Water company drought plan – technical guidance

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What is this document about?

Provides technical guidance for water companies and New Appointments and Variation (NAV) companies to assist with the production of statutory water company drought plans. It also covers requirements for water retailers for informing these plans.

Who is this document for?

Regulators, government, water companies, NAVs and water retailers

Contact for queries and feedback

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Version history

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1.0	March 2024	Updates made to the 2017 guideline and these are listed in section 2.6.
2.0	July 2024	Updates made to account for changes to reflect feedback following public consultation. Note final issued 8/7/24

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Section 1: Introduction

As a water undertaker you are required to prepare and publish drought plans under Sections 39B and 39C of the Water Industry Act 1991, as amended by the Water Act 2003, in accordance with the Drought Plan Regulations 2005 and the Drought Plan Direction 2017.

Your drought plan should show how you will provide a secure supply of water to your customers and protect the environment during periods of low rainfall and droughts when water supply becomes depleted. It is a short-term operational plan that should set out what actions you will take before, during and after a drought. It also sets out how you will assess the effects, including the environmental impacts of your actions and what you will do to monitor and prevent or mitigate these effects. There may also be additional requirements to compensate for damage that occurs as a result of any actions you take during a drought.

If you are a water company that is wholly or mainly in Wales you should follow this guidance when preparing your drought plan. It is designed to help you write a plan that complies with all the relevant statutory requirements and Welsh Government policy.

If you decide to follow any different approaches to those set out in this guidance, you should clearly justify their use and demonstrate how you are still fulfilling your obligations. We are fully supportive of new approaches however we will need time to understand and reflect on these. It is vital that you engage with Natural Resources Wales and other statutory consultees on the approaches you are adopting in your plan as early as possible to avoid unnecessary delays later in the process.

We have consulted with the Welsh Government, the Environment Agency, Ofwat, Natural England, water undertakers and other relevant groups on this guidance.

The Welsh Government's guiding principles for preparing drought plans for water companies wholly or mainly in Wales have been published separately to this guidance. The guiding principles set out the drought plan statutory process, legislation requirements and policy expectations. You should refer to the guiding principles in-conjunction with this guidance when preparing your drought plan.

Where we have used the word **"must"** in this guideline, we mean that this is a statutory requirement and/or there is a clear directive from Welsh Ministers to include within the drought plan. If you do not follow a **"must"** there is a high risk of producing a plan that is not legally compliant.

Where we have used the word "**should**" in this guidance we expect you to follow the advice in order for you to produce an adequate plan. To avoid delays to the decision on publishing your plan you should include justification in any cases where you have not followed a "**should**".

To accompany this guidance, we have developed a checklist tool (excel format) which is intended to aid you when determining what you must and should include in your drought plan. This will be issued to you alongside this guidance (and will be available upon request by email to WREPP@naturalresourceswales.gov.uk)

1.1. Water Companies wholly or mainly in England or water companies wholly in Wales with sites in England

If you are a water company wholly or mainly in England, you **must** contact the Environment Agency regarding following its Water company drought plan technical guidance when preparing your plan.

For these companies, if you have drought management actions within or affecting Wales, you should refer to requirements set out in sections of this guidance. This is particularly important when you are preparing the content of your environmental assessments, environmental monitoring plans, Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) for these sites. You will also have to consider your obligations within your plan in relation to the Environment (Wales) Act 2016 and Well-being of Future Generations (Wales) Act 2015 where you operate within or affect Wales.

Likewise, if you are a water company wholly or mainly in Wales, with drought management actions within or affecting England, you should refer to the Environment Agency's latest supplementary guidance in respect to environmental assessment requirements for those sites.

Referring to the relevant guidance will aid any discussions with Natural Resources Wales and/or Environment Agency and Natural England (as relevant) to ensure that you have covered any site specific environmental and wider impact requirements.

1.2. New Appointments and Variations

New Appointments and Variations (NAV) are made under the Water Industry Act 1991 (Sections 7 and 8) and enable Ofwat to replace the existing water supply and/or sewerage undertaker for another for a specific area.

New Appointments and Variations (NAVs) have the same legal duties and responsibilities as other water companies to produce drought plans. If you are operating as a NAV, you **must** prepare and publish a drought plan that demonstrates that all the statutory requirements have been met. However, the level of detail you provide within your plan may be proportionate to your customer base and how you obtain your water supplies. You should discuss the requirements for your drought plan with Natural Resources Wales and/or the Environment Agency at an early stage in the process.

If you operate under a bulk supply agreement with another water company, they are likely to have assessed many of the key concerns associated with your supply and drought management actions especially in respect to managing demand. Therefore, you should engage with them to inform the preparation of your plan. Through engagement with your supplier, you should set out in your plan the following:

- how your supplies will be maintained and whether any of the bulk supply would be modified in the event of a drought from that in normal operations and actions you would take if this was the case

- your understanding of the suppliers' planned levels of service and whether you align with this

- how you have taken account of any relevant donor/neighbouring undertaker's feedback, data and information when preparing plans

- the triggers for the drought management actions that you will take and whether these align with your supplier

- how your supplier will communicate and share information with you when preparing for and implementing actions

1.3. Water Supply & Sewerage Licensees

Water Supply & Sewerage Licensees (WSSLs) known as water retailers or self-suppliers, using the public water networks operated by water undertakers (wholesaler) whose areas are wholly or mainly in Wales can provide water services to eligible non-household premises.

If you are a water retailer, you are not required to prepare or publish your own drought plan. However, you must comply with Standard licence conditions which covers the requirements for i) provision of information to water undertakers and ii) carrying out reasonable instructions given to you during a drought by the relevant water undertakers as specified in their drought plan.

As the wholesaler, you should engage with retailers and self-suppliers with eligible customers in Wales during the preparation of their drought plans and during a drought when undertaking actions that affect a water retailers non household customers.

In addition, you and the water retailers should consider the recommendations (where relevant) on drought planning in the Water Efficiency Sub group guidance for retailer involvement in water resources planning.

Section 2: What to include in your drought plan

This section provides an overview of what must and should be included in your drought plan.

2.1. Content of your drought plan

You **must** follow any statutory Drought Plan Directions you receive from the Welsh Ministers and any set out in guiding principles about the content of your drought plan.

Your drought plan **must** set out:

- the management structure you will put in place during a drought showing who has responsibility for what (the decision making hierarchy and roles within that structure)
- the magnitude and duration of droughts for which your drought plan has been tested (e.g., testing against an appropriate range of drought scenarios)
- the permits and approvals you may need in order to implement your drought management measures such as land/planning permissions
- the discussions that have occurred between you, statutory consultees and bodies responsible for granting these and the arrangements for discussions with yourselves and those bodies from the onset, during and post drought for all droughts covered by your plan
- the measures that may be required to mitigate any adverse effect on the environment resulting from the implementation of a drought management action
- adequate monitoring to support satisfactory mitigation
- the permits and approvals you may need to implement measures to mitigate against adverse environmental damage such as to allow for compensation flows or provision of alternative supplies to protect the environment or other water interests
- the compensation you may need to make in the event of losses/damages to source owners/affected parties as a result of implementing a drought management action [1]

You **must** also comply with all relevant legislation [2] including:

- how your plan contributes to your duties under the Environment (Wales) Act 2016
- how your plan meets the Welsh Government expectation that you contribute to the Well-being of Future Generation (Wales) Act 2015 requirements by considering the well-being goals
- whether your plan requires a Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) and if it does, that you have completed the relevant assessment to meet the requirements
- information on how you'll mitigate any reductions in supply for firefighting as a result of your actions as required by Part 5 of the Fire and Rescue Services Act 2004

You **must** also consider whether any information is commercially confidential or a risk to national security before including it in your plan and you will need to submit a statement to the Welsh Ministers.

You **must** discuss with the statutory consultees their expectations for the content of your drought plan.

If you have identified supply-side drought management actions including drought permit and orders within your plan, we recommend that you carry out an environmental assessment for each action including any monitoring, mitigation or compensation required. Note that the outcomes from your individual environmental

[1] 'Compensation' is within the meaning of Schedule 9 to the Water Resources Act 1991
[2] Refer to the Welsh Government Guiding Principles for list of relevant legislation

assessments can be used to inform the separate SEA and HRA (if required) of your whole plan and visa versa.

You should discuss your approaches for developing environmental assessments with Natural Resources Wales and/or the Environment Agency. If any of these actions directly and/or indirectly affects a designated site in England, you must consult with Natural England. See section 5 for more information.

2.2. What we expect you to consider

We expect you to consider any Welsh Government's priorities, principles and policy commitments set out in its guiding principles and the Water Strategy for Wales.

Your plan should also include:

- a non-technical summary
- any pre-consultation discussions you have carried out with statutory consultees, your customers and other interested parties along with a statement of how you have taken these into account (or justify why you may not have) when preparing your plan
- your water supply area, water resource zones (WRZ) or drought management areas you are using in your plan (including maps). If you are planning for an area smaller than a water resource zone such as sub zonal you should explain the reasons for this
- how you have undertaken and presented an assessment of your drought risk (drought vulnerability)
- how you have defined the stages of drought
- your chosen drought triggers for your stages of drought, including triggers for start and end of a drought and explain why you've chosen these
- control diagrams to show your chosen triggers and actions you will take
- any agreements with other water companies and organisations about bulk supplies, transfers or division of shared resources
- what you will do to reduce the demand for water from the onset and during a drought and explain how you will impose any water use restrictions
- what you will do to maintain water supply from the onset and during a drought through supply-side actions
- how you have allowed enough time (lead in times) to prepare for and implement the actions associated with each drought trigger
- the likely sequencing for implementing drought management actions with justification
- a communications plan that sets out how you will communicate in a clear, and timely way with your customers, water companies, regulators, government, the Wales Drought Liaison Group (WDLG) and/or National Drought Group England (NDG) and other relevant groups from the onset, during and after a drought
- any joint communication plans with other water companies, regulators, WLDG and other relevant groups
- how you have considered Ofwat's guidance Service for all vulnerability guidance - Ofwat especially in respect to ensuring your communications are inclusive by design

- proactive communications with customers to help inform them of the impacts of drought on people including health and well-being, the environment and provide advice on what they can do to help avoid or mitigate the impact
- any agreed data/information exchange arrangements have made with regulators, government, the WDLG and/or NDG as well as other relevant groups and frequency for this reporting from the onset, during and after a drought.
- your process for stopping your drought management actions and how you'll communicate this information to regulators, government, WDLG and/or NDG customers and other relevant groups
- what you will do to review your performance (e.g., post drought review) including assessing the effectiveness of your actions and communications
- how you will ensure any changes and improvements identified after a drought are reflected in your operational response and made to future plans

If you have a bulk supply agreement(s) with another water company, you may choose to use drought triggers defined by your bulk supplier(s). You will still need to set out the drought triggers used and the actions associated with them within your drought plan.

If you are bulk supplier to NAVs or providing wholesaler services to water retailers or self-suppliers, we expect your plan to set out:

- how you will engage with the NAV, water retailer or self-supplier on preparation of your plan and what information you may need to inform it
- arrangements for any bulk supplies and whether these will be modified during a drought
- the arrangements that are in place to communicate and share relevant information on the current and near future resource position (drought status) to allow for early warning of crossing triggers and what actions need to be taken and by when.
- the roles and responsibility for planning for, implementing and enforcing drought management actions including who does what and who talks to who during a drought
- how you will ensure consistency between you, the NAV and water retailers regarding the timings for implementing actions and communicating with their customers – including water savings messaging and information regarding restrictions on water use

2.3. Check you are consistent with relevant plans

Water Resources Management Plan

Your Water Resources Management Plan (WRMP) will have set out how you have appraised and justified options required to meet your chosen levels of drought resilience and selected those that are the best economically, socially and environmentally. Your WRMP should have assessed your drought vulnerability to droughts of various return periods, types and severities. You should ensure that your drought plan is consistent with your latest WRMP.

Regional water resources plan

If a regional water resources plan includes drought management actions that affect your supply area, you should ensure that you have considered these in your plan.

You should also consider, where appropriate regional alignment on:

- how you will share water resources with neighbouring water undertakers
- how you will operate sources to benefit other water users during dry weather or a drought while minimising the risk to your supplies
- any joint communications including water efficiency campaigns and customer restrictions such as temporary use bans

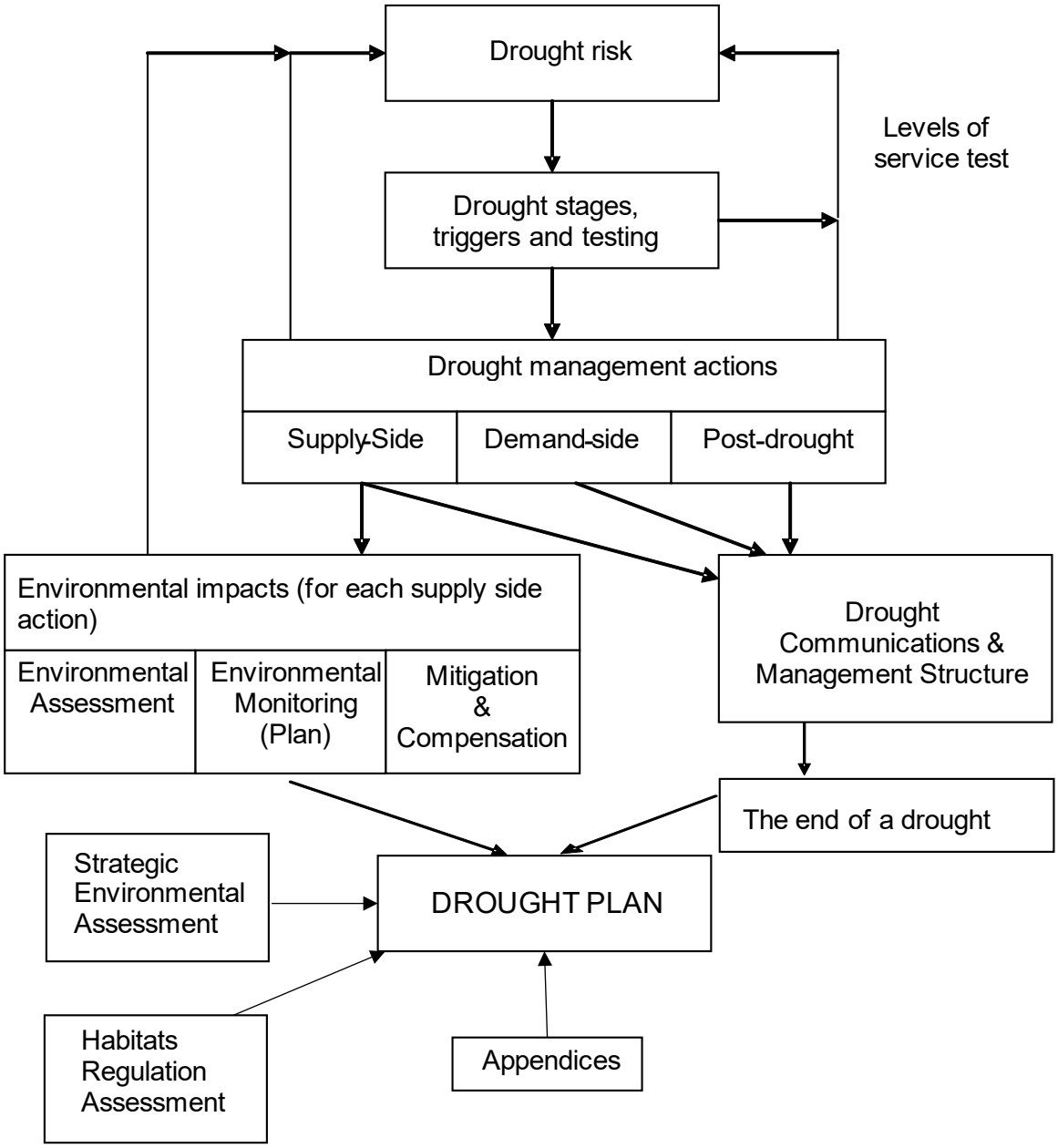
Other plans or strategies

Your drought plan may also have links with other plans or strategies. You should consider and explain how your drought plan links to:

- your business plan and emergency plan
- drought plans by Natural Resources Wales and/or the Environment Agency
- other water company and sector drought plans and (as relevant)
- Water Strategy for Wales (for supply areas within Wales)
- National framework for water resources (for supply areas within England)
- river basin management plans (RBMPs)
- well-being plans and area statements

2.4. Structure and format of your drought plan

Figure 1 below sets out the main components of a drought plan and the links that exist between them. You can determine the precise structure and layout of your drought plan, however we recommend you consider this and the additional information in Appendix C.



