraction
RSU	Regional Strategy Unit
SAC	Special Area of Conservation
SEP	Strategic Environmental Planning
SMT	Strategic Management Team
SNCI	Site of Nature Conservation Interest/Importance
SoS	Secretary of State
SPA	Special Protection Area
SPoC	Single Point of Contact
SSSI	Sites of Special Scientific Interest
TEDT	Technical Expert Drought Team
WCo	Water Company
WFD	Water Framework Directive
WRMP	Water Resources Management Plan
YWS	Yorkshire Water Services Ltd

Glossary:

Abstraction Licence

An Environment Agency abstraction licence is required for abstraction of more than 20 cubic metres (4,000 gallons) of water per day from a surface source (e.g. river, stream or canal) or from an underground source. Abstraction licences are given a criticality based on the size or type of abstraction. See Area drought plans for definitions.

Aquifer

A geological formation which is sufficiently porous to store water, and permeable enough to allow water to flow through them in usable quantities.

Compensation releases

Water company licences that authorise abstractions from a reservoir may have conditions imposed, whereby a specified amount of water has to be released into the watercourse, downstream of the reservoir in order to compensate the river for the abstraction.

Discharge Consent

A written consent issued by the Environment Agency permitting the discharge specific pollutants into the aquatic environment. Discharge consents have conditions

attached to them that limit the amount and concentration that can be discharged, to ensure that there is no threat to the environment.

Drought Order (DO)

An authorisation granted by the Secretary of State under Section 73 of the Water Resources Act (1991) when there are drought conditions, which impose restrictions upon the use of water, and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis. A DO can be applied for by the Environment Agency for environmental reasons and by a Water Undertaker for Public Supply reasons. A DO generally lasts for 6 months but can be extended for a total of one year.

Drought permit (DP)

An authorisation granted by the Environment Agency under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis (generally for 6 months, but can be extended up to a total of one year) under Schedule 8 of the Water Resources Act (1991).

Drought Severity Index (DSI)

Uses long-tem rainfall records to identify potential change in drought conditions. The cumulative deficit below the mean rainfall for the previous three or six months is used to identify four categories of rainfall deficit (normal, moderate, serious and severe).

Easinet

The Environment Agency's internal web system for staff.

Emergency Drought Order

An authorisation granted by the SoS under Section 75 of the Water Resources Act (1991) on occasion where the deficiency in water supplies becomes bad enough "to impair the economic or social well being of persons in the Area". The additional powers of the Emergency Drought Order are to prohibit or limit any form of water use specified in the order or allow the company to supply by stand pipes or tanks (generally for 3 months but may be extended to 5 months).

Environmental Drought

Environmental drought results from reduced water flows in rivers and streams. In the summer raised temperatures may further exacerbate drought conditions. Such conditions cause physiological stress to living organisms, the degree of stress increasing with drought severity and time.

Hands Off Flow

Condition of an abstraction licence stating that water must not be abstracted if the source has fallen below a set level or flow.

Hydrometric Monitoring

The science of the measurement of the quantity of water.

Integrated Pollution Prevention and Control

Designed to prevent, reduce and eliminate pollution at source through the prudent use of natural resources. It is intended to help industrial operators move towards greater environmental sustainability.

Load

The quantity or mass of any substance transported in an effluent per unit time (the product of concentration of pollutant and effluent flow).

National Nature Reserve (NNR)
National Nature Reserve is a United Kingdom government conservation designation for a nature reserve of national significance. They are areas that represent the best examples of different kinds of countryside or contain unusual communities of plants or animals or important natural features such as rock exposures or gorges. Designated by statutory nature conservation agencies such as English Nature under section 19 of the National Parks and Access to the Countryside Act (1949), or Section 35 of the Wildlife and Countryside Act (1981).

Non Financial Scheme of Delegation (NFSoD)
Within the Environment Agency, the Financial Scheme of Delegation (FSoD) prescribes the limits to the powers and duties relating to financial matters that have been delegated to Environment Agency staff. Other powers not relating to expenditure (including those indicated within this plan) are authorised to certain staff under the non financial scheme of delegation.

Project Advisory Board (PAB)
An internal Environment Agency body formed from senior managers, responsible for approving, monitoring and controlling all projects.

RAMSAR site
Designated under the Ramsar Conventions on Wetlands of Importance (1971), a Ramsar site is a wetland of international importance, especially as a waterfowl habitat. Designation places general and special obligations relating to use and activities on site.

Regional Management Team
An internal Environment Agency body formed from senior managers and reporting to the Regional Director, determining regional policy, monitoring performance and deciding on how resources are allocated in Yorkshire and North East Region.

Section 28G authority
Under the Countryside and Rights of Way Act, we as a public body must “take reasonable steps… to further the conservation and enhancement of the flora, fauna or geological or physiographical features by which the site is a SSSI”, including contacting Natural England if there may be likely damage to a SSSI.

Special Area of Conservation (SAC)
Designated under the Habitats Directive and implemented through the Habitats Regulations (1994) to protect important European Habitat, especially those of threatened species, in sites of community importance.

Special Protection Area (SPA)
Designated under the Birds Directive and implemented through the Wildlife and Countryside Act (1981) to protect important European Habitat for birds

Operational instructions

32_10 How to deal with a water company drought permit application
31_10 How to respond to drought order applications
228_04 Drought order/permit cost recovery
105_10 How to plan for and manage our response to drought
05_01 Head office emergency liaison procedure (HELP)
795_08 How to produce monthly water situation reports
109_05 Roles and responsibilities
226-10 Screening and assessing new water resources permissions for impacts on conservation, heritage and landscape
124_02 The CROW (Countryside and Rights of Way) ACT 2000: guidance to Agency staff on the implications of the SSSI provisions of the Act, and where and how to apply it
359_10 Environmental considerations for drought permits and drought orders that affect designated conservation sites
400_04 Responding to requests for information 400_04
04_01 Incidents and their classification: the Common Incidents Classification Scheme (CICS)
191_09 Fish rescue and deploying aeration equipment
96_04 How HELP reporting and incident management procedures should be followed during a drought

Other related documents

Drought permits and orders guidelines with the Department for Environment, Food & Rural Affairs and Welsh Assembly Government
Drought direction 1991
Water company drought plan guideline 2005
Environment Agency, Yorkshire and North East Region (1999) Ecological Monitoring For Water Resources - Yorkshire and North East Region Review Of Monitoring Requirements, 1st Draft
Halcrow (1996) Review of 1995 Drought in Yorkshire, Report produced for National Rivers Authority, Northumbria and Yorkshire Region
Jeremy Benn Associates (1997) Drought Severity Index, Final Report to the Environment Agency, Yorkshire and North East Region
Environment Agency AMS, Work Instruction, Common Incident Classification Scheme (CICS) Incident Classification Methodology, http://146.213.80.51/icontent/docdir05/eas_04_01.doc
Environment Agency AMS, Guidance on how HELP reporting and Incident Management Procedures should be followed during a drought http://146.213.80.51/icontent/DocDir42/96_04.doc
Environment Agency AMS, Guidance: Drought order/permit cost recovery http://ams-documents.ea.gov/icontent/docdir42/227_04.doc

Appendices

Appendix A Drought monitoring plans

A1 Hydrological drought monitoring

Drought monitoring sites for Yorkshire and North East Region used in regular drought reports

Rainfall:

18 NCIC catchments plus values for each of the two areas

Catchment	**Reference**
Tweed	TPD_NE_H01
Northumbria North Sea Tribs	TPD_NE_H02
Tyne	TPD_NE_H03
Wear	TPD_NE_H04
Seaham, Peterlee Coastal Area	TPD_NE_H05
Tees	TPD_NE_H06
Swale (NE)	TPD_NE_H07
Ure	TPD_NE_H08
Nidd	TPD_NE_H09
Ouse	TPD_NE_H10
Wharfe	TPD_NE_H11
Dales North Sea Tribs	TPD_NE_H12
Rye	TPD_NE_H13
Derwent (NE)	TPD_NE_H14
Aire	TPD_NE_H15
Calder	TPD_NE_H16
Don	TPD_NE_H17
Hull and Humber	TPD_NE_H18

Rain gauges:

Catchment	Raingauge	Site number
Rye/Derwent	Church houses	068762
Ure	Lower Dunsforth	056505
Upper Ure	Tow Hill	047281
Aire	Skipton	074384
Hull	Tickton	041238
Till	Wooler	920348
Wansbeck	Wallington Hall	005782
N Tyne	Kielder	008850
S Tyne	Alston	013553
Wear	Tunstall	022163

Drought Severity Index:

calculated for all MORECS squares in the region

Soil Moisture Deficit:

calculated for all MORECS squares in the region

River flows:

Catchment	Site name	Site number
Derwent	Buttercrambe	F2807
Swale	Crakehill	F2302
Don	Doncaster	F0908
South Tyne	Haydon Bridge	23004
Aire	Kildwick	F1503
Ure	Kilgram Bridge	F2206
Tees	Middleton	F3505
Calder	Mytholmroyd	F1204
Coquet	Rothbury	22009
Ouse	Skelton	F2405
West Beck	Snakeholme Lock	F3105
Wear	Stanhope	24003
Wharfe	Tadcaster	F2002
Rother	Whittington	F0203

Groundwater:

Aquifer	Site name	Site number
Magnesian limestone	Brick House Farm	SE44BHF0ML
Millstone Grit	Clapham Green Farm	SE25CGF0MG
Chalk	Dalton Estate Well	SE94DEW0CC
Millstone Grit	Halifax Thrum Hall	SE02HTH0MG
Coal measures	Leeds Trident House	SE23LTH0CM
Fell sandstone	Royalty Observ.	21-0-131
Magnesian limestone	Swan House	25-3-60
Fell sandstone	Townlaw	22-2-32
Magnesian limestone	West Hall Farm	24-5-140

Reservoir stocks:

Total YWS supply reservoir stocks	
NWL reservoirs	Catcleugh
	Colt Crag
	Hallington
	Whittle Dene
	Derwent
	Tunstall
	Smiddy Shaw/Hisehope etc
	Burnhope
	Lune/Balder
	Cow Green

Spot flow gaugings during times of drought - additional drought monitoring sites

Yorkshire Area	
River	**Site Name**
Calder	
Walsden Water	Walsden
Calder	Todmorden
Hebden Water	Gibson Mill
Ryburn	Booth Wood
Plus Flow Gauging Station Check at Todmorden	
Don	
Don	Thurlston Bridge
Don	Oughtibridge
Don	Conisborough
Plus Flow Gauging Station Check at Hadfields	
Plus Flow Gauging Station Check at Rotherham Tesco	
Plus Flow Gauging Station Check at Ashlow Works	

Plus Flow Gauging Station Check at Barnsley	
Plus Flow Gauging Station Check at Rowel Bridge	
Plus Flow Gauging Station Check at Hollins Bridge	
Aire	
Aire	Gargrave
Aire	Esholt
Aire	Bingley
Aire	Fairburn
Plus Flow Gauging Station Check at Bingley	
Plus Flow Gauging Station Check at Keighley	
Plus Flow Gauging Station Check at Beal	
Plus Flow Gauging Station Check at Lemonroyd	
Hull	
Flow Gauging Station Check at North Cave	
Flow Gauging Station Check at Holme House Farm	
Flow Gauging Station Check at Hempholme	
Derwent	
Derwent	Forge Valley
Derwent	Yeadingham
Derwent	Low Hutton
Derwent	Howsham
Blackfoss Beck	Hagg Bridge
Derwent	upstream Dyon
Derwent	River Hertford
Rye	Howe Bridge
Bielby Beck	East Cottingwith
Nidd	
Nidd	Newhouses
Nidd	Wath Bridge
Nidd	Pateley Bridge
Nidd	Foster Beck
Nidd	Hampsthwaite
Nidd	Pot Bridge
Nidd	Walshford
Ouse	
Ouse	Beningbrough downstream Nidd
Swale	
Swale	Cod Beck upstream Oakdale Beck
Swale	Oakdale Beck upstream Cod Beck
Swale	Skipton on Swale
Swale	Thornton Bridge
Swale	Myton Bridge

Swale	Dalton Bridge, unnamed tributary
Ure	
Ure	Wensley
Ure	Jervaulx
Ure	Leighton Beck at Leighton
Ure	Leighton Beck at Healey
Ure	Masham
Ure	West Tanfield
Ure	Boroughbridge
Ure	Aldwark Toll Bridge
Wharfe	
Wharfe	Grassington
Wharfe	Burnsall
Wharfe	Hartlington Bridge
Wharfe	Barden Beck at Broad Park Bridge
Wharfe	Bolton Bridge
Wharfe	March Ghyll
Wharfe	Wharfe at Blubberhouses
Wharfe	Addingham
Wharfe	Ilkley
Wharfe	Bow Beck at Ilkley
Wharfe	Otley
Wharfe	Wharfe at Leathley Bridge
Wharfe	Castley
Wharfe	Harewood Bridge
Wharfe	Boston Spa
Wharfe	Tadcaster
Wharfe	Cock Beck, confluence with Wharfe
NE area	
Catchment	**Site Name**
Till	
Till	confluence of Glen and Till
Till	confluence of Wooler Water and Till
Plus Flow Gauging Station Check at Wooler	
Plus Flow Gauging Station Check at Weetwood Bridge	
Northumberland	
	South Low at Haggerston Barns
	Ross Low
	North Low
	Waren Burn
	Long Nanny
Plus Flow Gauging Station Check at Morwick	

Tyne	
	Tipalt Burn (upstream and downstream)
	Team at Tanfield WTW(upstream)
	Team at Tanfield WTW(downstream on footbridge)
Plus Flow Gauging Station Check at:	
Plus Flow Gauging Station Check at Eddy's Bridge	
Plus Flow Gauging Station Check at Bywell	
Plus Flow Gauging Station Check at Reaverhill	
Plus Flow Gauging Station Check at Haydon Bridge	
Plus Flow Gauging Station Check at Ugly Dub	
Wear	
	Deerness at Langley Park
	Smallhope Burn at Lanchester
	Old Durham Beck
	Croxdale Beck at Kelloe STW(upstream and downstream)
	Croxdale Beck at Croxdale Hall
	Moors Burn at Sedgeletch STW(upstream and downstream)
	Waskerley Beck downstream of Tunstall reservoir
Plus Flow Gauging Station Check at Burnhope	
Plus Flow Gauging Station Check at Chester le Street	
Gaunless	
	Butterknowle
	Lowlands minewater
	Cockfield STW
	Ramshaw STW
Tees	
Flow Gauging Station Check at Cow Green	
Flow Gauging Station Check at Broken Scar	