N.B SEA and HRA of the plan (if required) is informed by the individual environmental assessments and visa versa

Figure 1: Main components of a drought plan

2.5. Review of contents of your drought plan

We expect you to review the contents of your drought plan annually and include an overview of this within your WRMP annual review. Your annual review submission may include:

- any recent drought experience including any lessons identified from post drought review where effectiveness of your drought plan has been considered and if any changes are required to your drought planning and/or WRMP. This may lead to changes to:

    - your drought management areas and operational response
    - your understanding of capacity constraints and connectivity of your network
    - assumptions around drought resilience e.g., Levels of Service
    - drought triggers (control curves)
    - your assumptions of deployable output from your WRMP sources or proposed schemes in a dry year
    - the types of drought management actions you may take including drought permit/order sites (especially reflecting on any actions you took that were not effective or those that you feel you should have taken)
    - timelines for preparing for and implementation of your drought actions including water efficiency campaigns to maximise their effectiveness (reflecting on anything you would forward)
    - your communications plan and/or management structure

- progress regarding any additional work identified within your final drought plan, such as completion of environmental assessments or further work to meet HRA requirements

- progress on any baseline data collection, in-drought and post-drought monitoring – and how this has informed your environmental assessments

- any new guidance and code of practice in water industry that may affect how you manage a drought different to that set out in your drought plan

The exact requirements of this review will be included within the WRMP annual review guidance.

2.6. What's new since the last guidance

The main changes to the water company drought plan guidance since it was last published in 2017 are as follows:

- reflected on any lessons identified in respect to public water supply from recent dry weather/drought experience

- accounted for any legislative, regulatory or policy changes especially in respect to environmental requirements

- aligned with the Environment Agency's equivalent guidance (as relevant)

- taken account of any feedback from regulators, government, the water companies and other relevant groups that like to see changes within this guidance

- accounted for any changes to methodologies and/or code of practice such as UKWIR's Code of Practice (CoP) for temporary restrictions

- incorporated any ways of working agreed between water companies, NAVS and water retailers

- streamlined document where possible with majority of the detailed technical requirements moved to the appendices

Section 3: Drought risk, triggers and scenarios

This section sets out that you should assess drought risk, develop your drought triggers and how you should test your triggers against a range of drought scenarios. You should link to drought management actions to these triggers.

3.1. Understanding drought risk

As part of your WRMP, you should have assessed the risk of your supply system to different types of drought events and the probability of such events occurring. Your WRMP should have included any operational response and network improvements, such as investment into revised hydraulic modelling, pumping stations, pipe replacements, connectivity between water resource zones and investments into water treatment works that you have (or will be) carrying out that will improve your resilience to drought risk. Therefore, your WRMP should have included the drought supply/demand risks for your WRZs in relation to:

- Level of Service, which describes the frequency at which you expect to have to impose interventions such as Temporary Use Bans and Non-essential Use Bans

- Drought Resilience, which describes the severity of drought that you expect to be able to manage without having to resort to measures such as emergency drought orders to restrict supplies e.g., rota cuts and stand pipes.

We expect you to set out how you have undertaken an assessment of your drought risk (drought vulnerability) and include the key outputs within your drought plan.

If you are a water company or NAV, with bulk supply or shared resource agreement, we expect you to work with your supplier to understand any risk to your supply during a drought and include this information within your plan e.g., whether the amount of supply agreed is likely to be affected by different droughts.

You should clarify the method you have used to understand your drought risk, such as UKWIR ‘Drought vulnerability framework’ or alternative method appropriate to your supply system.

We recommend you engage early with Natural Resources Wales and/or the Environment Agency to discuss your assessment of drought risk and at what scale this has been undertaken within your operating area.

3.2. Stages of drought and triggers

We expect you to set out in your plan the stages of drought that you will use to report to your customers, regulators, government, WDLG, NDG and other relevant groups

as the drought severity escalates from onset to its end. These stages of drought will be linked to the position of your supplies whether they are your own and/or a bulk supply transfer typically at WRZ or sub zonal area.

Water companies should continue to use the following terminology for defining stages of drought within Wales - normal, developing drought, drought, severe drought and recovery from drought (post drought)[3].

Your drought plan should also contain drought triggers to identify when you are likely to need to prepare for and implement a drought management action. Drought triggers can be developed at different levels; WRZ, company or for drought management areas. However, if you are planning to a level smaller than a water resource zone then this needs to be explained. Your plan should include maps showing the geographical area in which the different triggers apply.

Your plan should:

- include triggers for all stages of drought from its onset to its end
- include your chosen drought triggers and the actions you will take if you cross a trigger
- explain why you've chosen your drought triggers

You should demonstrate that your drought triggers are consistent with your WRMP including levels of service.

You should also consider whether any additional trigger is required before you cross into the next stage to enable early warning of potential public water supply concerns and likelihood of taking specific actions especially to regulators, government, WDLG and/or NDG as well as other relevant groups. You will also need consider whether need to take appropriate actions early such as water efficiency measures.

You can use the following as drought triggers, on their own or in combination with each other:

- rainfall
- reservoir storage (stocks)
- river flows
- groundwater levels
- issues with nearby water resources zones
- customer demand for water
- any other appropriate measures

Where you have identified multiple sources with triggers, you should state how these interact and the primary source (or combined sources) for triggering your drought management actions.

The trigger to prepare for and implement emergency drought orders (rota cuts and stand pipes) should be identified in your drought plan. Refer to section 4.3 for more information.

[3] Note that stages for defining drought in respect to public water supply may differ from those used by regulators to define their own drought stages. Regulator drought stages are informed by water company position as well as other indicators linked to environmental, agricultural and other concerns.

There are several methods that you can use to develop your drought triggers and some are listed below:

- Rainfall totals at specific location or areal scale can be used to demonstrate an exceptional shortage of rain (Appendix H) and identify triggers to initiate drought actions. Triggers can be set by comparing the current rainfall record for the area of interest to the long term average rainfall record or the cumulative rainfall total for a specified time period.

- Reservoir level(s) for individual or combined (defined as volume and/or percentage) can be developed into trigger curves to identify storage below which specific drought actions should be prepared for and implemented. This type of trigger can be developed using water resource system modelling techniques, and/or from historic reservoir drawdown records, previous drought experience and expert knowledge of the water company system response.

  When developing your drought triggers, where a reservoir has a reserved allocation of water for use by others (such as a water bank allocation for freshet releases for environmental purposes) you should ensure that your drought triggers are based on the storage reserved for your water supply only unless you have agreements in place with the other user that you can use their allocation as a drought escalates.

- Measured flows at relevant river gauging stations can be used to develop drought triggers where these are linked to abstractions and operating agreements.

- Groundwater levels from established observation boreholes, or from pumped borehole sources, can be used to develop drought triggers for groundwater resources. Triggers can be set based on groundwater level data from known historical drought periods and, where available, data from test pumping of sources, or from suitable groundwater models

- Customer demand for water (peak demand). This may lead to treatment works capacity and/or licence abstraction limits being met as result of high demand on the system.

- Issues in neighbouring water resource zones that mean your supply may be affected particularly if you are reliant on a bulk supply transfer.

- You may identify other relevant parameters, including environmental requirements.

You should present your chosen triggers in relevant graphs, such as control diagrams (control curves) for each of your water resource zones. These diagrams should annotate where your drought trigger points are crossed and when you will carry out the associated actions.

Control curves are more commonly linked to reservoir storage. We recognise that alternative control curves can also be used to determine actions, such as ‘Hands Off’ flows and groundwater levels. Examples of a reservoir control diagram with

associated actions and scenarios has been included in Appendices D and E. Section 4 provides further guidance on the type of drought management action(s) that should be associated with each trigger.

3.3. Test your drought triggers

Each drought is different in terms of severity, location and hence impact. You **must** show how you have tested your chosen triggers and that they are appropriate to a range of drought scenarios of different magnitude and duration.

We expect you to, as a minimum, test your triggers to the same severity of drought used in your WRMP for equivalent planning years for the life cycle of your drought plan and consider more challenging and plausible drought scenarios. Your preferred approach to test your triggers should be discussed with Natural Resources Wales and/or the Environment Agency.

You should explain what relevant data and methods you have used to derive the conditions for each of your scenario tests. Your plan should:

- describe the timeline leading up to your drought scenarios: what combination of drought triggers initiated the drought and when they were each triggered
- provide details of the scenarios used including those of different magnitude and duration such as single and multi-season
- justify why you chose these scenarios, explaining why they were appropriate for a particular area
- what actions you will take in different droughts
- show the timings of when you will prepare for and implement the actions and how long for, demonstrating that they will improve your water resource position
- ensure that they are in place long enough to monitor their effectiveness
- consider any actions taken by others – such as environmental drought orders that may affect your triggers and may change the actions you take

You should revise your drought scenario tests every time you review your drought plan to make sure they are the most up-to date.

Section 4: Drought Management Actions

We expect you to clearly and concisely set out everything that you plan to do from the onset, during and after drought in order that regulators, government, WDLG and/or NDG, customers and other relevant groups can easily understand the likely actions your company may take (and in which order).

You should consider a suite of drought management actions that are appropriate to your supply network and customer base. You **must** set out any permits and approvals required in order to implement the drought management actions including drought permits or drought orders.

If you are a NAV with a bulk supply, it is likely that you will align your actions with those undertaken by your supplier. You will still need to set out the relevant information in your drought plan (as outlined in this section).

We expect you to prepare for and implement demand management actions first and prioritise the use of the least impactful supply-side actions (see Table 1). This means we expect you to take actions to reduce customer demand via enhanced water efficiency campaigns, enhance leakage control, outage management and optimising your operations, utilising standby/unused sources (where feasible in a timely manner) before taking more water from the environment or further restrict water use via a drought permit or drought order.

Appendix D also provides an example of the likely drought management measures sequencing against a control curve diagram.

Table 1: likely sequencing for initially taking actions during each stage of drought (in respect to public water supply)*

Stage of Drought (increasing severity)	Demand side actions	Supply side actions[4]
Normal[5]	Business as usual (BAU), water efficiency campaigns, leakage and pressure management	Use of existing sources
Developing drought	Enhanced water efficiency, leakage and pressure management	Drought management actions with minor/negligible environmental impacts (optimising existing sources including transfers, outage etc)
Drought	Temporary use bans	Drought management actions with minor/negligible environmental impacts (using standby operational sources)
		Drought management actions with minor environmental impacts (drought permits or ordinary drought orders)
Severe Drought	Non-essential use bans	Drought management actions with moderate environmental impacts (drought permits or ordinary drought orders)

[4]We would expect for each supply-side environmental assessment and SEA/HRA (if required) that the appropriate level of reporting is within your drought plan in order to demonstrate how you will be compliant with the relevant legislative requirements.

[5] As you approach developing drought, we expect early warning discussions with regulators, government, WDLG and/or NDG to take place.

		Drought management actions with major environmental impacts (drought permits and ordinary drought orders)
Emergency Plan	Emergency drought orders (standpipes and rota cuts	

*Note that this table identifies the likely sequencing when you may initially take the drought management action. It does not include when you might start preparing for the relevant action (as you will need to define the appropriate lead in time). These actions once implemented may continue to remain in place for remaining stages of drought, such as enhanced water efficiency, until declared by you that the relevant action is no longer required.

We expect you to follow your published drought plan from the onset and during a drought. Once your drought plan has been activated, there may be circumstances depending on developing situation at WRZ or company level when you decide not to follow your published plan. These circumstances include when you:

- consider specific action(s) in your plan are not appropriate to your current circumstances at WRZ or company level
- consider specific action(s) will be more effective to be prepared for and implemented sooner than indicated
- are in the middle of the regulatory process for the next drought plan (e.g., post public consultation) and you consider the actions in your most recent draft drought plan more appropriate to follow

In these cases, you should have early discussions with regulators, government, WDLG and/or NDG as well as other relevant groups to justify the reasons why you consider it is not appropriate to follow your published plan. However, we would still expect you to demonstrate that you have taken effective action including demand management as early as possible. If you do not, this may risk any subsequent application (if required) for supply-side drought permit or order being granted especially if they damage the environment.

4.1. Demand-side drought management actions

We expect your plan to set out the actions that you will take to reduce the demand for water from the onset and during a drought. You **must** include any that require permits and approvals such as a drought order to restrict water use.

Actions to reduce demand include:

- increased leakage control, including supply pipes repairs
- encourage customers to use less water (including those businesses contacted through water retailers)

- carry out additional initiatives to improve household water efficiency such as targeted communications about water use and behaviour or providing information to customers about how to reduce plumbing losses
- mains pressure reduction
- increasing the efficiency of your operations (optimising your operations)
- temporarily restrict water use (temporary use bans)
- restrict non-essential uses of water using a drought order (non-essential use bans)

There may also be alternatives that you believe should be included as part of your demand side actions not mentioned above. You will need to clarify what these are within your plan.

You should include the following information for each of your actions to reduce demand:

- description of the action
- the trigger(s) and/or details of preceding actions to show the relative priority of taking your actions (likelihood of use/drought scenario trigger)
- the location – the area affected, for example at a company, WRZ or sub-zonal area
- the time it will take to prepare for and implement the action
- the duration that the action is expected to be in place
- who the action applies to e.g., whether there are any exceptions
- the likely period and time of year that the action would be implemented
- details of any permits and approvals required in order to implement the action; including a summary of the liaison that has occurred with the bodies responsible for granting the permissions
- an assessment of the risks associated with the implementation of an action, social, economic factors, health and well-being including any wider impacts to the public e.g., access to recreational activities
- whether there are uncertainties associated with timings and effectiveness of implementing the action
- how you will evaluate the effectiveness of implementing the action and where possible provide estimates of demand savings

You should also set out how you will engage with NAVs and/or Water Retailers operating in the location where actions required and define who is responsible for preparing for, implementing and enforcing these.

We expect you to collaboratively lead on behaviour change campaigns on respecting water resources especially during drought as well as managing peak demands. You, along with NAVs and water retailers (where relevant), should encourage non-household customers to reduce their usage, recognising the wide variety of types and sizes of business customer.

You should consider the most effective way to reduce water demand and whether it is best to carry out your actions across your company as a whole, WRZ or over a smaller area. You should also discuss with Natural Resources Wales and/or the Environment Agency, government, WDLG and/or NDG as well as other relevant

groups their expectations for time of year that certain demand management actions, such as Temporary Use Bans (TUBS), should be implemented.

We would expect to see a suite of demand actions implemented all year round including TUBs if they are proven to be effective and delay requirement of supply-side measures that may damage the environment. However, if you consider that a specific demand management action would not be effective for specific reasons such as time of year, we expect you to clarify the circumstances of why this is the case within your plan.

You can use these publications to help you reduce demand and understand the effectiveness of these measures including water savings you could make:

- Estimating the Water Savings for Baseline Water Efficiency Activities (09/WR/25/4)
- Drought and Demand: Modelling the Impact of Restrictions on Demand During Drought (07/WR/02/3)
- Drought and demand: potential for improving the management of future drought (07/WR/02/2)
- Understanding the impacts of drought restrictions (14/WR/01/13)
- Drought demand modelling study the Environment Agency (2014)
- Estimating scenarios for domestic water demand under drought conditions in England and Wales (2018) Water Science and Technology: Water Supply.
- Review of 2022 drought demand management measures Artesia (2023)
- Efficacy of demand management measures Arup (2023) – which is available from Natural Resources Wales upon request

You should summarise what you will do to reduce demand, and at what scale, using the form in Appendix F. Additional information to illustrate the demand-side actions presented in the completed form should be set out in the main body of your plan.

Effective communication and engagement with customers and consumer interest groups as well as working collaboratively with neighbouring water companies, WDLG and/or NDG as well as other relevant groups are key to the success of many demand-side actions and encourages positive behavioural changes of water users. You should also set out how and where demand-side management actions fit within your communications plan. For further details refer to Section 7.

Temporary water use restrictions

We expect your plan to explain how you will temporarily restrict water use during a drought. You **must** set out those that require permits and approvals as well as consider the relevant water use restriction legislation Water Use (Temporary Bans) Order 2010 and Drought Direction 2011.

You **must** also set out the compensation arrangements, if any, that may occur if you implement any temporary restrictions.

We expect your plan to explain:

- the temporary restrictions you plan to carry out such as temporary use bans or drought orders to restrict non-essential use (non-essential use bans).

- the areas where these will be carried out and what water use activities will be affected by these restrictions
- statutory and non-statutory exceptions
- how you will balance expected water savings against adverse impacts on customers and businesses (including economic and wellbeing)
- how much time you will set aside for comment during the consultation period before using a restriction and how you will deal with an unexpectedly large response
- how you will consider consultee responses within the timings of implementing measures once you have crossed these triggers at the time of a drought event.
- how you will work with neighbouring companies, NAVs and water retailers (where relevant) to align your approach to temporary restrictions and reduce demand, as well as how you tell them when you are taking these actions
- how you will tell customers, regulators, government, WDLG and/or NDG and other relevant groups about the introduction, phasing in and lifting of temporary restrictions. You should also include information in your plan about how you will keep this information up to date and provide examples of the type of notice that would be issued
- how you will prove to customers, partners, regulators and the government that you have acted in a proportionate and reasonable way

You should take into account any experience of temporary water use restrictions by yourselves or across the wider water industry (such as in Drought 2022) when making a decision of how to prepare for and implement them and how you will manage this process.

We expect you to also consider UK Water Industry Research (UKWIR) report 'Managing through drought: code of practice and guidance on water use restrictions - 2023' when considering how to temporarily restrict water use. The principles set out in this code of practice are:

- ensure a consistent and transparent approach to implement temporary restrictions
- ensure these are proportionate
- communicate clearly with customers and the wider public
- consider representations to any notices in a fair way
- work together and co-ordinate communications with neighbouring water companies, NAVs, water retailers and other relevant drought groups
- adopt a common phased approach – considering social-economic factors
- adopt a common approach to TUB and NEUB exceptions
- promote understanding and good practice

Managing peak demands

We expect you to set out in your plan, any demand management actions you will take as a consequence of peak demands especially linked to dry hot weather (heatwaves) that may exacerbate your supply position:

- from the onset or during a drought

and/or

- occur when the regulators, WDLG or NDG have declared prolonged dry weather or drought in your supply area

You may decide to include these within a separate section within your plan in order to separate out the triggers and actions as a result of peak demand concerns from those that are linked to your stages of drought.

4.2. Supply-side drought management actions

We expect you to set out what you will do to maintain water supply from the onset and during a drought. You are expected to prioritise your supply actions that have the least environmental impact (and for which you have high confidence in that assessment) and maintain compliance with your abstraction licence conditions.

Examples of actions you could take include:

- carrying out engineering work, such as optimising water treatment works or the distribution system
- rescheduling planned works to reduce outage or bring forward planned asset improvement works
- reviewing and implementing options to optimise current sources and network
- transferring water in bulk from other water companies or between your water resource zones
- lowering pumps or deepening boreholes
- reducing raw water losses
- re-commissioning unused sources of water that are still licensed.
- tankering by lorries
- using drought permits and drought orders
- using desalination– permanent or temporary plants

For each supply-side action, you should:

- estimate of how much your action will contribute to maintaining water supply and provide supporting information for how you arrived at this estimate
- make sure your action aligns with other water companies or regulators drought plans / agreements that may affect you – such as Dee General Directions
- set out the limits to the amount of water you transfer via bulk supply agreement and/or shared resource from and to other companies including NAVs and how this is likely to change under different stages of a drought
- complete an environmental assessment showing the likely impacts of the action on the environment (set out in your environmental assessment report)
- explain how you will assess baseline conditions and likely environmental impacts
- explain any monitoring requirements to fill any gaps in knowledge, understand and ground-truth likely and actual impacts (linked to environmental monitoring plan)
- include how you will avoid, reduce, mitigate and/or compensate for any adverse effects

You should also include the following information:

- the trigger for this action and/or the preceding action that leads to it (likelihood of use/drought scenario trigger)
- the deployable output or yield of the action (in megalitres per day), plus how you calculated it and any uncertainty in the estimate
- the location (area affected or the whole supply zone)
- the implementation timetable (time to prepare for, implementation and duration expected to be in place)
- justify the time of year during which the action will be effective and uncertainties associated with timings and water provided
- other risks associated with this action, for instance, social, economic or to other water users

If you are using a source that is new or you have not used the licence for a long time, you will need to address any requirements of the Drinking Water Inspectorate.

If your actions in a drought lead to infrastructure improvements that permanently increase water output, you should include this in the deployable output assessment of your WRMP annual review and/or next WRMP.

In addition, if you are regularly reliant on supporting part of your supply network (e.g., sub zonal level) due to dry weather or peak demands through tankering via lorries – we expect you to consider the resource zone integrity of your zone via WRMP and you may have to seek alternative options to improve the resilience of that area.

A summary of each supply-side action should be presented using the form in Appendix G. Additional information to illustrate the supply-side actions presented in the form should be set out in the main body of your plan. Section 5 presents further information on environmental assessment, monitoring and mitigation requirements.

4.3. Drought permits and drought orders

Drought permits and drought orders if granted can allow more flexibility to manage your water supplies, such as modifying or suspending conditions on your abstraction licence or allowing water taken from another source during a drought. Ordinary drought orders can also be used to restrict use of water (non- essential use bans).

Drought permits and drought orders are not for managing resources during natural disasters (such as flooding) or other emergencies (such as mismanagement or other infrastructure failure events). Under these circumstances, you should discuss the best approach to managing the situation with Natural Resources Wales or the Environment Agency.

Your drought plan **must** include details of all possible drought permits and drought orders you might apply for under the range of droughts that you have planned for.

You **must** also set out any additional permits and approvals you may require when applying for drought permit or orders, such as environmental permits or obtained a derogation consent from any affected licence holders.

Your drought plan **must** also set out the compensation you may need to make in the event of losses/damages to source owners/affected parties as a result of implementing a drought management measure. 'Compensation' is within the meaning of Schedule 9 to the Water Resources Act 1991. This includes compensation for compulsory purchase and also compensation for those that have suffered loss as a result of a drought order or permit overriding their rights to the water.

Before you apply for a drought permit or order, you **must** be able to demonstrate that:

- there has been an exceptional shortage of rain (ESoR)
- justification of need exists, including the timing of the risk to public water supply (serious deficiency of water supplies)
- appropriate drought actions have already been implemented

We expect you to be clear on whether you are applying for a drought permit or order and the supporting information you include in your published plan will form part of the justification of need when you come to formally apply for it. Further advice on how you might demonstrate ESoR has been provided in Appendix H.

You would be expected to demonstrate that you have increased your drought response activity through taking all the appropriate actions including promoting voluntary water efficiency savings to your customers, leakage reduction, operational changes to your distribution system and temporary use bans (where possible indicating expected savings) before you apply for a drought permit or order to take more water out of the environment.

In addition, you should consider making full use of all your available operational licensed sources of water (as set out in your WRMP) before applying for drought permits and drought orders. However, where an abstraction is identified as unfeasible and/or increasing volumes above recent actual abstraction during a drought is likely to cause an environmental impact, you should consider whether alternative options may be a better option to avoid or reduce the impact on the environment.

If at the time of drought, you do not follow your plan and apply for a drought permit or order without implementing an action to reduce demand such as TUBs - you will have to fully justify to regulators, government, WDLG and/or NDG under what circumstances you have chosen not to take these actions. You will also need to prove that you can secure supplies without the need for more action that damages the environment or other water users.

You can find drought permit order guidance on our website:

- Before you apply
- Apply for a drought permit
- Apply for a drought order or emergency drought order

Under section 79 of the Water Resources Act 1991 (as amended by section 64 of the Water Act 2003) Natural Resources Wales or the Environment Agency will recover from you all reasonable costs incurred in the exercise of our functions that are attributable to any drought permit or order application.

Being drought permit or order application ready

We expect you to carry out as much preparation work as possible in advance of a drought event. Being drought permit or order application ready will:

- reduce time to prepare and determine an application in a drought by having all the necessary information available beforehand
- reduce uncertainty in your plan, e.g., you are already aware of any issues or objections relating to the application
- help prioritise drought actions as you will understand environmental sensitivity, probability of use and the likely impacts.

Applications for drought permits and orders should, in the majority of cases, be close to being ready to submit prior to being needed especially in respect to the 'environmental report' which will be informed by your environmental assessment, SEA and HRA within your drought plan.

We[6] expect you to be application ready for drought permits or orders that:

- potentially causing moderate to major environmental impact, including those drought permits and orders that have a 'Likely Significant Effect' under Habitats Regulations and/or Countryside and Rights of Way (CRoW) Act;

and/or

- potentially causing 'deterioration' or preventing a water body or a Protected Area from achieving its objectives under the Water Environment (Water Framework Directive (WFD)) (England & Wales) Regulations 2017 (hereafter referred to as the WFD Regulations 2017);

and/or

- have a higher likelihood of use in a drought (e.g., drought permits and orders that have been identified as being required under the most 'likely' drought scenarios).

The main information you should prepare in advance of an application (which is informed by your plan) is as follows:

- **An environmental assessment, monitoring and mitigation:** completing adequate environmental assessments, monitoring plan and mitigation measures (if required) at planning stage to inform the environmental report

[6] Refer to the Environment Agency's expectations for drought permit/orders located in England

required for an application is an essential part of being ‘application ready’. Refer to Section 5 for more information.

- **Any further assessments that may be required:** some of the sites may require more than just a standard environmental assessment and additional permit or approval requirements. Based on best available information, these assessments should be completed to inform the application process and to meet any legislative requirements, such as HRA if relevant.

You should regularly assess and update the information especially in relation environmental impacts held on these applications to keep them current.

You should also consider preparing in advance (where possible) the following information:

- **Your case for ‘exceptional shortage of rain’:** you may not be able to produce your exact case in advance but you can prepare how the case will be made (such as which rain gauges and methods will be used and what rainfall patterns could cause the drought permit/order to be required).

- **Justification for the order of use:** you should explain the likely order to be applied for your permits and orders (such as those with the least impacts on the environment).

- **What actions have already been taken:** you will need to provide evidence of the actions you have already taken. You will need to include details of the drought management actions you have implemented ahead of the application and how successful these have been. You can use quantitative and/or qualitative measures (such as overall demand savings as reduction in distribution input or website hits) to show this. If you have not taken an action in line with your drought plan ahead of an application such as a TUB – you will need to engage early with regulators and/or government to fully justify why.

- **A plan for any unsuccessful applications:** you should be prepared for any possibility of objections and a public hearing/inquiry. You should consider the impacts and risks your drought permits or orders (if granted) may have on other stakeholders (such as other licence holders, water companies, navigation authorities, the environment and other water users) and discuss these with them in advance of an application. Where applications are not straightforward (e.g., significant objections or issues) you should consider what you would do to maintain supply in the event of an unsuccessful application.

During the onset of a drought and where you consider that there is a likelihood of an application, to reduce processing time (and increase the likelihood of a successful application) we expect companies to submit pre-applications to us in line with our drought permit and order guidance. We accept that some of the work will need to be done at the time of application, such as the full justification of need case and setting out what actions your company has actually taken to reduce demand and increase supply.

You should estimate the amount of time you will need to complete this work at the time of application (including pre-application) and factor this into your drought triggers and scenario projections. You will also need to provide a plan or programme to show how you will do the necessary work.

We recommend you engage with Natural Resources Wales and/or the Environment Agency and Natural England if required early to discuss expectations on being application ready and pre-applications. The expected level of effort and reporting for environmental assessments for inclusion within your drought plan is set out in Section 5 and Appendix I 1.4.

Emergency drought orders

The water company can apply for an emergency drought order to restrict water use via rota cuts and the provision of use of standpipes. The specific details of emergency actions including drought orders sit within your emergency plans (which is not in the public domain) and are covered by Civil Contingencies Act 2004.

You do not need to provide full details of what you would do during a civil emergency within your drought plan. However, it would be useful to summarise how emergency drought orders may affect your customers and, for this reason, you should include this information within your drought plan:

- a brief description to explain to your customers what an emergency plan is and how it fits with your drought plan
- the likelihood of these emergency orders being required
- at what trigger point emergency drought orders will be planned for and implemented

Section 5: Environmental assessment, monitoring and mitigation

For each of your supply side actions we expect you to:

- complete an environmental assessment outlining the baseline conditions – identify any knowledge gaps and set out your strategy and timetable for filling these knowledge gaps and completing all baseline data collection.
- assess the environmental sensitivity of receptors that may be affected by the action and the likely impacts on them
- assigning a confidence level for your assessment outcomes
- set out the environmental monitoring you will carry out during drought and post drought (recovery) in order improve your understanding of the impacts of your action
- identify any measures to avoid, reduce, mitigate or compensate the environmental impact of your action

You **must** consider 'alone' and 'in-combination' likely impacts that each action and other actions in your plan and/or those taken by other water companies have on the environment, and where relevant, the combination effects of your action(s) with those of neighbouring water companies, regulators and other abstractors during a drought.

In the case where you may have other supply-side actions within the same resource zone or drought management area that you have completed individual environmental assessment for, these should help inform your choices on when and how to use the different supply side drought management actions available to you including prioritising implementing those with the least environmental impact first.

5.1 Environmental assessment

Figure 2 sets out the high level approach you should take when developing your environmental assessments for each of your supply side drought management actions. Refer to Environmental Assessment to Appendix I for more information on the approach.

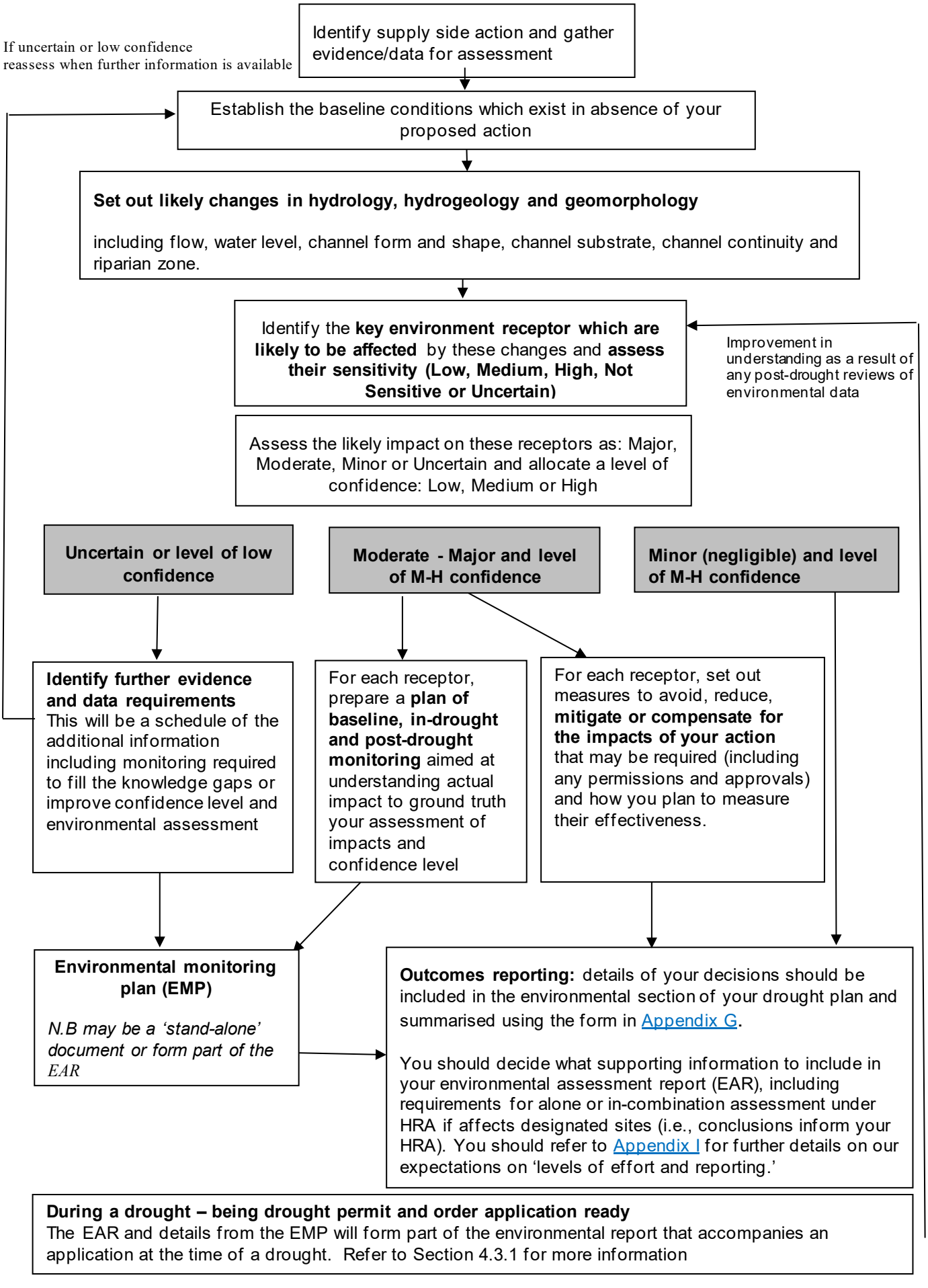
Legislation requirements

Your environmental assessments **must** demonstrate how you will meet the legislative requirements of:

- Drought Plan Direction (Wales) 2017
- Environmental Assessment of Plans and Programmes Regulations 2004 – Strategic Environmental Assessment
- Conservation of Habitats and Species Regulations 2017
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 including the objectives set out in RBMPs
- Environment (Wales) Act 2016 –Section 6 Biodiversity and Resilience of Ecosystem Duty
- Well-being of Future Generations (Wales) Act 2015
- Salmon and Freshwater Fisheries Act 1975 as amended
- Eel (England and Wales) Regulations 2009
- Countryside and Rights of Way Act 2000 / Wildlife and Countryside Act 1981
- Invasive Alien Species (Enforcement and Permitting) Order 2019 (INNS)

More information on legislation requirements is available in Appendix I1.2.

Figure 2 High level approach to environmental assessment



Engagement with regulators

We expect you to discuss your environmental assessment including baseline data sets and any gap in your understanding, monitoring plan and any mitigation measures for each supply side action as early as possible with Natural Resources Wales and/or the Environment Agency and Natural England for sites in England when preparing your plan.

If your action affects a site(s) in England, directly or indirectly, you must also consider any other requirements set out by the Environment Agency's environmental assessment supplementary guidance. This is available directly from the Environment Agency upon request.