A2 Ecological drought monitoring

Sites surveyed by EA for the National Drought Monitoring Network

Site ID	Site name	Catchment	NGR*	Reason for monitoring	Frequency of monitoring (Spring & Autumn)
Yorkshire Area					
341	Grassington	Wharfe		Core drought site	Annually
1333	Sherburn	Derwent (Dales)		Core drought site	Annually
77216	U/s Ryder abstraction	Hull / West Beck		Core drought site	Annually
147	Briggswath	Esk		Core drought site	Annually
1478	Nr Warlby Nook	Swale		Core drought site	Annually
North East Area					
2169	Twizel Mill	Till		Core drought site	Annually
1660	Warkworth Ford	Coquet		Core drought site	Annually
1979	U/S Demons	Skerne		Core drought site	Annually
1784	Alston	South Tyne		Core drought site	Annually
1808	Redesmouth	Rede		Core drought site	Annually

* NGRs have been removed from public document

A3 Core 'drought' invertebrate monitoring sites surveyed annually by Yorkshire Water Services

Site ID	Catchment	Water body description	Site name	Main drivers
Compensation reservoirs				
142369	Don	Loxley	D/s weir	Drought
142368	Don	R Rivelin, R Don	Roscoe Bridge	WFD HMWB
1580	Don	R Rivelin, R Don	Rivelin Mill	WFD HMWB
199	Don	R Little Don	D/s Langsett WTW	WFD HMWB
75245	Don	Wyming Brook	Between Redmires and Rivelin dams	WFD HMWB
509	Don	Rivelin	U/s Rivelin Dam	WFD HMWB
1585	Don	Ewden Beck	D/s dam	Drought
90061	Don	River Rivelin	U/s WTW d/s dam	Drought
New	Don	Scout Dike	D/s Scout Dike Res – tbc	Drought
200	Don	Little Don	D/s of Underbank Reservoir	Drought
118	Don	River Don	Dunford Bridge	Drought
418	Don	Ewden Beck	Ewden Bridge	Drought – C
473	Don	Agden Dike	U/s Agden Reservoir	Drought – C
1427	Don	River Don	Leppings Lane	Drought – d/s-Cumulative
1245	Don	R Loxley, R Don	Rowel Lane	WFD HMWB
145600	Aire	Harden Beck	D/s of Doe Park Reservoir	Drought
100081	Aire	Embsay Beck	U/s of tannery	Drought
1116	Aire	Harden Beck	U/s Cowhouse Beck	Drought
487	Aire	Morkin Beck	Morkin Bridge	Drought

Site ID	Catchment	Water body description	Site name	Main drivers
1489	Aire	Bridgehouse Beck	D/s Leeming Reservoir	Drought
464	Aire	Leeshaw Beck	Further d/s Leeshaw Reservoir	Drought
1594	Aire	River Worth	Further d/s Ponden Reservoir	Drought
534	Aire	Sladen Beck	D/s Lower Laithes	Drought
1052	Aire	Malham Beck	U/s Malham STW	Drought – C
145577	Aire	River Worth	U/s Ponden Reservoir	Drought – C
1403	Aire	River Worth	Knowles Park	Drought – d/s-cumulative
1182	Calder	Hoyle House Brook	Nr. Daisy Green	Drought
74825	Calder	Meltham Dyke	D/s footbridge Rough Nook Farm	Drought
74826	Calder	Booth Dean Clough	D/s Booth Dean Clough Reservoir	Drought
1584	Calder	Holme	D/s Brownhill Reservoir	Drought
1583	Calder	Marsden Clough	D/s Digley Reservoir	Drought
95982	Calder	River Ribble	U/s Washpit Mills	Drought
1487	Calder	Wessenden Brook	U/s Mill nr Aqueduct	Drought
New	Calder	Bradley Brook	Intake Lane	Drought
1152	Calder	Alcomden Water	U/s Graining Water	Drought
1151	Calder	Graining Water	Nr. road bridge	Drought
145539	Calder	Graining Water	U/s Grieve Clough	Drought
1481	Calder	Luddenden Brook	Low Bridge	Drought
1573	Calder	Hebble Brook	D/s Ogden Reservoir	Drought
75242	Calder	Butts Clough	D/s Ringstone Reservoir	Drought
40	Calder	Black Brook	Penny Hill	Drought

Site ID	Catchment	Water body description	Site name	Main drivers
254	Calder	Ryburn	U/s Booth Dean Clough	Drought
1169	Calder	Withens Clough	U/s footbridge	Drought
New	Calder	Turvin Clough	D/s pumping station	Drought
58	Calder	Calder	U/s tannery	Drought – C
1153	Calder	Crimsworth Dean Beck	U/s Hebden Water	Drought – C
1482	Calder	Ryburn	Ripponden	Drought – d/s-Cumulative
1413	Calder	R Holme	Bottoms Mill	WFD HMWB
1608	Calder	R Holme	Hinchcliffe Mill	WFD HMWB
1576	Calder	Hebden Water	Hebden Stream Gauge	WFD HMWB
1607	Calder	R Ribble	Underbank	WFD HMWB
145540	Calder	Graining Water, R Calder	D/s Grieve Clough	WFD HMWB
145541	Calder	Grieve clough	U/s Graining Water	WFD HMWB
439	Calder	Hebden Water	Hebden Bridge	WFD HMWB
681	Ouse	Cod Beck	U/s Oakdale Beck	Drought
873	Ouse	Oal Beck	D/s Beaverdyke Reservoir	Drought
465	Ouse	Leighton Beck	Leighton	Drought
77382	Ouse	Holborn Beck	D/s Lumley Moor Res	Drought
151950	Ouse	River Washburn	D/s Lindley Wood Reservoir	Drought
New	Ouse	Skyreholme Beck	Near Trollers Gill Cave	Drought - C
River Abstractions				
77356	Ure	Ure	Jervaulx	Drought, TLL
77357	Ure	Ure	D/s Kilgram Bridge	Drought, TLL

Site ID	Catchment	Water body description	Site name	Main drivers
968	Wharfe	Wharfe	Bolton Bridge	Drought, TLL
344	Wharfe	Wharfe	Addingham	Drought, TLL
337	Wharfe	Wharfe	Castley	Drought, TLL
969	Wharfe	Wharfe	Harewood	Drought, TLL
1456	Hull	Hull	At Hempholme Lock	Drought
909	Hull	Hull	Wilfholme	Drought

Sites Surveyed by EA as part of TLL Monitoring, but analysed by APEM

1495	Ouse	Ouse	D/s Nidd Mouth	Drought, TLL
77324	Ouse	Ouse	D/S Moor Monkton	Drought, TLL

A4 Core 'drought' fish monitoring sites surveyed annually by Yorkshire Water Services

Those marked * are part of Environment Agency annual monitoring programme for 2011 and will not be monitored by YWS. Those marked + are still part of the Environment Agency monitoring but will not be sampled by the Environment Agency in 2011.