Where a supply-side action may affect a Special Area of Conservation (SAC), Special Protection Area (SPA), NNR, Ramsar site or SSSI you must also consult Natural Resources Wales or Natural England to ascertain likely effects on the designated site and to agree any monitoring arrangements. Any actions identified within National Park Authority boundaries should also be discussed with the relevant National Parks authorities.

Importance of upfront assessments

We expect you to complete as much work as possible on your environmental assessments, monitoring and mitigation plans at planning stage. The benefits of doing this are:

- it allows you to make informed choices about when and how to use your various supply side actions
- it enables you, Natural Resources Wales and other regulators to determine if a more detailed assessment is required, for example, an Appropriate Assessment under the Habitats Regulations
- it is an essential part of being 'application ready' for drought permits and orders.

We expect a summary of any 'likely' environmental impacts of each of your supply-side actions, avoidance, mitigation or compensation measures (including any permits or approvals required) alongside the monitoring requirements to be presented in your plan using the form in Appendix G.

For each supply-side action, the supporting information is commonly presented within an environmental assessment report included in your appendices. We expect your environmental assessment report to include the information set out in Appendix I1.3.

If you are unable to complete specific environment assessments due to lack of baseline data or other reasons that leads to uncertainty, low confidence and/or unable to meet relevant legislative requirements – then you will need to discuss expectations for timescales for their completion via a programme of work with the relevant regulators.

More information is available on levels of effort and reporting in Appendix I 1.4.

5.2. Environmental monitoring

Environmental monitoring plays distinct roles in the drought planning process. These are helping you to:

- complete any baseline data collection
- fill any knowledge gaps
- understand the likely environmental impacts of your action
- understand the actual environmental impacts of implementing your action during a drought event
- understand post drought recovery

It is your responsibility to generate appropriate environmental datasets for you to adequately understand the baseline conditions, the likely and actual environmental impacts of your supply side drought actions (alone or in-combination).

Environmental monitoring plan

We expect you to produce environmental monitoring plans (EMPs) which set out all specific requirements to collect baseline data, fill knowledge gaps, understand the likely and actual environmental impact of each supply side action during and post drought. You should consider including your monitoring plans within your environmental assessments and summarise the requirements in your main drought plan.

When you review your environmental assessments and monitoring requirements annually - any changes to monitoring programmes, should be reflected in your EMP accordingly.

You should discuss your EMP as early as possible with Natural Resources Wales and/or the Environment Agency, and if relevant Natural England.

Further details on environmental monitoring and what should go in EMPs can be found in Appendix J. Further information on environmental receptors and monitoring considerations is in Appendix K.

5.3. Mitigation and/or compensation measures

You **must** set out how you will plan to avoid, reduce or mitigate for adverse effects that your actions have on the environment.

You **must** set out for each supply side action where you have identified adverse impacts on the environment the following:

- how you have considered avoiding adverse impacts in the first instance
- mitigation measures you are likely to implement before or whilst drought is developing, during drought and following a drought (post-drought) to minimise the environmental impact of implementing your actions

- clarify the potential duration of mitigation measures and how their end would be determined taking account that some mitigation measures may need to be in place for a long time after drought recovery
- provide clarification that the mitigation measures you are proposing are likely to be effective for the receptors that could be at risk from your actions
- set out how you will monitor the effectiveness of implementing any mitigation measures
- identify the details of any additional permits or approvals you will need

In addition, mitigation may be necessary to reduce impacts on other water users such as abstractors as a consequence of the action you are proposing, such as reduced river flows as result of you increasing abstraction or reducing a bulk supply agreement. You should consider how you intend to avoid, reduce and mitigate impacts on other abstractors and water users and provide details in the plan.

Where legally required, you **must** compensate for the adverse impacts where it's not possible to avoid, reduce or mitigate for them.

We also recommend that you consider opportunities to implement measures during non-drought conditions which will help build environmental resilience to drought. For example, river restoration to improve habitat quality which was previously degraded. You should also seek opportunities to help meet your Biodiversity duty to enhance biodiversity and promote ecosystem resilience in the Environment Wales Act.

You should discuss your proposed mitigation or compensation measures with Natural Resources Wales and/or the Environment Agency, Natural England (where relevant) and any other affected parties, especially before implementing them if required during a drought to ensure they are still appropriate as each drought is unique.

5.4. Updating your environmental assessments, monitoring and mitigation plans

We expect you to review and update your environmental assessments and associated monitoring and mitigation plans regularly. This will help to keep your environmental assessments up to date with the latest evidence and help reduce uncertainty. It is especially important to refresh these if you have had to prepare for or implement a supply side action during a drought event.

This will allow you to improve your understanding by incorporating datasets generated from during drought and post-drought (recovery) monitoring. This will enable you to ground truth likely environmental impacts against any actual observed impacts as well as establishing if any proposed mitigation was effective.

We recommend that you provide any updates with relevant regulators directly and via WRMP annual review process (as referenced earlier in section 2.5).

Section 6: Strategic Environmental Assessment and Habitats Regulations Assessment

You **must** carry out a screening to determine if all the stages of SEA and HRA are required. You should use the conclusions from the environmental assessment for each supply-side drought management action to inform your SEA and HRA, as appropriate. Information that is applicable to both processes should be identified to minimise overlap and repetition of effort and information. More information on SEA and HRA requirements is available in Appendix L.

6.1. Strategic Environmental Assessment

You **must** ensure that your drought plan meets the requirements of The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (Strategic Environmental Assessment)

All 'stages' of SEA are likely to be required where your drought management actions in your plan are likely to result in significant impacts on the environment.

You must consult with Natural Resources Wales and Cadw on the areas of SEA that affects Wales and the Environment Agency, Natural England and Historic England where it affects England. We recommend that you consult Natural Resources Wales and the other statutory bodies at all stages of SEA process and we can also advise you whether we consider that a 'full' SEA is required.

6.2. Habitats Regulations Assessment

You **must** ensure that your drought plan meets the requirements of the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations).

You **must** carry out a HRA to test if your plan could significantly harm the designated features of a European site alone or in-combination with other plans or projects. More information on designated sites is available at these links: Designated sites in Wales and England

Natural Resources Wales and/or Natural England are both a Statutory Nature Conservation Body (SNCB) for the HRA process and we advise that you consult us at an early stage to understand the requirements. If the HRA goes to Appropriate Assessment stage this becomes a **must** to consult SNCB as relevant**.**

You should also consult Natural Resources Wales and/or the Environment Agency in our roles as the competent authority for granting drought permits in Wales and England, they may use your HRA to inform their assessment of any applications.

More information of both SEA and HRA requirements is also available in Appendix L.

Section 7: Communication during a drought

Your drought plan should set out how you will communicate in a clear and timely way with your internal colleagues, customers, regulators, government, WDLG and/or NDG as well as other relevant groups from the onset, during a drought and post drought (recovery).

You should be in regular communication with these groups to advise them of:

- the current water resource position (current drought status)
- recent historic trends and the forecasted future situation (potential drought status)
- the likelihood and timings of any potential drought management actions being taken including temporary restrictions, drought permit and orders

You should consider early and proactive communications as the drought develops to allow for early warning of any actions including those that your customers need to take such as water efficiency measures. You should also consider the timings for engagement on matters such as peak demands especially linked to heatwaves during periods of dry weather.

7.1. Communications plan

You should develop a communications plan that sets out how you intend to communicate from the onset, during a drought and post drought.

Your communication plan should identify how you will:

- keep customers, neighbouring water companies, regulators, government WDLG and/or NDG as well as other relevant groups informed of:
    - how a drought is developing
    - how it might affect their supply (shape and contextualise the risks and impacts)
    - what you're doing to manage it
    - the actions they can take to help including becoming more water efficient
- consider the different data, information and reporting requirements of your customers (including vulnerable customers), regulators, WDLG and/or NDG as well as other relevant groups such as local resilience forums
- scale up your customer campaigns appropriately as dry weather takes hold. You should plan pre-emptive campaigns and plan to engage as early as possible with your customers
- consider what behaviour change tactics such as education and awareness, social influence or nudges you will take to encourage both individual and community response to take actions to voluntarily reduce their water use

- encompass a flexible and adaptive communications plan (agile communications) that promotes using varied and innovative communications channels to help customers reduce water use (household and non-household)

- work with regulators, government, WDLG and/or NDG, wider interest groups and partners including Consumer Council for Water (CCW) to co-ordinate and timetable communication activities including taking part in media briefings where necessary

- share communication materials with regulators, government and others (as above) including messaging on reducing water use, understanding cross border and other sector views on emerging drought issues

- communicate and consult in advance with customers about your intention to reduce demand and on your applications for drought permits and orders

- ensure information on your applications is easily accessible to customers on your website and customers are made aware of what is planned and how they can provide representations

Your plan should also set out:

- how your proposed communications activities are linked to your own drought triggers to cover all stages of drought
- how you identify if you will need a flexible and adaptable approach (agile communications) to maintain communications throughout or sooner than planned
- what geographical area (scale) these communications cover ensuring relevant to the audience you need to reach
- how you will allow for an appropriate lead-in time for any communication activities that are directly linked to the drought management action(s)
- the different audiences that specific communications apply to, the main messages and information you are sharing as well as how you will communicate the messaging (e.g., via social media, letter etc) with these audiences
- how you will ensure your communications are inclusive by design as set out in Ofwat's guidance Service for all vulnerability guidance - Ofwat
- examples of the information and messaging (including those that have proven effective in past campaigns) you are likely to issue such as water resource position, water efficiency advice or temporary use restrictions notice within your plan
- how you will make sure these activities are cost efficient for your customers

You should also consider the following recommendations from Reviewing Approaches for communicating Drought status And Risk (RADAR) project:

- what is the public message you are conveying – what are the current and likely risks
- language and tone used to explain the current position and how expand on definitions where necessary – such as drought status
- provide clarity on the timings of any further messaging

- routes to enable feedback from each audience (to avoid a one way conversation)
- that the information being provided is relevant, understandable to the audience and comes from a trusted source
- ensure that communication materials are openly available to those that need them as well as designed to pay attention to Welsh translation and accessibility requirements that are appropriate for audience
- including narratives that are emotive and that stimulate the required action from your audience
- ensure the right delivery method is chosen, e.g., social media, tv adverts, formal reporting etc
- consider frequency and timings of reporting – it is likely that specific communications will require continued reporting throughout the drought and during recovery to specific audiences

When preparing your messaging to your customers, you should seek to avoid any unintended negative consequences of any drought management actions. This includes temporary water use restrictions (e.g., TUBs) on health by promoting the need for customers to keep hydrated and continue to use water for drinking and basic hygiene needs. You should consult with relevant public health organisations for further advice on any public health messaging you should consider adding to your communications during a drought.

You will also need to set out what data, information and reporting you have agreed to exchange and at what frequency with regulators, government, WDLG and/or NDG as well as other relevant groups during a drought – you should agree this during pre-consultation. This is likely to be (although not limited to):

- water situation reports (e.g., reservoir storage levels)
- current water supply position (drought status)
- forecasting of potential near future water supply position
- information on actions you are taking and timings for when may have to escalate these (e.g., pre-consultation of drought permit or orders)
- information that you may require from regulators or others to aid with your decision making for example any data sets you may request from them and/or advance warning of any likely environmental actions such as environmental drought orders that may affect your supply

Communication activities

When planning your communications activities, you should consider following report conclusions

- Consumer Council for Water's report 'Understanding drought and resilience'.
- UKWIR report 'Drought and demand: potential for improving the management of future drought'
- Drought Risk and You (Dry) publications: aboutdrought-handbook_FINAL_2020-1.pdf
- UKWIR report: Managing through drought: code of practice and guidance on water use restrictions - 2023'

- Environment Agency's Chief Scientist's Group Review of the research and scientific understanding of drought - 2023.

A list of groups and organisations that could form potential audiences for drought communication activities is presented in Appendix M.

Co-ordinated communications with other companies

Where a drought affects more than one water company, NAV or water retailer within Wales, you should work with them to share information, best practice, and develop and implement joined-up communication activities.

Where relevant, you should work with other water companies, NAVs and water retailers that are linked to your triggers to ensure clear understanding of any drought management actions that are required, including temporary restrictions. Where practicable, you should share information in advance with the relevant company to ensure that essential core details around messaging and any notices is aligned to minimise the risk of confusion across customers affected.

When working with relevant water retailers – the retailer wholesaler group (RWG) does provide a forum to share best practice when it comes to non-household customers and is supported by MOSL. You should also consider the steps set in the market-codes by MOSL on how communications should take place during a drought between you (as the wholesaler) and any water retailers.

Where a drought affects customer supplies in more than three company's areas across England and Wales, a representative from Water UK will make best endeavours to act as a communication coordinator to ensure consistent up-to-date messages and briefings are issued across the water industry, and to liaise with key stakeholders.

You should look for opportunities to collaborate and communicate jointly with your regional group (if relevant) during dry weather and drought and include these in your drought plan. You should consider the benefits of this collaboration to your customers, the environment and other sectors in your region of this collaboration during drought.

Monitoring and evaluate effectiveness

You should set out in your plan how you will monitor and evaluate the effectiveness of your communication activities delivered to a range of audiences from the onset, during and after a drought, e.g., through customer feedback, website or social media traffic or a change in demand for water.

This information can then be used to help develop more effective communication plans for future drought events or even during a drought.

Section 8: Management structure

Your drought plan should set out the management structure you will put in place from the onset and during a drought indicating who has responsibility for what. You should include a communications lead who will be in charge of carrying out the activities described in the communications plan.

Suggested roles within a drought management structure include:

- drought manager
- drought communications lead
- public relations lead
- customer services representative
- technical staff, such as operational, demand management and water resources planning leads

You should include details of individual roles and responsibilities and any changes to the structure as a result of a worsening drought. You should also describe any management actions that are linked to drought triggers, such as how often the drought management team meets.

Section 9: End of a drought

As well as considering drought management actions during a drought, your plan should contain what you plan to do after a drought (recovery). Your drought plan should set out:

- the triggers you will use to identify the end of a drought
- the actions you will take as drought pressures are reducing
- the timings for the removal of your drought management actions and show how you will communicate this to regulators, government, WDLG and/or NDG, your customers and other relevant groups
- how you will review the actions taken and your communications from the onset, during and after the drought
- how you will report the learning and timescales for completing the review
- how you will inform any reviews being carried out by the regulators, government, WDLG and/or NDG as well as other relevant groups
- how you will make changes to your plan and operational response after a review

Identifying the end of a drought

We expect you to only declare the end of a drought after confirming with Natural Resources Wales, the Environment Agency, government, WDLG and/or NDG that the water resource situation and associated threat to public water supply has returned to normal operations.

A drought ends when:

- the risks to the security of supply and environment from drought are no greater than they would be during a normal year

- normal conditions have resumed for a specified period of time

You should use several indicators, rather than just one, to determine that a drought has ended. We recognise that the hydrological and hydrogeological conditions as drought pressures reduce can be complex and that identifying the end of a drought can be difficult to determine. Therefore, you can also use modelling to predict impacts of a return to dry weather and assess if there is still a risk from drought.

You should also indicate within your drought plan that when you declare that you have returned to normal in respect to your own water supply. If you are reliant on a bulk supply agreement – you should include whether your decision to declare the end of drought is linked to your supplier or your own assessment of indicators.

Reviewing your plan performance after a drought

Your drought plan should set out what you will do to review your performance from the onset, during a drought and directly after a drought. You should identify in your plan what information you will release as a result of the review (e.g., a 'lessons identified' report) and give a clear timetable for the completion of these including any relevant milestones (such as data gathering stage, discussions with regulators, WDLG and/or NDG and report writing stage).

You will also need to review your drought plan, environmental assessments, monitoring plans and mitigation measures (as relevant to the drought management actions you have implemented). You will need to understand:

- how effective your drought management actions are (including the effects of communication campaigns such as water efficiency, leakage management, temporary restrictions to water use and drought permit or order applications) and whether you should have taken any different actions
- whether the drought triggers were effective at identifying when to prepare for and implement drought management actions
- the actual environmental impacts of your actions including the use any monitoring results and appropriate analytical techniques
- the actual impacts of your actions including health and well-being
- how effective your monitoring was and if you would do anything differently in the future
- how effective any avoidance, mitigation or compensation measures you carried out were and whether you need to implement any changes in the future
- whether your estimates of reductions in water demand matched actual reductions (if available)
- how effective were your communications across a range of audiences
- how well you worked with other neighbouring water companies, NAVs and water retailers to implement drought management actions where required
- how effective was your data and information sharing agreements with regulators, WDLG and/or NDG along with other relevant groups
- how you will inform any reviews being carried out by the regulators, government, WDLG and/or NDG as well as other relevant groups and whether anything to consider for your own review

- any information you learned that may have changed your understanding of your drought risk – any longer term improvements to resilience may be needed and to reflect this in your next WRMP and/or business plan.

The environment often takes longer to recover from the effects of drought than it has taken for your supply. If you have implemented a supply-side drought management action, you should continue to carry out any relevant post drought monitoring for a sufficient period of time to understand how the environment is recovering. You should discuss your post drought monitoring and how you will report any outcomes from it to Natural Resources Wales and/or the Environment Agency and Natural England (if relevant).

You may also need to use the results of your review to update your WRMP, drought plan and your operational response where relevant. You will need to understand:

- what actions are needed to maintain the sources you used during the drought such as investing in them or reassessing yields
- if you need to make any changes to your demand forecast or longer term demand management strategy
- if you need to make any changes to your Levels of Service
- whether any investments you made as a result of the drought will affect other plans or programmes such as River Basin Management Plan objectives, the National Environment Programme (Wales) or Water Industry National Environment Programme (England)
- if any strategic investments made as a result of a drought event affect other plans or programmes e.g., where the implementation of an infrastructure improvement has been brought forward as a result of a drought event

We expect you to set out how you will make changes to your plans and operational response (via action/delivery plan) after a review. You should set out expected timescales for delivery, whether any of these require input from others such as regulators and how you will monitor progress of the change implementation.

We expect you to work with other water companies, regulators, government, WDLG and/or NDG at an early stage to help shape your review and action/delivery plan for making changes. In addition, you should invite any other people or organisations involved from the onset and during the drought to contribute to your review.

Appendices

Appendix A: Useful references

General – guidance, policy and legislation

Water resource planning guideline, Natural Resources Wales, Environment Agency, Welsh Government, Defra and Ofwat updated 2023.

Water Company drought plan guideline (wholly or mainly in England), Environment Agency – note this is being updated in 2024

The Welsh Government guiding principles for the development of water undertaker drought plans 2024

Drought Plan Direction (Wales) 2017: available from the Welsh Government

Drought Risk

Drought Vulnerability Framework UKWIR, report 17/WR/02/12, 2017

Demand Management

Water Use (Temporary Bans) Order 2010

Drought Direction 2011

Estimating the Water Savings for Baseline Water Efficiency Activities (09/WR/25/4) UKWIR

Drought and Demand: Modelling the Impact of Restrictions on Demand During Drought (07/WR/02/3) UKWIR

Drought and demand: potential for improving the management of future drought (07/WR/02/2) UKWIR

Understanding the impacts of drought restrictions (14/WR/01/13) UKWIR

Drought demand modelling study the Environment Agency (2014)

Estimating scenarios for domestic water demand under drought conditions in England and Wales (2018) Water Science and Technology: Water Supply.

Managing through drought: code of practice and guidance on water use restrictions - 2023' UKWIR

Review of 2022 drought demand management measures UKWIR (2023)

Efficacy of demand management measures Arup (2023) – which is available from Natural Resources Wales upon request

Water Efficiency Sub group guidance for retailer involvement in water resources planning.

Drought permit or orders / ESoR

Natural Resources Wales / Before you apply for a drought permit or drought order

HadUK-Grid – A new UK dataset of gridded climate observations. Geosciences Data Journal

UK Hydrological Outlook Portal

UK Water Resources Portal

Environment assessment

The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (Strategic Environmental Assessment)

Strategic Environmental Assessment Directive: guidance - GOV.UK (www.gov.uk)

Strategic Environmental Assessment in Wales

Consultation Bodies in Wales- Services and Standards for Responsible Authorities

Conservation of Habitats and Species Regulations 2017 (Habitats Regulations)

Habitats regulations assessments: protecting a European site

Environmental Assessment guidance for water resources management and drought plans UKWIR

Handbook for scoping projects: environmental assessment

Ecological Impact Assessment (EcIA) Checklist | CIEEM

Planning inspectorate advice note 7

Guidelines for the ecological impact assessment in the UK & Ireland

Annex V of the WFD Regulations 2017

Environment (Wales) Act Section 7 and OSPAR: Marine Species | DataMapWales (gov.wales)

Invasive Non-Native Species (INNS) Implications on the Water Industry UKWIR (2016) 16/DW/02/82

Invasive Alien Species (Enforcement and Permitting) Order 2019

Natural Resources Wales / Invasive alien species regulations

GB non-native species secretariat webpages

National Biodiversity Network

Habitats regulations assessments: protecting a European site - GOV.UK (www.gov.uk)

UK BAP List of UK Priority Species | JNCC Resource Hub

List of UK BAP Priority Fish Species (excluding purely marine species) (2007) (jncc.gov.uk)

Assessment of Salmon Stocks and Fisheries, England and Wales 2022 - GOV.UK (www.gov.uk)

Background: Salmon Stocks and Fisheries England and Wales in 2022 - GOV.UK (www.gov.uk)

https://apem-ltd.github.io/hetoolkit/

https://github.com/APEM-LTD/hetoolkit

Key aspects of Common Standards Monitoring (CSM) | JNCC - Adviser to Government on Nature Conservation

Communication

Reviewing Approaches for communicating Drought status And Risk (RADAR)

Consumer Council for Water's report 'Understanding drought and resilience'.

Drought and demand: potential for improving the management of future drought' UKWIR

Drought Risk and You (Dry) publications: aboutdrought-handbook_FINAL_2020-1.pdf

Environment Agency's Chief Scientist's Group Review of the research and scientific understanding of drought - 2023.

Appendix B: Glossary

Abstraction	The removal of water from any source, either permanently or temporarily.
Abstraction licence	The authorisation granted by Natural Resources Wales or Environment Agency to allow the removal of water from a source.
Area of Outstanding Natural Beauty (AONB)	Areas of Outstanding Natural Beauty (AONBs) are established under the Countryside Act of 1949, but unlike National Parks, AONBs are not created specifically for opportunities for recreation. However, recreation within AONBs is acceptable if it is consistent with the conservation and enhancement of natural beauty and the needs of agriculture, forestry and other uses.
Baseline	Information on the environment that details conditions prior to implementation of a drought action.
Bulk transfers	A legal agreement for exporting and importing water between a donor and recipient operator.
Control curves	A diagram or graph presenting drought triggers levels.
Civil Emergency (Emergency planning)	Civil contingencies are about preparing for and responding to a civil emergency (emergency planning), which is an event or situation which threatens serious damage to human welfare (including disruption to supply of water) or the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK. The Civil Contingencies Act 2004 sets out the legislative framework for responding to civil emergencies. More information is available here: Civil Contingencies & Resilience - Wales Safer Communities The Wales Resilience Forum supports good communication and improves emergency planning across local resilience forums and other agencies. Water companies produce emergency plans that set out how prepare for and respond to event or situation that threatens the disruption to supply of water such as rota cuts and stand pipes. These measures e.g., emergency drought orders set out in the emergency plan are not usually detailed within drought plans.
Demand management	The implementation of policies or measures which serve to manage control or influence the consumption or waste of water.

Drought management area	The area within a water resource zone (WRZ) that a particular drought management action(s) will apply to as specified.
Deployable output	The output of a commissioned source or group of sources or of bulk supply as constrained by: • environment • licence, if applicable • pumping plant and/or well or aquifer properties • raw water mains and/or aquifers • transfer and/or output main • treatment • water quality
Drought order	An ordinary drought order is an authorisation granted by the Welsh Ministers (for sites in Wales) or Secretary of State (for sites in England) under drought conditions which imposes restrictions upon the use of water (as defined in Drought Plan (Wales) Directions) and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis. An emergency drought order is the same as an ordinary drought order, which additionally is used: • to prohibit or limit the use of water for any purposes the water company considers appropriate • set up and supply water by means of rota cuts and stand-pipes or water tanks within its water supply area
Drought permit	An authorisation granted by Natural Resources Wales (for sites in Wales) or the Environment Agency (for sites in England) under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis.
Ecosystem Resilience	The capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future.
Environmental assessment (Report)	An assessment of environmental sensitivity and likely impacts from implementing drought management actions. The report that contains the supporting information arising from the environmental assessment.
Environmental monitoring plan (EMP)	The plan of how your company will address: • monitoring to fill knowledge gaps in the environmental assessment of the supply-side drought management actions

	• during drought monitoring • post drought monitoring
eNGOs	An eNGO is a non-governmental organisation in the field of environmentalism.
Environmental report	The report that accompanies an application for a drought permit or drought order. It should be based on the information from within the environmental assessment and updated with any additional information.
Exceptional Shortage of Rain (ESoR)	To be eligible to apply for drought permit or order – under 'Section 79A(1) of the WRA 1991 as amended by the Environment Act 1995' the reason for a serious deficiency in supply is an exceptional shortage of rainfall. There is no set definition to determine that an "exceptional shortage of rainfall" has occurred, because each drought, location and situation is unique. The case for Exceptional Shortage of Rain is presented at the time (using one methods set out in Appendix H) to help determine if lack of rainfall is 'exceptional.
Exceptions	An 'exception' to a water use restriction is where special allowance is given by a water company to customer, that allows a particular customer to continue using water for that particular use. Alternative and different terminology has been used in the past to describe exceptions, such as exemptions and concessions.
Feature	Features are the species, habitats and geological 'things' which are reasons why sites are designated. For example, they might be: • seals, butterflies, breeding birds • woodlands, lagoons, heathlands • fossils, landforms
Government	In this guideline Government refers to central Government, the Welsh Government and/or Defra.
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017. The domestic legislation which transposes the EU Habitats and Wild Birds Directives into UK law and replaces the Conservation (natural habitats &c) Regulations 1994, known as the Habitats Directive.
During drought monitoring	Monitoring that is undertake during the implementation of a drought management action.

Legislation	Relevant legislation to water company drought plans as either set out in Sections 39B and 39C of the Water Industry Act 1991, as amended by the Water Act 2003 in accordance with the Drought Plan Regulations 2005, the Drought Plan Direction (Wales) 2017, this technical guidance and/or the Welsh Government Guiding Principles.
Levels of service	The standard of service that water company customers can expect to receive from their water company, commonly setting out the frequency of restrictions that a company expects to apply to its customers.
Local Nature Reserve (LNR)	Local Nature Reserves are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. For a site to become an LNR it must have natural features of special interest to the local area, and the authority must either have a legal interest in the land or have an agreement with the owner to manage the land as a reserve. LNR prove to be useful not only to protect habitats and wildlife but increase people's awareness of their environment.
MOSL	MOSL is the market operator for the non-household water retail market in England that enables more than 1.2 million business customers to choose who supplies their water and wastewater services. It sits at the centre of the market, with access to data through the Central Market Operating System (CMOS).
National Drought Group	National Drought Group covers England. It is convened and chaired by the Environment Agency and consists of representatives from Regulators, Water companies, Farming Unions, Water UK, Drinking Water Inspectorate, Consumer Council for Water, Ofwat, Met Office and eNGOs.
New Appointments and Variations (NAV)	New appointments and variations allow companies to offer water, sewerage or water and sewerage services to a specific geographic area instead of the existing appointee. As a result, developers and large non-household customers can choose their supplier for these services. This allows them to negotiate for different service offerings or price levels, enabling them to enjoy the benefits that a more competitive market brings about. • A new appointment occurs when Ofwat appoint a company for the first time to provide water and sewerage services, water only or sewerage only services for a specific geographic area

- A variation occurs when an existing appointed company asks Ofwat to vary its existing appointment so that it can extend the areas to which it provides services.

National Nature Reserve (NNR)

National Nature Reserve - designation to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research.

All National Nature Reserves (NNRs) are legally protected as Sites of Special Scientific Interest (SSSI). Most are also declared under the Habitats Regulations as Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar (wetlands). These designations provide further legal protection.

Natural Resources Wales or Natural England selects and designates National Nature Reserves under the National Parks and Access to the Countryside Act 1949, or under the Wildlife and Countryside Act 1981.

Protected Area

Nature sites and areas can be 'designated', which means they have special status as protected areas because of their natural and cultural importance.

Protection means that these places:

- have clear boundaries
- have people and laws to make sure that the nature and wildlife are not harmed or destroyed
- can sometimes be used by people for recreation and study

Ramsar site

Internationally important wetland site. Wetlands are vital for many types of birds particularly waterfowl and Wales have some prime sites that are essential to the survival of many wetland plants and animals. Wetland sites can be areas of marsh, fen, peatland or open water; natural or artificial; permanent or temporary; with water that is fresh, brackish or salty. They can also include shallow areas of sea. All Ramsar sites are also Sites of Special Scientific Interest (SSSI).

Wetlands of international importance are identified by Natural Resources Wales (NRW) or Natural England, in collaboration with the UK Joint Nature Conservation Committee (JNCC), and Government. The Ramsar's have been designated over a number of years, from 1976 to the present day, and are on-going.

Receptor	A receptor is defined as a component of the natural or human environment that is measurably affected, such as fisheries by a proposed action and which forms an endpoint of a given effect pathway. Receptor is used in the context of source, pathway and receptor model in context of Environmental Impact Assessment.
SAC	Special Area of Conservation - Designated under the European Habitats Directive (1992).
SPA	Special Protection Area - Classified under the European Birds Directive (1979).
SPI	Standardised Precipitation Index is a statistical indicator comparing the total precipitation received at a particular location during a period of n months with the long-term rainfall distribution for the same period of time at that location.
SSSI	Site of Special Scientific Interest - A site given a statutory designation by Natural Resources Wales or Natural England because it is particularly important, on account of its nature conservation value.
Statutory consultees	Statutory consultees for water company drought plans as set out in the Welsh Government Guiding Principles. Specific consultees are also set out for SEA and HRA within their specific guidance.
Strategic Environmental Assessment (SEA)	The Strategic Environmental Assessment ensures significant environmental effects arising from proposed plans and programmes are identified, assessed, subjected to public participation, taken into account by decision-makers and monitored.
Regional Water Resources Plan	A regional group's long-term strategic plan for water supply and demand over 25 years.
Regulators	Regulators in the context of your drought plans that are • statutory consultee's for preparing and publishing your plan, SEA and HRA (if required) including Natural Resources Wales, Ofwat and/or the Environment Agency, Natural England, Cadw and Historic England • those that are advisers to Government on your plans, typically Natural Resources Wales, Ofwat and/or the Environment Agency and Natural England

	• those that will be checking compliance of your abstraction licences, operating agreements, responding any drought permit or order applications you may make to them or Government and ensuring that you are following your plans – Natural Resources Wales and/or the Environment Agency • those that you will be communicating with from onset and during a drought (typically as already listed)
Wales Drought Liaison Group	The Wales Drought Liaison Group covers Wales. It is convened and chaired by the Welsh Government and consists of representatives in Wales from Natural Resources Wales, Water companies, NAVs, Farming Unions, Public Health Wales, Local Authorities, Consumer Council for Water, Ofwat, Met Office and eNGOs.
Water Efficiency measure	Water efficiency is the practice of reducing water consumption (reducing water wastage, rather than restricting it). Specific measures can be taken to help household and non-household customers to reduce their daily water use. Examples of water efficiency including installing water efficient appliances and using water wisely in the home and businesses. measures include More information is available here: Saving water | Water UK.
Water Framework Directive Regulations (WFD Regulations 2017)	The Water Environment (Water Framework Directive) (England & Wales) Regulations 2017 (referred to as the WFD Regulations 2017) provide a framework for managing the water environment in England and Wales
Water Resource Management Plan or WRMP	A water company long-term strategic plan for water supply and demand for at least 25 years.

Water Resource Zone (WRZ)	The largest possible zone in which all resources, including external transfers, can be shared and hence the zone in which all customers experience the same risk of supply failure from a resource shortfall.
Water Supply & Sewerage Licence (WSSL)	Currently, non-household customers who meet the 50 megalitres of water per year (Ml/a) threshold requirement are able to choose a different supplier for water retail services reflecting the policy position of the Welsh Government for wholly or mainly Wales. All retailers who wish to participate in this market will have to apply for a WSSL with a restricted retail authorisation and/or supplementary authorisation allowing them to provide water retail services to eligible non-household Welsh customers and/or its own non-household premises. It will not be possible for a WSSL to provide sewerage services to these customers or its own premises.