Catchment	Monitored sub-catchment	Site Name	WR Primary Driver
Aire	Embsay Beck	Pastures Lane	Drought
Aire	Harden beck	Beckfoot Lane (Ford)	Drought
Aire	Leeshaw Beck	D/S Leeshaw Res	Drought
Aire	Leeming Beck	D/S Leeming Reservoir	Drought
Aire	Loadpit beck	D/S Eldwick Res.	Drought
Aire	Doe Park	Denholme Beck	Drought
Aire	Hewenden Beck	Malt Shovel	Drought
Aire	Lower Laithe	Sladen Beck	Drought
Aire	River Worth	D/S Ponden Mill	Drought+
Aire	Malham Beck	Malham	Drought*
Calder	Alcomden water	Alcomden Water	Drought
Calder	Black Brook	(NR10.0040) Penny Hill	Drought+
Calder	Booth Dean Clough	D/S Booth Dean Clough Reservoir	Drought
Calder	Bradley Brook	Quick Assessment of water course	Drought
Calder	Brow Grains Dike	Meltham	Drought
Calder	Graining Water	Bridge d/s Reservoir	Drought+
Calder	Hebble Brook	Golf club	Drought
Calder	Hebden water	Gibsons Mill (drought site 3) (annual)	Drought*
Calder	Hoyle House Clough	Quick Assessment of water course	Drought
Calder	Luddenden Brook	Luddenden Bk	Drought
Calder	Marsden Clough	(NR10.2556) D/S Digley Reservoir	Drought
Calder	Ramsden Clough	DS Brownhill Res	Drought
Calder	River Ribble	U/S Washpits	Drought
Calder	River Ryburn	Barr Lane	Drought*
Calder	Turvin Clough	Turvin Clough. Quick Assessment of water course	Drought
Calder	Withens Clough	Elphin Brook. Quick Assessment of water course	Drought
Calder	Red Beck	Red Beck	Drought
Don	River Loxley	D/S old bridge	Drought
Don	River Rivelin	Hospital	Drought
Don	River Don	Dunford Bridge Car Park	Drought
Don	River Sheaf	Millhouses Park	Drought
Nidd	Oak Beck	Throstle Nest Farm	Drought
Ouse	U/S Moor Monkton intake	D/s Linton Lock	Drought*
Ouse	D/S Moor Monkton intake	Benningborough	Drought*
Ure	Leighton/ Pot Beck	D/S Leighton Reservoir	Drought
Ure	River Ure	Middleham	Drought*
Ure	River Ure	Kilgrim Bridge	Drought
Wharfe	Skyreholme Beck	Skyreholme	Drought*
Wharfe	Washburn	U/S Leathley Bridge	Drought
Wharfe	River Dibb	Dibbles Bridge	Drought
Wharfe	River Wharfe	Upstream Lobwood	Drought
Wharfe	River Wharfe	Addingham Low Mill	Drought
Wharfe	Wharfe U/S Arthington	Castley Lane	Drought*
Wharfe	Wharfe D/S Arthington	Nunnery	Drought
Hull	River Hull	Hull U/S Hempholme Lock	Drought

Appendix B Drought permit and drought order proposals (2005)

There are no sites listed for Hartlepool and Northumbrian Water as neither company proposes the use of drought permits or orders.

Drought orders and permits sites identified by Yorkshire Water in the 2005 drought plan can be seen in the table below.

Protecting the Environment
Drought Orders

Resource Group	Compensation Water Source	Discharge Point (Receiving Water)
South West	**Calderdale Group**	
	Hebden Water	Hebden Water, R Calder
	Ogden/Mixenden	Hebble Brook, R Calder
	Gorpley	Gorpley Clough
	Warley Moor	
	Luddenden Dean	Luddenden, Dean Beck, R Calder
	Withens Clough	
	Elphin Brook	Elphin Brook, R Calder
	Brownhill Digley Group	
	Digley Brook/Marsden Clough	Digley Brook, R Holme
	Boothwood/Ryburn Group	
	Slitheroe Bridge	R Ryburn, R Calder
	Turvin Clough	Turvin Clough, R Calder
	Huddersfield Group	
	Scammonden	
	Black Brook	Black Brook, Merrydale Clough, R Colne (Marsden)
	Huddersfield Narrow Canal	Huddersfield Narrow Canal
	Merrydale Clough	
	River Colne at Marsden	
	Butterley	
	Wessenden Brook, River Colne	Wessenden Brook, R Colne
	Blackmoorfoot	
	Brow Grains Dyke	Brow Grains Dyke, R Holme. Hoyle House Clough
	Hoyle House Clough	
	Deerhill	
	Minor watercourses	Badgergate Clough, Badger Hey, Lingards Wood, Chain, Cellars Clough, Gatehead

		Clough, Ellen Clough, Binn House, Bradley Brook, Crowhill Clough
	Brownhill Digley Group	
	Brownhill	R Holme
	Holmestyes	R Ribble

North West	**Worth Valley Group**	
	Springhead Weir	R Worth
	Leeming	Leeming Water, R Worth
	Leeshaw	Moorhouse Beck, R Worth
	Skipton Compensation Group	
	Silsden Beck	
	Airedale Group	Embsay Beck, R Aire
		Silsden Beck, R Aire
	Elslack Beck	Elslack Beck, R Aire
North	**Harrogate Group**	
	Leighton	Pott Beck, R Burn
	John O'Gaunts	Oak Beck, R Nidd
	Osmotherly Group	
	Cod Beck	Cod Beck, R Swale
	Washburn Group	
	Lindley Wood	R Washburn, R Wharfe
South	**Don Valley Group**	
	Scout Dyke	Scout Dyke, R Don
	Little Don Group	
	Underbank	R Little Don, R Don
	Ewden Group	
	Morehall	Ewden Beck, R Don
	Loxley Group	
	Damflask	R Loxley, R Don
	Rivelin Redmires Group	
	Rivelin	R Rivelin, R Don
	Wyming Brook (Redmires)	Wyming Brook

Appendix C Communications plan and actions

communications plan

Environment Agency

Yorkshire & North East Drought Communications Plan 2011

Origination

Author	
Version	V3
Date	June 2011

Approval

Approved	Name	Date
Communications Manager		
Programme lead		
Regional drought team		

Purpose of this document

This plan will provide a framework to be used prior to and during a drought to manage our reputation, ensure our stakeholders are targeted with the right information and we adopt partnership working to promote water efficiency where appropriate.

The document outlines the following areas:

- role of communications
- business objective
- communications objectives
- communications tools
- evaluation
- stakeholder analysis
- key messages & supporting facts and figures
- communications plan
- identification of triggers
- action plan

In line with the Regional Drought Plan, the communications plan will be updated annually. This is to reflect any changes that may impact customers or stakeholders and also take into consideration evaluation from previous communications.

Role of communications

Our communications activity will cover three key areas:

1. Stakeholders – e.g. MPs, Defra Network and others who have networks we can use to target specific sectors or audiences.
2. Media – press and broadcast media, in particular trade journalists and feature editors.
3. Internal staff – centrally coordinated communications to all staff in the region.

Communications drought team and responsibilities

Communications Officer

- forms link between Communications and Regional Drought Team;
- forms link with EA North West where appropriate;
- establishes drought response team within Communications;
- updates drought comms plan as situation develops;
- inputs into weekly drought report.

Media

- reviews number of media trained staff and organise training if required;
- liaises with HO media team regarding training of additional staff if situation escalates;
- identifies opportunities for proactive media;
- handles all drought enquiries generated by Yorkshire & North East media;
- works with area and regional drought teams to promote our messages to journalists;
- supports spokespeople in giving media interviews;
- collates media coverage and feeds into lessons learnt summary.

Internal comms

- communicates messages to internal audience;
- advises on communicating through web and Easinet;
- gains feedback from staff and feeds into lessons learnt summary.

Area external relations team

- advises on communicating with external interested parties;
- advises on how to communicate with MPs and prepare political briefings.

Business objective

There is enough water to meet the legitimate needs of people and the environment.

Communications objectives

- our key stakeholders and customers feel informed of the drought situation;
- our stakeholders, customers and staff are aware of how to report any environmental issues;

- internal staff are aware of the current drought situation and the actions we are taking to minimise impacts;
- internal staff are aware of the actions they need to take at work and at home;
- our approach reflects the approach being taken by the water company. We work closely with the water company to make sure our communications are 'joined up' and messages are disseminated appropriately.

Communication tools

External

Different audiences and different situations require different communications tools. The following channels will be utilised in a developing situation:

- media: press releases, proactive interviews, features, photo opportunities, social media;
- face-to-face meetings: senior managers' engagement schedules, briefing sessions, surgeries;
- printed material: leaflets, posters etc;
- the Internet;
- communication tools owned by partner organisations (for example Yorkshire Water's water awareness campaign).

Internal

The Internal Communications officer will be responsible for communicating the current situation, our actions and what actions we require our staff to do at work and home. The following channels will be utilised:

Staff group	What's Happening Weekly	David's Blog	Cascade Brief	Managers' need to know	Noticeboards	On the Ground (Ops Delivery)	Easinet (Incidents Live)	Email briefing
Office-based	X	X	X		X		X	X
Area Environment officers	X	X	X		X		X	X
Field workers			X			X		
RMT / AMT /Team Leaders	X	X	X	X	X		X	X
Home based	X	X					X	X

If Head Office are updating the Easinet pages with regionally specific drought situations, the Internal Comms Officer will feed into that process. Alternatively, we will update the Incidents Live section of the Easinet with regional information.

Internal key messages should be provided by HO Drought Comms team to ensure consistency.

Face-to-face briefings will also be considered, but as this method is more resource intensive, it will only be considered where severity makes it prudent to do so.

Level of communications

The amount and intensity of communications activity will change depending on the drought conditions and national/regional status. The main plan contains triggers for actions at different stages of drought. The escalation of communications will be highlighted in the triggers table in Section 3 of this drought plan.

Evaluation

Post drought, the communications team will review the media contacts and coverage associated with the drought to see whether we can refine our drought plan to improve future communications. We will incorporate these into the lessons learnt summary. We will also learn from what the stories of interest were so we can be more targeted in our proactive media work for subsequent events.

Feedback will be sought following any communication with external partners to ensure they are receiving the correct level of information in the correct format. Any comments received will be fed back into the lessons learnt summary.

Stakeholder list

The following list provides a breakdown of key stakeholders within the individual catchment areas.

In addition to proactive engagement, we will utilise the engagement plans/schedules for senior managers to help ensure every opportunity is taken to communicate our messages.

There are several regional MPs who have a national role and are currently receiving briefings from Head Office on the national picture. Regional briefings should be prepared for this stakeholder group so they have a clear picture even if the region is not in a drought situation.

The subsequent table highlights the appropriate communication channels for each stakeholder group.

Catchment area	Local Authorities	MPs	Defra Family	Key Local Stakeholder
Till	Northumberland County Council	**MEP** – Labour **MEP** – Con **MEP** – Lib Dem **MP** Lib Dem - Berwick	Natural England Forestry Commission Northumberland National Park	Angling groups / fisheries consultatives Northumberland Wildlife Trust Rivers trusts Groundwork North East Northumbrian Water LRF Tweed Commission Tweed Forum Tweed Foundation SEPA CPRE NE Till Farmers NFU Trade Associations

				Horticultural Trade Association
Northumberland Rivers	Northumberland County Council	**MP** Labour - Blyth Valley Labour - Wansbeck Lib Dem - Berwick Con – Hexham **MEP** – Labour **MEP** – Con **MEP** – Lib Dem	Natural England Forestry Commission Northumberland National Park	Angling groups / fisheries consultatives Northumberland Wildlife Trust Rivers trusts Groundwork North East LRF Northumbrian Water CPRE NE NFU Trade Associations Horticultural Trade Association
Tyne	Newcastle City Council North Tyneside MBC South Tyneside MBC Gateshead Council	**MP** Labour – Blyth Valley Labour – Newcastle Central Con – Hexham Labour - South Shields Labour – Sunderland Central Labour – Jarrow Labour – North Tyneside Labour – Tynemouth Labour – Blaydon Labour – Newcastle Central Labour – Newcastle East Labour – Newcastle North Labour – Gateshead **MEP** – Labour **MEP** – Con **MEP** – Lib Dem	Natural England Forestry Commission Northumberland National Park	Angling groups / fisheries consultatives Wildlife Trust Tyne Rivers Trust NFU CLA Groundwork North East LRF Northumbrian Water CPRE NE NFU Trade Associations Horticultural Trade Association
Wear	Durham County Council Sunderland City	**MP** Labour – Washington & Sunderland West Labour – Houghton & Sunderland	Natural England Forestry Commission	Angling groups / fisheries consultatives Durham Wildlife Trust

	Council	Labour – North West Durham Labour – Bishop Auckland Labour – City of Durham Labour – Easington Labour – North Durham **MEP** – Labour **MEP** – Con **MEP** – Lib Dem	Northumberland National Park	Wear Rivers Trust Reservoir user groups NFU CLA Groundwork North East British Waterways LRF Northumbrian Water CPRE NE NFU Trade Associations Horticultural Trade Association
Tees	Darlington Borough Council Hartlepool Borough Council Middlesbrough Council Stockton Borough Council	**MP** Liberal - Redcar Con - Stockton South Labour - Stock North Labour - Middlesbrough Labour - M'bro South & East Cleveland Labour - Hartlepool Labour – Darlington Labour - Sedgefield **MEP** – Labour **MEP** – Con **MEP** – Lib Dem	Natural England Forestry Commission Northumberland National Park	Angling groups / fisheries consultatives Tees Valley Region Hartlepool Water Tees Valley Wildlife Trust NFU CLA Groundwork North East British Waterways LRF Northumbrian Water CPRE NE NFU Trade Associations Horticultural Trade Association
Swale, Ure, Nidd & Upper Ouse	Harrogate Borough Council York City Council Hambleton District	**MP** Con - Richmond Con - Skipton & Ripon Con - Harrogate & Knaresborough	Natural England Forestry Commission	Yorkshire Dales Rivers Trust Yorkshire Wildlife Trust CPRE Yorks NFU

	Council Richmondshire DC	Labour - York Central Con - York Outer **MEP** UKIP **MEP** Con MEP Lib Dem MEP Lib Dem MEP BNP	North Yorkshire Moors National Park	CLA Groundwork Yorkshire British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association
Esk & coast	Scarborough Borough Council Redcar & Cleveland North Yorkshire County Council	**MP** Con - Scarborough & Whitby MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP	Natural England Forestry Commission North Yorkshire Moors National Park	Angling groups / fisheries consultatives Yorkshire Wildlife Trust CPRE Yorks NFU CLA Groundwork Yorkshire British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association
Derwent (Humber)	Scarborough Borough Council North Yorkshire County Council Selby District Council Ryedale District Council	**MP** Con - Thirsk & Malton MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP	Natural England Forestry Commission North Yorkshire Moors National Park	Angling groups/fisheries consultatives Yorkshire Wildlife Trust CPRE Yorks NFU CLA Groundwork Yorkshire British Waterways LRF Yorkshire Water