Appendix C: Recommended structure for a water company drought plan

Non-technical summary

Executive summary

Introduction

- Overview of the purpose of your drought plan – link to process
- What's changed since the previous plan
- Water company specific information – including operational supply area, drought management areas if different.
- Baseline water resources situation and levels of service
- High level summary of links to WRMPs and other relevant plans
- Pre-draft and draft consultation details

Drought risk

- Assessment of drought risk (drought vulnerability)

Drought stages, triggers and testing

- Stages of drought
- Drought triggers
- Other triggers such as peak demands
- How you have tested your drought triggers (drought scenarios)
- Link triggers to drought management actions with lead-in timing information

Drought management actions

- Demand side actions
- Supply-side actions
- Environmental or other sector actions
- Agreements and arrangements bulk supplies and transfers
- Compensation arrangements

Environmental impacts (of each supply-side action)

- Environmental assessment report – link to SEA/HRA reports
- Environmental monitoring plan
- Avoidance, reduction and mitigation measures
- Compensation measures

Drought communications and management structure

- Communications plan including triggers for comms activities
- Joint comms with Regulators, WDLG (or NDG), neighbouring water companies and others
- Data sources, data exchange arrangements and reporting mechanisms
- Management structure including roles and responsibilities

Post-drought (Recovery)

- Triggers for end of drought
- Post drought actions
- How you will review your performance during and directly after a drought
- How inform other reviews such as Regulators, Government, WDLG and/or NDG
- How you will make changes to your plan and operational response following a review

Conclusions and summary of plan

Appendices

- WRZ summaries with relevant maps, graphs and diagrams – including supply network overview, triggers, drought risk, scenarios (testing your triggers) and specific drought management actions
- Appendix F Demand Management Actions
- Appendix G Summary of environmental assessment
- Environmental Assessment Reports – including monitoring, avoidance and mitigation measures (if required)
- SEA screening to define if 'full' assessment required. If required SEA environmental report
- HRA screening report and Appropriate Assessment (if required)
- Considerations of Welsh Legislation requirements
- Glossary / References

Appendix D: Example control curves and associated actions/communication activities

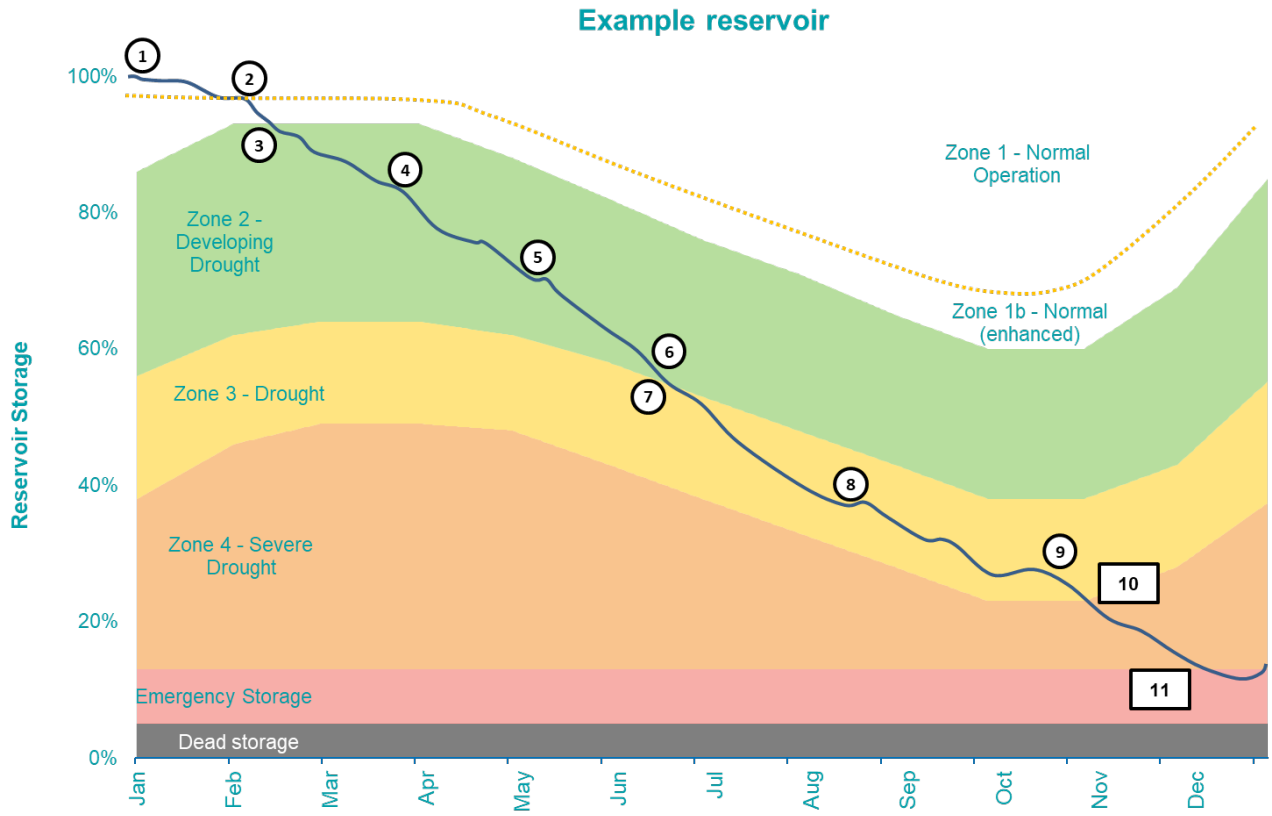


Figure 1. Example drought control curves with reservoir storage (dark blue line) linked to likely associated actions and communications activities explained in the table below*.

Zone 1 – Normal / *1b Normal (enhanced)*	**1**	Routine operations, forecasting and modelling of resources, routine water efficiency, leakage and pressure management. Use of existing sources.
	2	Early warning discussions (locally and strategic) with regulators, government, WDLG and/or NDG and others relevant groups
Zone 2 – Developing drought	**3**	Engaging with customers and others in line with comms plan, targeted media campaigns, increased water efficiency, voluntary water use restraint and increased leakage/pressure management actions
	4	Optimisation of resources, rescheduling planned maintenance and fast tracking any infrastructure improvements if possible
	5	Continued enhanced leakage control and further demand measures (such as pressure control management), enhanced engagement with regulators, government and other water companies regarding your plan for whether likely to implement existing standby sources and Temporary Use

		Bans (include preparing for these actions). Discuss with other water companies including NAVs and any water retailers changes to bulk transfers and/or actions required.
	6	Advertise TUBs
Zone 3 – Drought	**7**	Implement supply-side actions (except drought permits / orders), maximised demand management efforts, implementation of TUBs Prepare to apply for drought permit and orders, including pre-app discussions with NRW or Environment Agency and Natural England (if relevant)
	8	Formal drought permit / order applications with minor impacts to environment submitted and advertised. Hearing or inquiry held if needed.
	9	Implement drought permit / order applications with minor impacts to environment. Formal drought permit / order applications with moderate/major impacts to environment submitted and advertised. Hearing or inquiry held if needed. Prepare for and Advertise NEUBs
Zone 4 – Severe drought	**10**	Implementation of drought permits, drought orders with moderate/major impact to environment and NEUBs. Engage with regulators, government, Local Resilience Forums, Civil Emergency groups and public health boards if preparing for Emergency Drought Orders applications (standpipes and rota cuts)
Emergency storage	**11**	System failure. Implement Emergency Drought Order – move onto emergency planning. Frequent liaison with regulators, government, Local Resilience Forums, health boards (including Public Health Wales) and local authorities.

*note that this is indicative of when associated actions and communication activities may be initially prepared for and implemented. These actions once implemented are likely remain in place for remaining stages of drought until declared that no longer required.

At the time for the onset and during a drought, you will need to discuss with regulators, government, WDLG and other relevant groups with full justification if you consider that certain actions

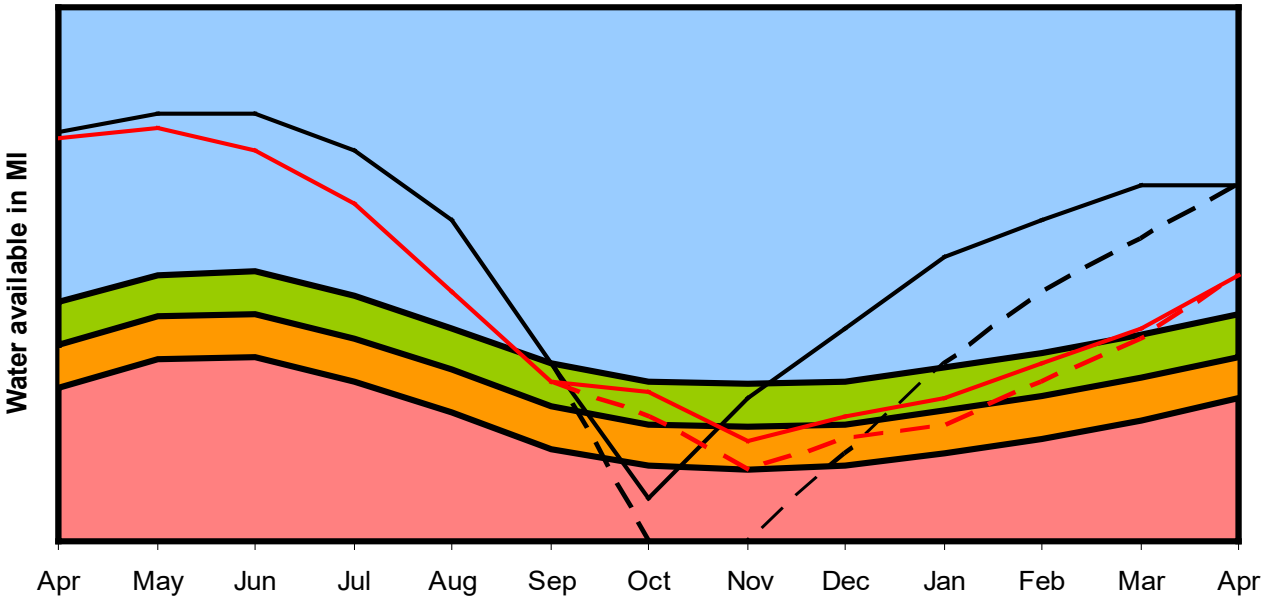
i) will not be effective if taken,

ii) other actions should be brought forward and/or

iii) if you are considering other actions not identifed in your drought plan.

Appendix E: Example control curve plus scenario lines

- Black solid line - severe one season drought scenario with supply-side actions (drought permit)
- Black dotted line - severe one season drought scenario without supply-side actions
- Red solid line - moderate one season drought scenario with demand-side actions (increased water efficiency messages and temporary water use restrictions (TUBs)
- Red dotted line - moderate one season drought scenario without demand-side actions



Appendix F: Drought management actions (demand)

Demand-side drought management action Name: example enhanced water efficiency initiatives	**Phase 1**	**Phase 2**
Trigger(s) (or preceding actions)		
How effectiveness of demand measure will be monitored Approach to monitor effectiveness. Where possible demand saving quantified as Ml/day and/or percentage reduction on peak week demand		
Location Area affected: e.g., Company, Demand Management Area, WRZ or sub-zonal level		
Implementation timetable Time from drought trigger to prepare for and implementation (including any consultation required), time of year effective, duration of action being in place		
Any permits or approvals required and constraints that apply Including details of liaison carried out with bodies responsible for giving any permits or approvals		
Risks associated with action Effects on the environment, social, economic factors, health and well-being, and uncertainties associated with timings, quantity, quality or cost. Link to your SEA findings (as relevant)		

Other considerations For example, how does this action affect your duties under the Environment (Wales) Act and your contribution to the Well-being Goals under the Well-being of Future Generations Act (as relevant)		

Appendix G: Supply-side drought management actions

Action Implementation Assessment	**Supply-side drought management action** **Name:** *example reduced reservoir compensation requirements* *N.B: Ensure that where the action affects other companies that each of your drought plans are consistent, e.g., bulk transfers.*	**Phase 1**	**Phase 2**
	Trigger(s) (or preceding actions)		
	Deployable Output or yield of the action Ml/day unless stated otherwise, including how you have arrived at this estimate (referencing any supporting information)		
	Location Area affected: e.g.: WRZ or sub-zonal level		
	Implementation timetable Time from drought trigger to prepare for and implementation (including any application required), time of year effective, duration of action being in place		
	Risks associated with action Effects on the environment, social and economic factors and uncertainties associated with timings, quantity, quality or cost. Link to your SEA findings (as relevant)		
	Other considerations For example, how does this action affect your duties under the Environment (Wales) Act and your contribution to the Well-being Goals under the Well-being of Future Generations Act (as relevant)		

Environmental Assessment: alone & in-combination	**Risk to the Environment:** (Major, Moderate, Minor (Negligible) or uncertain) Include whether there is a 'temporary' or 'permanent' risk to deterioration under WFD Regulations 2017 & '*Likely Significant Effect*' under Habitats Regulations (as relevant)		
	Summary of likely environmental impacts Include details for receptors of moderate and major sensitivity and minor sensitivity receptors from designated sites referencing any supporting information e.g., EAR, SEA and HRA (as relevant).		
	Level of confidence Confidence in the assessment of environmental risk (low, medium, high)		
	Baseline data and information used		
	Summary of additional monitoring requirements Include filling knowledge gaps, during and post-drought		
	Mitigation & Compensation measures		
	Impact on other activities e.g., fisheries, industry, other water users etc.		
	Any permits or approvals required and constraints that apply Including details of liaison carried out with bodies responsible for giving any permits or approvals		

Appendix H: Exceptional shortage of rain

Drought permit and orders for sites in Wales[7] all require evidence of an exceptional shortage of rain (ESoR) case for these to be determined and granted. In the case of a drought permit from a water company, Natural Resources Wales must be satisfied that a serious deficiency of supplies of water in any area exists or is threatened and the reason for that is an ESoR.

For a drought order, the Welsh Minister must be satisfied that, due to an ESoR, a serious deficiency of supplies exists or is threatened, or such a deficiency in flow or level of any inland waterway to pose a serious threat to any flora or fauna which are dependent on those waters, exists or is threatened depending on if it's a water company.

Given that each drought and each situation is unique, we have provided some principles that should be considered when you are assessing ESoR to accompany an application in Wales to either Natural Resources Wales or the Welsh Government. If you are a NAV that is aligning your timings for applying for drought order to restrict water use with your bulk supplier – you may choose to use some of the same information that they have used to develop a case of ESoR – as long as this is relevant to your operating area.

Principles to consider in the assessment of ESOR

Early engagement – the ESoR case and the technical approach you are considering should be discussed and agreed at pre-application stage with Natural Resources Wales.

Geographic extent of analysis - the analysis that you carry out should be relevant to the catchment area of your supply source(s) or if the source forms part of a larger conjunctive use water resource zone, then the deficit across the wider zone can also be considered. If the serious deficiency of supplies exists or is threatened at sub zonal area, then it would be more appropriate to consider this specific area rather than the whole zone.

You **must** provide justification for the catchment area chosen for your analysis, especially where it is not the catchment area directly relevant to the drought permit or order supply source. For example, a drought permit might be required to increase abstraction from a source where water is available, in order to secure supply in a different catchment that had experienced an ESoR/deficiency of supply. In this instance, the catchment for your analysis would be the catchment of the water supply area experiencing the ESoR.

Period of record –you should select a sufficient period of record for comparing the current data and against historical datasets using datasets that extend back as long as possible, such as HadUK datasets that go back to 1891.

Period of analysis – the period(s) of analysis for the rainfall deficit that you use to support the ESoR case should be carefully considered. For multi-month analysis, the start of the period of analysis should reflect the point at which the rainfall deficit begins to impact upon your water resource situation. This will vary across each permit or order site as some

[7] For sites in England, please refer to the Environment Agency's supplementary guidance for ESoR.

sources (e.g., river abstractions) are likely to be more susceptible to low rainfall in spring and summer. Whereas groundwater and large reservoirs are more reliant on the rainfall over the winter recharge/runoff period.

You will also need to provide justification for determining the end of the period of analysis. This includes providing graphical / data based evidence that indicates the rainfall deficit and the effects on your water supply situation.

Analysis of individual months and groups of months within the wider analysis period should also be carried out.

Rainfall data sets: The Met Office have recently produced a new gridded rainfall product (HadUK) which is available under an open government licence. Rain gauge data for specific sites on hydrometric network is also available from Natural Resources Wales or Environment Agency (cross border catchments) as well as products from UKCEH via their water resources portal.

You should consider using areal rainfall data for the catchment or area of interest. Catchment or areal rainfall totals have the advantage over individual gauges (location specific) as they provide a better estimate of rainfall averaged over a catchment and less likely to contain any gaps in the record.

Rainfall analysis

Types of analysis available to you are:

Percentage long term average rainfall - rainfall from the current period can be compared against what has been recorded historically for the relevant period(s) through calculating the percentage of the long term average (LTA).

The percent of LTA is unlikely to be sufficient to determine ESoR on its own as it does not in itself show how rare the rainfall total is. Therefore, should be used with the support from other approaches. You should also take care when interpreting the LTA results; a 70% LTA in one catchment may be more or less extreme than the same result in a different catchment and for a different LTA base period over a different period of record. If the rainfall in the area of interest is highly temporally variable, and of short duration then it would not be unusual to have a low percentage of LTA.

Rainfall ranking is a method used to directly compare the current period against the historic record. Cumulative rainfall totals are calculated for the period of analysis and compared against the equivalent period within the historic record. For example, if the period of analysis is May to October, the cumulative rainfall total for May-October should be calculated both for the current period and the same equivalent period in each year of the historic record. The rainfall total from each year is then ranked to determine the ranking of the current period relative to the historic context. This method is especially useful for understanding the severity of a prolonged dry weather/drought event relative to previous drought years in the historic record.

Rainfall probability ranking is widely used method to assign rainfall data into descriptive categories, for example ‘notably high’ or ‘exceptionally low’ with defined occurrence

probability. The method compares current data with the ranked historic dataset to determine which category the current data falls in for the time of year.

The Standardised Precipitation Index (SPI) is an internationally recognised (WMO 2009) method of characterising how the observed cumulative rainfall deviates from the climatological average. It is a statistical indicator that compares rainfall totals in a catchment over a chosen period with the long-term rainfall distribution for the same period.