				Internal Drainage Boards Trade Associations Horticultural Trade Association
Wharfe & Lower Ouse	Craven District Council	**MP** Selby & Ainsty MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP	Natural England Forestry Commission Yorkshire Dales National Park	Angling groups / fisheries consultatives Yorkshire Wildlife Trust CPRE Yorks NFU CLA British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association
Aire & Calder	Bradford MDC Calderdale MBC Kirklees Council Leeds City Council Wakefield Council	**MP** Labour - Batley & Spen Lib Dem - Bradford East Labour - Bradford South Labour - Bradford West Con - Calder Valley Labour - Halifax Con - Colne Valley Con - Dewsbury Con - Keighley Con - Shipley Labour - Hemsworth Con - Pudsey Labour - Leeds Central Labour - Leeds East Labour - Leeds North East Lib - Leeds North West	Natural England Forestry Commission Yorkshire Dales National Park Peak District National Park	Angling groups / fisheries consultatives Calder & Colne Rivers Trust Yorkshire Dales Rivers Trust Yorkshire Wildlife Trust CPRE Yorks NFU CLA Groundwork Yorkshire British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association

		Labour - Leeds West Labour - Morley & Outwood Labour - Normanton, Pontefract & Castleford MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP		
Hull & East Riding	East Riding of Yorkshire County Council Hull City Council Kingston Upon Hull City Council NE Lincs North Lincs	**MP** Con - East Yorkshire Labour - Kingston Upon Hull East Labour - Kingston Upon Hull North Labour - Kingston Upon Hull West & Hessle Con - Haltemprice & Howden MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP	Natural England Forestry Commission	Angling groups / fisheries consultatives East Yorkshire Chalk Rivers Trust Yorkshire Wildlife Trust Lincolnshire Wildlife Trust CPRE Yorks NFU CLA Groundwork Yorkshire British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association
Don & Rother	Barnsley MBC Doncaster MBC Rotherham MBC Sheffield Chesterfield BC	**MP** Lib - Sheffield Hallam Labour - Sheffield Central Labour - Sheffield South East Labour - Sheffield Brightside & Hillsbrough Labour - Heeley Labour - Ashfield Labour - Bolsover	Natural England Forestry Commission Peak District National Park	Angling groups / fisheries consultatives Don Rivers Catchment Trust Sheffield Wildlife Trust CPRE Yorks NFU CLA Groundwork Yorkshire

		Labour - Chesterfield Labour - NE Derbyshire Labour - Rother Valley Labour - Rotherham Labour - Penistone & Stocksbridge Labour - Barnsley East Labour - Don Valley Labour - Doncaster North Labour - Doncaster Central MEP UKIP MEP Con MEP Lib Dem MEP Lib Dem MEP BNP		British Waterways LRF Yorkshire Water Internal Drainage Boards NFU Trade Associations Horticultural Trade Association

Key messages

The following table provides a hierarchy of messages that will feed into briefing statements, press releases and media interviews.

The over-arching and supporting messages should be included in all media correspondence and messages from the third tier. “Facts & figures”, should be chosen appropriate to the interview.

All media interviews will be coordinated by the media manager or press officer who will provide guidance on the type of messages to include.

When in potential drought and drought status the communications team will review the supporting messages and facts and figures sections in the table below to ensure they reflect the situation. Additional key regional messages and lines to take will be prepared to supplement these and can be found in Comms Plan Appendix 1.

Overarching message – *must be included*		
The Environment Agency is working with Yorkshire Water and Northumbria Water to balance the water needs of people, businesses and the environment.		
Supporting messages – *must be included*		
We all need to use less water to reduce our impact on the environment and to safeguard supplies for the future.	It is the Environment Agency’s responsibility to decide how much water can be taken from lakes, rivers, groundwater and reservoirs, without compromising the environment.	Our water supply will come under increasing pressure in the future, due to population growth and climate change.
Facts and figures – optional		
For the last X months we have experienced lower than average rainfall in Yorkshire and the North East. Our water supplies are currently around XXper cent lower than we would expect at this time of the year. Most of our water supplies in the Yorkshire & North East come from lakes, rivers and reservoirs that are more sensitive to dry spells and climate change	The Environment Agency is responsible for monitoring, reporting and acting to reduce the impact of a drought. We aim to balance the competing interests of the environment and the need for public water supply. During a drought, the Environment Agency receives applications from Yorkshire Water / Northumbria Water for drought permits, which allow them to take more	Population is forecast to grow by five million people in England and Wales by 2020. This could increase household demand for water by six per cent – over 500 million litres per day. Climate change will mean that there is less water available for us to use, with river flows during the summer reduced by as much as 80% by 2050. Climate change could mean summers getting

than underground sources. Drought has serious consequences for the environment, especially wildlife, and we are stepping up our checks on rivers. Water saving hints and tips can be found at www.environment-agency.gov.uk/savewater.	water from specific sources.	hotter and drier and winters warmer and wetter, with more big downpours. This could lead to flooding and droughts, possibly at the same time. We understand that water restrictions could have a negative impact on business and industry. We encourage business to look at the water consumption now and how this can be better managed in the short and long-term.

Head Office provide a standard selection of lines to take and frequently asked questions to supplement the above messages. As these are held on the O Drive with restricted access, the Communications Officer for the Regional drought team will be responsible for ensuring the most up-to-date versions are included in Comms plan Appendix 2.

Drought Communications Plan

Who	Content/type of Info	Lead Officer/s	Tactics						
			Drought Report	Water Situation Report		Media Relations	S'holder Man'ment / Briefings	Internal Comms	Meetings	Level of Engagement
				Monthly Hydrology Rep	Weekly Sit Rep					
Internal Audiences										
Drought Board	• Current Situation • Potential drought permits/orders • Planned communications internal and external • Environmental Concerns • Incidents • Forecast	Hydrology, Communications coordinator, Regional drought coordinator	X	X	X					
Yorkshire & North East Drought Management Team	• Current Situation • Potential drought permits/orders • Planned communications internal and external • Environmental Concerns • Incidents • Forecast	Hydrology, Communications coordinator, Regional drought coordinator	X	X	X				X	
RMT	• Current Situation • Potential drought permits/orders • Planned communications internal and external	Hydrology, Communications coordinator, Regional drought coordinator	X	X	X					

Who	Content/type of Info	Lead Officer/s	Tactics						
			Drought Report	Water Situation Report		Media Relations	S'holder Man'ment / Briefings	Internal Comms	Meetings	Level of Engagement
				Monthly Hydrology Rep	Weekly Sit Rep					
	• Environmental Concerns • Incidents • Forecast									
Non-drought team staff	• Current situation • Our activities • Actions they should take at work or home.	Internal Communications lead						X		
Area Planning Teams	• Current situation • Our activities • Potential drought permits/orders • Local stakeholder communications and actions • Forecast	Area drought manager, Area drought coordinator, Internal Communications lead	X					X	X	
Area Hydrometry Teams, Hydrology, Groundwater, Fisheries, Recreation and Biodiversity, Sampling and Collection, Environment officers	• Current situation • Our activities • Potential drought permits/orders • Local stakeholder communications and actions • Forecast • Key tasks e.g. monitoring, review permits, respond to incidents	Area drought manager, Area drought coordinator, Internal Communications lead	X	X				X	X	

Who	Content/type of Info	Lead Officer/s	Tactics						
			Drought Report	Water Situation Report		Media Relations	S'holder Man'ment / Briefings	Internal Comms	Meetings	Level of Engagement
				Monthly Hydrology Rep	Weekly Sit Rep					
National Permitting Service, Legal	• Current situation • Potential drought permits/orders	Regional drought coordinator, Internal Communications lead	X					X	X	
Customer services teams	• Current situation • Our activities • Potential drought permits/orders • Local stakeholder communications and actions • Forecast	Regional drought coordinator, Internal Communications lead	X	X				X	X	
External Audiences **For an indication of when the following audiences would be contacted in potential drought or drought status, refer to the trigger table (Section 3)**										
Yorkshire Water Northumbrian Water Hartlepool Water	• Current situation • Combined messages • Our activities • Joint Media opportunities • Changes to ROA	Regional drought manager, Regional drought coordinator, Stakeholder lead, Media Lead				X	X		X	
Defra family	• Current Situation • Our activities • Environmental Concerns • Forecast • Joint Media opportunities • Actions we would like partners to take	Regional drought manager, Regional drought coordinator, Stakeholder lead, Media Lead	X				X		X	**Technical feed into some drought actions**

Who	Content/type of Info	Lead Officer/s	Tactics						
			Drought Report	Water Situation Report		Media Relations	S'holder Man'ment / Briefings	Internal Comms	Meetings	Level of Engagement
				Monthly Hydrology Rep	Weekly Sit Rep					
	• Advice & guidance we will be issuing to key groups (for example farmers etc)									
British Waterways	• Current Situation • Combined messages • Our activities • Actions they should/need to take • Forecast	Regional Drought Manager, Regional Drought Coordinator, Stakeholder lead, Media Lead	**X**				**X**		**X**	
Local Authorities	• Current situation • Actions they should/need to take	Stakeholder Lead via Relationship Managers					**X**			
Committees	• Current situation • Our activities • Actions they should/need to take	Regional External Relations team					**X**			
Liaison Panel Members	• Current situation • Our activities	WFD Programme Manager					**X**			

Who	Content/type of Info	Lead Officer/s	Tactics						
			Drought Report	Water Situation Report		Media Relations	S'holder Man'ment / Briefings	Internal Comms	Meetings	Level of Engagement
				Monthly Hydrology Rep	Weekly Sit Rep					
MPs	• Current situation • Our activities • Actions their constituents should take should/need to take	Stakeholder Lead via Relationship Managers	**X**				**X**		**X**	
Regional and local media	• Current situation • Our activities • Actions the public should take • Drought permit and order notification and advertisement	Media Lead – Francesca Glyn-Jones Regional drought coordinator				**X**				
Trade organisations (e.g. National Farmers Union)	• Current situation • Our activities • Actions the sector represented can take									
Recreational groups	• How you can help • Actions the public / recreational users should take / need to take	Regional drought coordinator Communications lead						**X**		

Communications Plan Appendix 1

Key Yorkshire and NE messages – general drought (Summer 2010)

- The Environment Agency is working to balance the water needs of people, businesses and the environment .
- Drought has serious consequences for the environment, especially wildlife, and we are stepping up our checks on rivers.
- It is the Environment Agency responsibility to decide how much water is taken from lakes, rivers and reservoirs, without compromising the environment .
- Water is a precious resource which is already under pressure. Parts of England have less water available per person than Syria.
- By 2050, some rivers in England and Wales could see a 50-80 per cent reduction in average river flows during summer months.
- We all need to use less water to reduce our impact on the environment and safeguard supplies for the future.

Communications plan Appendix 2

Water Resources and Drought

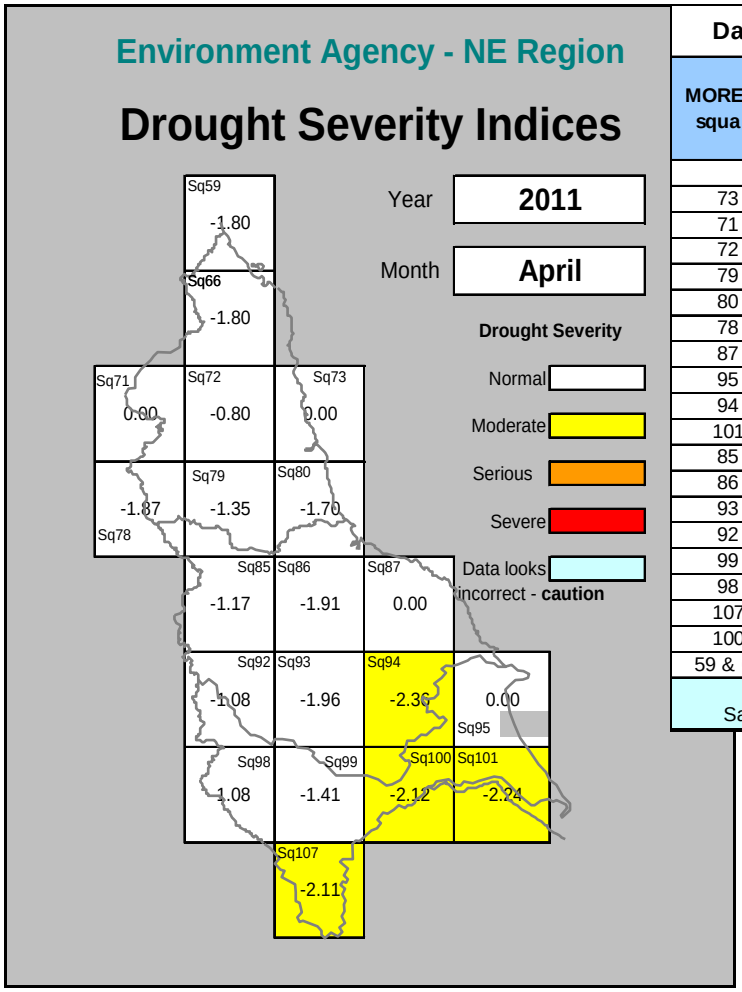
National Key message

* Key internal messages removed from public document.

Appendix D Internal HELP procedure

Notifiable incident and/or event	HELP Initial report	HELP Update report	HELP Closedown report
Regional drought team established	Submit an initial and closedown report. Further initial reports raised, relating to the same event, must note the date the first report was sent for audit purposes.	Not required	Include as part of the initial report.
Regional drought team disbanded	Submit an initial and closedown report.	Not required	Include as part of the initial report.
Drought permit	When you know that a water company has decided to make an application.	on receipt of application from a water company; when granting a drought permit; **for other significant developments, such as a high profile public hearing.**	on expiry/self-destruction of permit; on refusal of application; if decision taken not to proceed with application.
Drought order	When: you know a water company has decided to make an application; we make a decision to make an application.	when we, or a water company, make an application to Defra/ Wales Assembly Government (WAG); when a drought order is granted; **for other significant developments, such as high profile public hearing or environmental impact following implementation.**	on expiry/self-destruction of order; on refusal of application; if decision taken not to proceed with application.
Emergency drought order	When: you know a water company has decided to make an application; we make a decision to make an application.	when we. or a water company, make application to Defra/ WAG; when an emergency drought order is granted; for other significant developments, such as impacts following implementation.	on expiry/self-destruction of order; on refusal of application; if decision taken not to proceed with application.
s57 ban on spray irrigation	As soon as a decision is made to implement a partial or total ban	on implementation of partial or total ban; on escalation, such as from partial to total ban; for other significant developments, such as impacts following implementation.	on removal of ban; on decision to scale down ban.
During a drought any situation where there is an imminent or actual loss of public water supply to a village, town or city leading to tankering and/or standpipes and/or rota cuts whether caused by the drought and/or other factors (for example, mains burst)	Within one hour of identification that the situation is notifiable.	**Produce regularly:** to provide update on situation; on request to provide detailed information; or to advise when the next update will be sent if there is nothing new to report.	When: normal supplies have been restored; there is no longer a major risk to supplies.
Drought related **incidents** classified as Level A and/or Category 1 under CICS	Within one hour of identification that the incident is notifiable	**Produce regularly:** to provide update on situation; on request to provide detailed information; or to advise when the next update will be sent if there is nothing new to report.	When: our incident response is complete; update reports are no longer required.
Other drought related events fulfilling HELP criteria for a notifiable incident	Within one hour of identification that the event is notifiable.	**Produce regularly:** to provide update on situation; on request to provide detailed information; or to advise when the next update will be sent if there is nothing new to report.	When: our incident response is complete; update reports are no longer required.