We support the use of SPI as it's a method of rainfall probability ranking which also provides a % probability on the rainfall. We would expect any SPI analysis used under this method to show a range of accumulation periods (e.g., 1, 2, 3, 6, 12 months) presented rather than just the one that fits your purpose best.

Long duration rainfall frequency analysis - estimating the frequency of a long duration rainfall event can be a complex exercise and results need to be interpreted carefully to account for the uncertainty inherent within the analysis of extreme values. However, a robust analysis can be used to supplement other evidence.

Scenarios and Forecasts – it is generally appropriate to use short term weather forecasts to add quantitative data as part of the ESoR assessment. For example, to extend the data up to the end of the current month to enable analysis on monthly data to be undertaken. In addition, there may be situations where long term weather forecasts are appropriate for you to use to add qualitative supporting evidence.

The current short term, monthly or 3 monthly weather outlook alongside the Hydrological Outlook could be used to support the ESoR case.

Other meteorological and hydrometric measures - the legislation is clear that whilst the primary reason for the serious deficient of supplies must be shown to be an ESoR, secondary variables, such as temperature, soil moisture deficit, effective rainfall, river flows or groundwater levels, can also be relevant.

Statistics and analysis should clearly make the link between rainfall and these variables. However, these measures should not detract from deciding that the reason for serious deficiency is exceptional shortage of rain.

Soil moisture deficit (SMD) indicates the dryness of the soil. High SMD indicates that a larger amount of rain is required to wet the soil before the rainfall can significantly impact upon runoff, river flows or groundwater recharge and could subsequently impact on reservoir refill.

River flows response to a lack of rainfall will depend on the catchment's characteristics and storage. To understand the impact of the shortage of rain on river flows, current flow from relevant gauging stations can be plotted over time and compared to the flow typical for the time of year as well as to historic drought years.

Reservoir storage can be plotted over time for the period of analysis to understand whether the rainfall deficit has contributed to a deficiency in your supply. Storage levels can be compared against the historic minimum, maximum and drought years, reservoir control curves and drought trigger levels to understand if there is a deficiency in supply.

You will need to understand what drawdown relates to your water supply situation as result of ESoR and therefore outside normal operation. For example, there may have been drawn down not directly attributed to ESoR, and may have been due to:

- Significant artificial drawdown for maintenance (planned or unplanned)
- Reservoir safety inspections
- Pumping scheme issues
- Outage

Groundwater typically responds on longer timescales than surface waters and any drawdown as a result of the ESoR may take longer to emerge in the groundwater trends. Groundwater data from observation boreholes within the catchment area of interest and within groundwater bodies relevant to the water supply can be analysed.

High temperatures can exacerbate the impacts of an ESoR through increased evapotranspiration and soil moisture deficits, with subsequent impacts on runoff. You can use Standardised Precipitation Evaporation Index (SPEI) to account for increased evapotranspiration.

In addition, high temperatures particularly during the spring and summer periods can result in higher peak demand for water which can contribute to deficiency in your supply, such as increased reservoir drawdown. You will need to outline what demand measures have been implemented to manage this demand ahead of any application.

Effective rainfall refers to rainfall that is available to infiltrate into the soil or runoff after losses by evapotranspiration. Any analysis of effective rainfall should not detract from the analysis of rainfall data, from which the ESoR must be demonstrated.

Relationship to the serious deficiency of supply, or threat of – where a serious deficiency of your water supply exists or is threatened such as you have limited water available in storage or via abstraction to meet your customers demand, you will still need to demonstrate ESoR in order to apply for a drought permit or order. An assessment of the risk of supplies worsening can form part of the case but should not be the primary consideration.

Relationship to water supply system - your analysis should consider the supply system critical period and your customer levels of service in broad terms. It should show that the exceptional shortage of rain analysis is appropriate to the type of system, seasonality and deployable output.

Other sources of information – you should also consider previous inspector's decisions (if any), advice from technical colleagues and neighbouring regions / companies.

Presenting the data - summary of the evidence and plain English explanation of the ESoR case should be provided so that it can be understood by third party interests. The assessment should include suitable graphical evidence, for example charts, maps and tables, as appropriate to sufficiently demonstrate the ESoR case.

Appendix I: Environmental assessments

You **must** complete an environmental assessment for each of your supply side drought actions which meets the relevant legislative requirements for inclusion within your drought plan.

To carry out your environmental assessment we recommend that you use the

- UKWIR – Environmental Assessment guidance for water resources management and drought plans
- Handbook for scoping projects: environmental assessment
- Ecological Impact Assessment (EcIA) Checklist | CIEEM
- Planning inspectorate advice note 7
- Guidelines for the ecological impact assessment in the UK & Ireland.

I.1.1 Approach to your environmental assessment

Figure 2 set out the approach to environmental assessment and this section provides more information on each of the steps.

What evidence to use

Once you have identified each supply side action, to complete your environmental assessment you should understand what datasets you require and what is currently available to you. You should use the best available data, evidence and analysis methods.

Types of evidence that you can use include:

- observed historical data including reports/papers from others, such as academia
- observed datasets from on-going monitoring programmes including remote sensing and field surveys
- new, additional survey requirements to fill any knowledge / evidence gaps
- published designated status or expert judgement relating to the specific receptor type (species and habitat)
- evidence from other nearby sites which are similar to your site of interest
- modelled, simulated datasets and desk top studies

Establish the baseline

You should establish baseline conditions including hydrology, hydrogeology, geomorphology, ecology, fisheries and biodiversity which exist in the absence of your proposed drought action. The environmental assessment determines how the conditions caused by your proposed action will change in relation to this baseline to facilitate a clear understanding of the impacts of your action alone or in-combination with other actions. You

You should collect baseline data at the site of interest and you may need to compare your understanding with nearby sites for the parameter of interest, e.g., flow or ecological.

However, you should discuss its appropriateness for using evidence from nearby sites with either Natural Resources Wales and/or Environment Agency and Natural England

Your approach to establishing baseline conditions, including the spatial scope of your assessment should be agreed through discussion with Natural Resources Wales and/or the Environment Agency, and if relevant Natural England.

Identify likely changes in hydrology, hydrogeology and geomorphology

We expect you to demonstrate that you understand the likely changes your action(s) may have on the hydrology, hydrogeology and geomorphology of every water body within the spatial scope of your assessment, such as river, aquifer, wetland or lake area that they influence.

You should:

- identify the extent of the area affected by your planned action
- identify the drought conditions (e.g., drought scenario) which trigger your proposed action
- identify any physical changes to baseline conditions that your action(s) are likely to bring about. Specify their length including any expected lag time of any changes, severity and location in relation to existing natural and artificial flow, water level, riffles, river channel margins, riparian zones, weir crests, fish passes and fish screens).
- describe whether any physical changes to baseline conditions are expected to be short-term or long-lasting – e.g., what is expected duration of the likely changes
- describe the likely conditions in the absence of your proposed action
- describe the likely conditions with the action in place, compared to the same (or analogous) watercourse (or body) under natural conditions

Assessing environmental sensitivity

Your environmental assessments should include details on these environmental receptors:

- hydrology and hydrogeology (where appropriate)
- fish stocks/fisheries
- ecology, including ecological status
- water quality
- biodiversity – species and habitats
- INNS
- physical habitats and geomorphology
- ecosystem resilience
- human environment

A key part of your environmental assessments should be understanding how sensitive each environmental receptor of interest is to the likely changes in hydrology, hydrogeology or geomorphology (and associated habitat changes) caused by your supply side action. You will need to consider the designated status of any species and habitats that may be impacted by the supply-side action. Refer to the common standards monitoring (CSM) guidance in relation to assessing the condition of designated species and habitats.

The **sensitivity of the environmental receptor** is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. The sensitivity can be quantified via the following factors:

- Adaptability – the degree to which a receptor can avoid or adapt to an impact;
- Tolerance –the ability of a receptor to accommodate 'temporary or permanent' change without a significant adverse impact;
- Recoverability – the temporal scale over and extent to which a receptor will recover following an impact; and
- Value – a measure of the receptors importance, rarity and worth

Categorising the **environmental sensitivity** to changes will then help you identify the likely impacts of your actions on the environmental receptors of interest. For example, if a receptor is categorised as 'not sensitive' it is unlikely that your action will cause an adverse impact on this part of the environment.

You should categorise the sensitivity of your receptors of interest as:

- High
- Medium
- Low
- Not sensitive
- Uncertain

When assessing sensitivity of the species and habitats that are present in each reach or area affected by your action. You should consider:

- their sensitivity to any hydrological, hydrogeological, geomorphological and any other changes (such as temperature) your actions are likely to cause - e.g., habitat loss due to water level change, or exposure (drying out) of habitat, or degradation of aquatic and riparian habitats due to reductions in river channel connectivity
- the extent to which your actions will affect water body objectives required by the WFD Regulations (2017) - refer to the current UK Technical Guidance Group method statements to ensure you're using the correct assessment methods and tools
- if your actions will affect any measures included in RBMPs
- any designated species or habitat[8] and any species or habitat listed under Section 7 of the Environment (Wales) Act which are either within or make use of (functionally linked) the areas impacted by your action.
- the attributes of ecosystem resilience (see more information below), promoting ecosystem resilience in accordance with the Environment (Wales) Act
- the risk of your action spreading or introducing invasive non-native species
- the sensitivity of designated sites to your actions
- potential for in-combination and cumulative effects (e.g., when your action is combined with any other existing or proposed action and pressures affecting that reach or area).

[8] Including those designated under the Wildlife and Countryside Act 1981 or the Conservation of Habitats and Species Regulations 2017

To assess environmental sensitivity you need good quality, long-term environmental datasets. This is because long-term datasets are more likely to cover different flow, level or other changing conditions, including drought events, which will help you better understand how the environment at your site of interest responds to changing conditions. You can also use modelling tools such as water quality or hydro-ecological where available to help assess environmental sensitivity (see appendix K).

The Environment (Wales) Act 2016 – Section 6 Biodiversity and Resilience of Ecosystem Duty requires consideration of ecosystem resilience. This is "the capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future".

As part of your assessment, you should consider the DECCA framework. This includes the measurable attributes of ecosystem resilience: Diversity, Extent, Condition and Connectivity, and Other Aspects of ecosystem resilience: adaptability, recovery and resistance. Ecosystem resilience is an emergent property of these attributes and other aspects. Further information is available here: Ecosystem Resilience in a Nutshell 1: what is ecosystem resilience? (cyfoethnaturiol.cymru).

Identifying the likely environmental impacts

We recommend that to identify and characterise the 'likely' impacts on sensitive receptors you will need to determine:

- the magnitude of the impact (effect) over the lifetime of the proposal alone or in-combination (including the impact during and following decommissioning of any associated structures and/or ceasing the operation)
- the sensitivity of the environmental receptor type (species or habitats)
- the probability that the interaction will occur (likelihood)
- the determination and qualification of the level of impact - either major, moderate, minor (negligible) or uncertain.
- the level of confidence of all of the above (low, medium or high)

The **magnitude of an impact** provides a useful initial measure of the likelihood of an impact arising. Magnitude can be defined via four factors:

- Extent – the area over which an impact occurs
- Duration – the time for which the impact occurs
- Frequency – how often the impact occurs and
- Severity – the degree of change relative to the baseline

Traditionally, the **probability of an impact** occurring has also been considered in environmental impacts assessment process. The consideration of the following factors is equally relevant:

- the probability that an interaction will occur (capturing the probability that the impact will occur and also the probability that the receptor will be present)
- the spatial extent of the interaction; and
- the temporal duration of the interaction.

Therefore, the probability that the receptor will be present at the same time as the drought management action being implemented should be acknowledged. For example, the presence of migratory fish (and the risks to that receptor) maybe lower in the winter months compared to the spring and summer months).

The **determination and qualification of impact**

The significance of an impact, can be determined by a combination of the above measures of 'magnitude' and 'sensitivity' of the environmental receptor.

In practice, the determination and qualification of impact will carry a degree of subjectivity and expert judgement. This may be as a result of limited evidence/data on the sensitivity of receptors and/or the complexity of interactions that require assessment to determine the magnitude of change.

You should categorise the likely environmental impacts of your actions as either **major**, **moderate minor/negligible** or **uncertain**.

Level of confidence

You should allocate a level of confidence (**low, medium** or **high**) to your environmental assessments. This should be based on the quality of the datasets, evidence and analysis methods you have used to inform your assessment. You should identify sources of uncertainty in your assessment and set out how you plan to reduce these going forward.

Example: If one of your environmental assessments is categorised as low confidence because it is based on very limited datasets, you should set out how you will address filling any knowledge gaps.

Identifying any additional evidence/data requirements

It is unlikely that you will be able to adequately understand baseline conditions or identify likely (and actual) environmental impacts of your action or in combination with other actions, if your assessment is not based on appropriate datasets, evidence or expert judgement.

You should also set out how you will reduce uncertainty in any assessment or improve confidence level – for example due to very limited datasets. Any additional evidence and data including monitoring requirements such as new or additional surveys should be set out in your environmental monitoring plan (see Appendix J for more information).

I.1.2 Relevant legislation

The HRA and SEA requirements are in Appendix L – as these are processes in their own right to produce separate reports which are informed by the individual environmental assessments for each supply-side action.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 ("WFD Regulations 2017")

The above regulations sets an overall framework for managing the water environment, in particular it is focused on water quality, sustainable use of water, preventing deterioration of water body status and the protection and improvement of inland surface waters, groundwater and transitional and coastal waters. Amongst other things, the WFD Regulations 2017 are intended to contribute to mitigating the effects of floods and droughts.

The WFD Regulations 2017 relevant to drought plans are:

- Regulation 13: The environmental objectives
- Regulation 14: Environmental objectives - application of regulations 15 to 19
- Regulation 18: Temporary deterioration in status such as natural causes or force majeure
- Regulation 19: Defence against a breach of WFD Regulations 2017 objectives

Regulation 13 and 14 sets out the environmental objectives which include: - prevent deterioration of water bodies and to protect, enhance and restore each body of surface and ground water. The RBMPs set out how these objectives will be delivered.

The RBMPs were published in 2021 include:

- current status of all water bodies - classification results that form the baseline for assessing deterioration in water body status for the 6-year period from December 2021 to 2027
- water body status objectives
- protected area objectives
- a summary of the programmes of measures required to achieve those objectives

You can view the classification information and objectives for all water bodies in Wales at Water Watch Wales. For England and the Severn, refer to the Environment Agency's catchment data explorer.

The approach that you use to assess the potential for changes to water body status will depend on the environmental sensitivity of the quality elements monitored in each water body. You should consider the impacts of your actions on the elements that are used to determine water body status or potential and whether these impacts will cause deterioration or prevent a water body or Protected Area from achieving its objectives.

Deterioration is a drop in status class of any element set out in Annex V of the WFD Regulations 2017, irrespective of whether this causes a deterioration in status of the water

body overall. You should set out the approach you have taken for each water body affected and clearly describe whether changes are likely to be temporary or permanent.

If you believe deterioration is likely to occur as a result of your actions you should clearly set out what this will be and how you will mitigate it.

To assess potential changes to water body status, your monitoring should focus on the quality element(s) most likely to be sensitive to your drought actions.

Regulation 18

Regulation 18 applies where there is a temporary deterioration in the status of a water body resulting from 'natural cause' or 'force majeure' which is "exceptional" or "could not reasonably have been foreseen including the adoption of the appropriate indicators". In particular extreme floods and prolonged droughts or due to accidents which could not reasonably have been foreseen.

Your drought plan should cover all circumstances that can be reasonably foreseen. The drought plan **must** set out the conditions under which the circumstances are exceptional or could not reasonably have been foreseen including the adoption of the appropriate indicators.

Regulation 18 can only be invoked to allow temporary deterioration to water body status if all the conditions have been met. To meet these and provide justification – you should:

- identify all actions that could cause temporary deterioration using appropriate assessment methods
- describe why the circumstances are exceptional using hydrological data and any other relevant indicators
- justify why an action that causes temporary deterioration is preferable to the alternatives
- include details of planned mitigation to minimise the impacts of such actions before during and after
- set out what action you will take to restore the water body following the drought

Therefore, you should clearly identify all drought orders or permits that might potentially cause a temporary deterioration (as defined by Regulation 18) in your drought plan. In the event of a drought permit or order application, you will need to provide evidence that you have met the Regulation 18 conditions.

You should prepare as much of this information as possible in advance and make it available in your drought plan or provide detailed timelines in the plan for its completion if this is not possible. It is important that you carry out collection of this evidence in advance of any drought otherwise you risk delaying the application or even providing insufficient evidence to determine the application successfully.

Exceptional or unforeseen circumstances are likely to be particular to the geography of your supply area. Although the WFD Regulations 2017 highlight that 'prolonged' droughts are exceptional, it does not prevent the use of Regulation 18 in other circumstances (for example, acute non-prolonged droughts that are exceptionally severe). The Regulations

do not define ‘exceptional’ beyond that it relates to natural cause or force majeure. In relation to drought, exceptional could reasonably relate to shortage of rain, low river flows or levels, low groundwater levels or low reservoir levels where these are due to natural cause or force majeure.