Appendix E Drought Severity Index



Data used for DSI map		
MORECS square	Monthly rainfall to date (mm)	same rate of rain rain this month
73	2.8	4.7
71	57.3	95.5
72	11.1	18.5
79	8.3	13.9
80	4.3	7.1
78	49.6	82.7
87	4.8	8.0
95	3.2	5.3
94	1.7	2.8
101	4.8	8.0
85	17.5	29.2
86	3.4	5.7
93	3.4	5.7
92	15.5	25.8
99	10.5	17.5
98	18.0	30.0
107	8.8	14.7
100	1.1	1.8
59 & 66	5.0	8.3
Scenario 2 used Same rate of rain all month		

Using data up to 18th April 2011

This map shows the estimated DSI for the end of the month, using rainfall totals projected from the rain that has fallen to date and the Long Term Average (LTA). Projected rainfall has been calculated for four scenarios:

1) No more rain for the rest of the month
2) Rainfall will continue for the rest of the month at the same rate as to date.
3) For the rest of the month rainfall will continue at the LTA rate.
4) By the end of the month the rainfall total will equal the LTA.

Under normal circumstances, the map results for only one scenario will be presented.

The most appropriate scenario used will change as the month progresses. At the beginning of the month it is probably best to use scenarios 3 or 4, while at the end of the month Scenarios 1 & 2 are more appropriate. Weather forecasts or a need to model extreme conditions will also affect the choice of scenario.

Appendix F Examples of reporting

F1 Regional Hydrological reporting

* Internal report removed from public document.

F2 Regional reporting (local template)

Strategic Update

Regional Headlines at: Day Month 2011

- Three headlines

Summary Position:
Include Regional status (ie normal, potential drought etc), Hands Off Flows, stakeholder and media work. Any risks or implications for delivery of other work. Very brief local and national water situation.

	North East	Yorkshire	Region
Current 'Drought' Status			
Changes since last report?			
Water Company position			
Environmental Impacts			
Licence Restrictions			
Agriculture			
Reservoir Operations			
Navigation			
Communications			
Internal issues?			
Writing our own drought plan			
Statutory Water Company Drought Plans			

Weight of evidence – summary of position with triggers	Current view of triggers, where we have concerns and what actions we are taking. In response to triggers answers will be either: **NO** **WATCH** **ACTION**		
Triggers	**North East**	**Yorkshire**	**Overall position**
Rivers levels (Days at Q95) 21 days at low flow levels			
Drought Severity Index – a measure of the cumulating monthly rain deficit (Scenario			

generating DSI at yellow)			
Ground conditions Soil Moisture Deficit (SMD)			
Historical meteorological context (Top 10 driest since 1914 NCIC rainfall) Any areas in the top ten driest 3 month period			
Environmental Impacts Eg Fish rescues, fish in distress, fish kills, blue green algae outbreaks			
Water company stocks Reservoirs Below EA control line plus downward trend			
Abstraction Licences Hand Off Flow (HOFs) conditions in force			
Navigation Canal supply issues			
Potential Issues			
Completed by:		**Date**	

F3 Head Office weekly drought report template

Region					
Report date		**Report time**		**Number of pages**	1 of
Lead contact		**Title/ role**		**Authorised by**	
Current drought status					
Executive summary					

Predicted outlook	
Region/ Area response	
Issues/ Resources	
Public water supply	
Impact on the Environment	
Farming	
External contact	
Media/ Comms update	
Health and safety	
Additional information about the drought (including details of any abstraction restrictions e.g. s57 restrictions)	

Remember to fill in the tables on the pages below as these contain vital information for the National Drought team.

Appendix F3 continued

Water companies

Hosepipe and sprinkler bans – proposed /to be confirmed – proposed /to be confirmed

EA region	Water company	Water company resource zone with restrictions	Outline the location of restrictions by county councils and postcodes	Define ban: Sprinkler / Unattended / Full ban	Proposed start of ban

Hosepipe and sprinkler bans

EA region	Water company	Resource zone with restrictions	Outline the location of restrictions by county councils and postcodes	Define ban: Sprinkler / Unattended / Full ban	Start of ban

Hosepipe and sprinkler bans removed

EA region	Water company	Resource zone with restrictions	Outline the location of restrictions by county councils and postcodes	Start	Define ban: Sprinkler / Unattended / Full ban	Removed

Appendix F3 continued

Drought permits

Pre-application/to be confirmed

EA region and area office dealing with the application.	Water company	Proposed application submission date	Required for	Source

Current drought permits

EA region and area that dealt with the application.	Water company	Applied	Granted	Expires	Required for	Source

Expired and refused* drought permits

EA region and area that dealt with the application	Water company	Applied	Granted	Expired	Required for	Source

***For refused permits please merge the granted and expired cells and indicate that the permit was refused, plus date.**

Appendix F3 continued

Drought orders

Drought orders – pre-application/to be confirmed

EA region	Water company	Proposed application submission date to SoS or NAW	Required for	Source

Current drought orders

EA region	Water company	Applied	Granted	Expires	Required for	Source

Expired or refused* drought orders

EA region	Water company	Applied	Granted	Expires	Required for	Source

*For refused orders please merge the granted and expired cells and indicate that the permit was refused, plus date.

Appendix F3 continued

Environment

Reporting low flows – please report flows that are lowest for the time of year – either lowest/near lowest. The intended use will be for release to the media to highlight current conditions. In the comments box, please state if you think these sites would provide a photo/media opportunity.

River	Location (nearest town, possible grid reference)	Flow details			Date of previous minima	Comments (lowest on record, third lowest on record, completely dry etc…)
		Current	Average	Minima		

Reporting low groundwater levels

Groundwater levels	Location (nearest town, possible grid reference)	Groundwater levels			Date of previous minima	Comments (lowest on record, third lowest on record etc…)
		Current	Normal	Minima		

Fish kills / rescues – please highlight any planned rescues for media opportunities

Date	Location	Nearest town	Species	NIRS ref	comments

Appendix F3 continued

Agriculture

Abstraction cessation – hands off flow licence conditions

EA region	Area	Type of abstractions stopped	Source (include river, aquifer and nearest town)	Start of cessation	End of cessation

Voluntary restrictions

EA region	Area	Source (include river, aquifer and nearest town)	Request letters sent (include date)	Restrictions started	Restrictions removed	Details of restrictions

Section 57 restrictions (if restrictions are changed, please add as a new entry)

EA region	Area	Source (include river, aquifer and nearest town)	Warning letters sent (include date)	Restrictions started	Restrictions removed	Details of restrictions

Would you like to find out more about us, or about your environment?

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