As a water company you are responsible for all the effects of the measures you take to lessen the impacts of drought on people, environment and water supplies. You are not responsible for effects that are a result of natural causes. For more information on this see European Commission Common Implementation Strategy Guidance Document No. 20.

Regulation 19

Regulation 19 sets out that failure to achieve good status or to prevent deterioration is not a breach of the environmental objectives set out under the Regulations if this is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater provided that all the following conditions are met:

- all practicable steps are taken to mitigate the adverse impact on the status of the body of water
- the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required and the objectives are reviewed every six years

and/or one or both of the following:

- the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development
- the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option

Wildlife and Countryside Act 1981 & Countryside and Rights of Way Act 2000

A number of animals and plants receive legal protection under the Wildlife and Countryside Act 1981 as amended by the Countryside & Rights of Way Act 2000 (CRoW Act). The level of protection varies according to the species. A small number of species are also protected under the Conservation of Habitats and Species Regulations 2017 referred to as the Habitat Regulations.

Water companies must have regard to the provisions set out in the Wildlife and Countryside Act and CRoW Act. These include duties requiring you to take reasonable steps, consistent with the proper exercise of your functions, to further the conservation and enhancement of SSSI features, NNR and AONB.

You **must** give notice to Natural Resources Wales and/or Natural England, if you intend to carry out an operation likely to damage species and habitats of the SSSI. This includes operations which are outside of the boundaries of the site but could affect the site. If you proceed with an operation likely to damage against the advice of Natural Resources Wales and/or Natural England for England and damage to the site occurs, you may be required to restore the SSSI to its former condition.

You should adopt a similar technical approach (source, pathway, receptor) as used for assessing likely significant effect on European sites when you assess whether a drought action is likely to damage an SSSI.

Environment (Wales) Act 2016

As a statutory undertaker, if your site is within Wales, you are regarded as a public authority and therefore **must** have regard to Environment Wales Act 2016 and Section 6 and Section 7 under this act within your environmental assessment.

Section 6 - Biodiversity and resilience of ecosystems duty:

The Environment (Wales) Act 2016, Section 6, contains the biodiversity and resilience of ecosystems duty. Biodiversity is defined to mean the diversity of living organisms whether at the genetic, species or ecosystem level. The provision states that public authorities must "seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions."

Section 7 - Biodiversity lists and duty to take steps to maintain and enhance biodiversity. The Welsh Ministers have published lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales. These lists will be reviewed and revised. More information is available here Environment (Wales) Act Section 7 and OSPAR: Marine Species | DataMapWales (gov.wales)

For any English sites within your drought plan, you will need to take account of your duty under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, and the list of species and habitats published, in accordance with section 41 of the Act. You should also use the Defra published guidance for public authorities Biodiversity duty: public authority duty to have regard to conserving biodiversity.

Other locally designated sites and their species (e.g., local nature reserves) may also require specific consideration.

Well-being of Future Generations (Wales) Act (2015)

The Well-being of Future Generations (Wales) Act (2015), includes a goal to develop a more resilient Wales, which is described as "a nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)."

Fish and Fisheries

The principal fisheries legislation comprises the Salmon and Freshwater Fisheries Act 1975 (as amended), Water Resources Act 1991 and Environment Act 1995. Certain fish species and fish stocks are also provided in the Habitat Regulations, the Wildlife & Countryside Act 1981, Eels (England and Wales) Regulations 2009 and the requirements of the WFD Regulations 2017.

Fish that are protected priority species under the UK Post-2010 Biodiversity Framework as required under the Environment (Wales) Act 2016 Section 7 include salmon, trout, eel, lamprey and shad. These fish are particular interest features of a number of Habitats Regulations sites and SSSIs. Information on the distribution of priority fish species can be found here:

All species: UK BAP List of UK Priority Species | JNCC Resource Hub

Fish List: List of UK BAP Priority Fish Species (excluding purely marine species) (2007) (jncc.gov.uk)

Important fish stocks and fisheries include:

- **principal salmon rivers** – these are 23 principal salmon rivers in Wales, designated under Ministerial direction. These include the 3 cross border rivers, Wye, Dee and Severn. These rivers were nominated in a Ministerial direction and have been identified with Conservation limits (CLs) and Management Targets (MTs) and are used to give annual advice on stock status and to assess the need for management and conservation measures.

  For more information is available here:

  Assessment of Salmon Stocks and Fisheries, England and Wales 2022 - GOV.UK (www.gov.uk)

  Background: Salmon Stocks and Fisheries England and Wales in 2022 - GOV.UK (www.gov.uk)

- **main sea trout rivers** – there are 33 main sea trout rivers in Wales. These have been identified with Conservation limits (CLs) and Management Targets (MTs) and are used to give annual advice on stock status and to assess the need for management and conservation measures

- **trout fisheries** - those that support wild brown trout fisheries
- **coarse fisheries** - significant or popular river fisheries where angling matches take place; day tickets are sold; public angling is available (for example free fishing); or which are operated by angling clubs
- **other coarse fisheries** - those that support organised angling, but at a lower level than principal fisheries
- **rivers and stillwaters that support priority species** (for example lamprey, bullhead and shad)

- waters frequented by eels

Stillwater fisheries whose water levels may also be affected (for example, directly or indirectly connected to rivers or supported groundwater levels) **must** also be considered.

Information about location of sites that support important fish populations is available from Natural Resources Wales and/or the Environment Agency.

Your assessment for fish should include investigating the potential impact on the important fish stocks and fisheries including migrating fish and fish life stages (spawning, juvenile and adult) that are supported by the waters your supply-side action could affect. Potential impacts include:

- delayed/restricted migration
- impacts on fish-passes, by-pass channels and screens
- loss of habitat (in particular salmonid spawning or nursery habitat)
- fish stranding
- fish distress
- fish kills
- transfer of invasive non-native species
- impacts on angling (for example, closure of fisheries and/or cancellation of fishing events)

The fish species that are likely to be most sensitive to these impacts are those that migrate to and from rivers from the sea. These are: salmon, sea trout, eels, river and sea lamprey and allis and twaite shad. Freshwater species that undertake spawning migrations within rivers, including grayling, barbel, dace, bream and pike, should also be considered.

The Eel (England and Wales) Regulations 2009

The Eel Regulations provide powers to implement the EC Council Regulation (1100/2007) in the UK. Natural Resources Wales and/or the Environment Agency **must** take actions to halt and reverse the decline in the European eel stock, aiming to meet a target set for the number of mature adult eels leaving each river basin to return to spawn at sea. The Council Regulation specifically requires us to consider eel passage measures as part of the solution and the Eel Regulations provide powers to require measures to protect/improve eel passage. You **must** consider if the implementation of your supply-side actions could have an impact on eel passage.

Invasive non-native species (INNS)

Aquatic and riparian INNS have significant adverse social, economic and environmental impacts, and can cause the ecological status of WFD Regs water bodies to deteriorate or not achieve their ecological objectives. Additionally, you are at risk of committing and offence under the Wildlife and Countryside Act 1981 if your operations spread INNS listed in Schedule 9 of the act.

You also need to consider the Invasive Alien Species (Enforcement and Permitting) Order 2019 on the prevention and management of the spread of invasive alien species. It lists 66 species which are of special concern. 14 of these species are found in Wales. More information available here: Natural Resources Wales / Invasive alien species regulations

You must review whether your drought management actions (for example, bring back on-line un-used licensed sources) will risk spreading INNS and seek to avoid, reduce or investigate mitigation measures that you can apply.

INNS could be spread by:

- new or existing transfers (permanent or temporary) of raw water
- removal of existing impoundments
- alterations to existing impoundments that increase the ability of species to move upstream-for example, fish-passes and by-pass channels
- insufficient biosecurity at sources of water
- change in operation such as movement of staff, contractors and equipment between sites, and importing of materials to sites (for construction purposes)

Your plan should also consider measures that can be taken from the onset and during a drought to reduce the risk of spread of existing and/or the introduction of species (such as good biosecurity at all assets).

You should consider the need for a monitoring programme to allow understanding of INNS distribution and risk at the time of implementing your supply-side drought action. If a routine monitoring programme is not in place, the drought plan should include the lead in time and methods required to survey relevant locations for INNS.

The GB Invasive Non-native Species Strategy and more information on INNS and their impact can be found on the GB non-native species secretariat webpages.

I.1.3 What to include in an environmental assessment

We expect your environmental assessment report (EAR) to include the following as a minimum for each your supply-side drought management actions:

Summary

Details of the proposed action to maintain water supply. The location of the proposed site should be presented on a map within your environmental assessment report. Designated and important sites that may be affected by the action should also be included.

Proposal

Set out:

- the high level evidence to justify the proposed action(s); this should include the drought triggers and drought scenario relating to requiring the action (e.g., likelihood time of year and expected duration of use)
- details of the proposal including where there is a change to an abstraction or a discharge, it is from/to and which sites, water bodies and other abstractions (water users) will be affected
- any proposed and alternative measures such as different periods of abstraction or a lower hands-off flow (HoF)

Establish the baseline

- datasets available to you and how you will fill any gaps in knowledge
- describing the baseline conditions in the absence of the proposed action including hydrology, hydrogeology, geomorphology, ecology, fisheries and biodiversity

Assessment of the likely changes and environmental sensitivity

- the likely changes in hydrology, hydrogeology, geomorphology due to implementing the action
- the aspects of the environment including ecology, fisheries and biodiversity you have assessed and their sensitivity to these changes
- the importance of the site and receptor
- consideration of ecosystem resilience

Your assessment of the 'likely' environmental impacts

Set out your assessment of likely impacts over time (short, medium and long term) of your action. This should include:

- potential impacts on environmental receptors as stated in Appendix I.1.1
- likely impact on WFD Regulations 2017 water body status or potential and risk of deterioration (defined by biological, physico-chemical and hydromorphological elements) and compliance with the requirements of the WFD Regulations 2017, including Regulations 18 and 19.
- likely impact to designated species or habitats determine if more detailed assessment may be required, for example, an Appropriate Assessment for a European site
- likely impact on Section 7 Biodiversity Lists (species and habitats) and resilience of ecosystems duty under Environment (Wales) Act
- the likelihood of the impacts being 'temporary or permanent'
- the risk of spreading invasive non-native species
- potential for cumulative effects (e.g., when combined with other actions in your plan and other abstractions likely to be taking place in that reach or area over a period of time).

You should demonstrate you have considered the:

- likely impact on the well-being goals under Well-being of Future Generations (Wales) Act
- other likely impacts including other abstractors/water users, human environment, aesthetics, recreation, navigation, archaeology and heritage
- priority substances, priority hazardous substances and other pollutants

You should also allocate:

- an overall impact of major, moderate or minor/negligible or uncertain to each environmental receptor considered

Measures to avoid, reduce, mitigate or compensation

You **must** set out how you plan to avoid, reduce or mitigate any impacts of the action being taken.

Potential impacts identified within the environmental assessment report as moderate or major can be regarded as significant and must be avoided or reduced where possible before mitigation measures.

Specific details of these measures will be unknown until you implement the proposed action. However, potential measures should be included in your environmental assessment, including, where possible, the conditions that will trigger their use. You will also need to include where legally required, compensation measures for the impacts where it is not possible to mitigate for them.

Any permits and approvals required to carry out your measures **must** also be included in your environmental assessment.

Compliance and supporting evidence

Provide sufficient evidence to demonstrate your compliance with all relevant legislation. The evidence, datasets and technical information you have used to complete your environmental assessment can be set out in your appendices.

You should also set out:

- the process you used to select the datasets and evidence used to complete your environmental assessment
- the data analysis methods and tools you have used to complete your environmental assessment
- the main sources of uncertainty in your datasets, the level of confidence in your environmental assessment and how you plan to reduce any uncertainty
- reference any supporting reports or documents you have used

Environmental Monitoring

With each of your environmental assessments you should include an environmental monitoring plan which sets out the collection of data to complete baseline conditions assessment, during drought and post-drought (recovery) monitoring you will carry out. You will also need to assess the environmental impacts of your actions during and after a drought through your monitoring plan. You should also include any data required to fill gaps in your understanding when your assessment is uncertain or low level of confidence in it.

I.1.4 Levels of effort or reporting for environmental assessment

You **must** ensure that you comply with all relevant environmental legislation. In particular, you must ensure that where your actions may affect protected areas or designated sites that you complete environmental assessments in line with expectations set out in relevant legislation.

We recommend that the level of effort (resources) to complete each environmental assessment should be determined by using the 'likely' significance of impact rating (e.g., overall impact assessment) and the likelihood of use, as described in Table I1.5 below. You should also take into the level of confidence (for example to quality of data) with your environmental assessment.

Table I1.1. Level of effort for environmental reporting.

'likely' significance of impact rating	**Likelihood of use (linked to your drought triggers and scenarios)**		
	High (likely to be used)	Medium (not likely to be used for decades)	Low (not likely unless under extreme drought scenario)
Major (adverse effect on designated site and/or deterioration of water body status)			
Moderate			
Minor / Negligible			
Uncertain or Low confidence rating			

Key: amount of effort (resources) used to complete environmental assessment

Comprehensive
Standard
Minimal
To be determined

Comprehensive: where major impacts have been identified on designated sites and/or deterioration in water body status for the relevant receptors, we expect a comprehensive environmental assessment report to be completed taking account of all Habitats Regulations, WFD Regulations 2017 and/or CRoW Act requirements, environmental monitoring plan and avoidance or mitigation measures (with permits and approvals)

Standard: where there are moderate impacts including effects on section 7 species and habitats, we expect an environmental assessment report to be completed, environmental monitoring plan, avoidance or mitigation measures (with permits and approvals)

Minimal/Negligible: where there are minimal or negligible impacts identified on water body status and the relevant receptors including section 7 species list – you can choose to lower level of effort/reporting as long as there is medium-high level of confidence in your assessment. However, there needs to be sufficient information within the environmental assessment report to meet the requirements of the relevant legislation and any drought plan Directions. There are likely to be no further environmental monitoring or mitigation measures required.

To be determined: If your assessment is uncertain or that you have low level of confidence it in - additional evidence/data will be required to complete the environmental assessment and any additional assessment under the relevant legislation such as demonstrate compliance with the WFD Regulations 2017 and Habitats Regulations.

Appendix J: Environmental monitoring

J.1.1 Baseline data collection

Informing the assessment of likely environmental impacts

To understand the likely environmental impact of your supply side drought management actions you need appropriate datasets and information to assess baseline conditions. These datasets will help you understand the nature of the environment under 'normal' circumstances, along with establishing the sensitivity of the environment to changes that occur naturally compared to actual environment impact of your supply side drought management actions.

It allows you to compare the actual environment impact of your supply side action during and after a drought. Without adequate baseline monitoring you will not be able to do this.

The baseline data you use for your environmental assessment should be of a sufficient length to provide higher level of confidence in the results and fill any knowledge gaps. You should consider if your monitoring is an on-going activity as the environment is not static. Over time 'normal' circumstances may alter due to climate change, the implementation of sustainability changes or other changes (for example, water quality improvements). Ongoing baseline monitoring will help you better understand this and factor it into your environmental assessments.

J.1.2 During drought and post-drought (recovery) monitoring

Informing the assessment of actual environmental impacts

In your drought plan, you should identify the monitoring you will put in place to understand the actual environmental impacts of implementing your supply-side action during and after a drought event. This includes setting out your plans for carrying out during drought and post-drought (recovery) monitoring.

During drought monitoring will help you to assess the immediate environmental impacts of your action during a drought along with informing choices and implementation of mitigation measures.

Post-drought (recovery) monitoring will help you assess any longer term environmental impacts of, or recovery from, the implementation of your actions.

For drought permits and orders, you may also need to consider splitting your during drought monitoring into **pre-application** and **post-implementation** stages.

Combining appropriate baseline, during drought and post-drought (recovery) monitoring will help generate good quality datasets which you can use to ground-truth and improve your environmental assessments.

J.1.3 Environmental datasets and sources

You should tailor your environmental datasets and sources to the specific environmental assessment requirements for each of your supply side actions. However, some examples of key environmental datasets that you are likely to need include:

- ecological (for example, macro-invertebrates, fish, macrophytes, INNS, protected species and habitats)
- hydrological monitoring (for example flow and level)
- geomorphology surveys (including physical habitats)
- water quality
- temperature
- other supporting information (for example, fixed point photography)

Where you have very high quality, long-term datasets you could consider reducing the between year frequency of your baseline monitoring programme. You could also consider, where available, hydro-ecological modelling tools which could help supplement your baseline monitoring datasets. However, you should discuss the suitability of doing this with Natural Resources and/or the Environment Agency before implementing these changes to your monitoring programmes. They should be able to advise you on:

- understanding of the hydrology, hydrogeology, geomorphology, hydroecology, habitats, species, fish stocks and fisheries and overall environmental sensitivity (to drought) at sites likely to be affected by your action or combined with other actions
- availability of historical monitoring data, on-going and planned monitoring programmes
- the data types that are available such as .csv files
- the sufficiency of your planned monitoring programme and potential mitigation measures
- information on water body status, objectives and the programme of measures set out under the WFD Regulations 2017
- information on any designated species or habitat[9] which are either within or make use of (functionally linked) the areas impacted by your action
- information on the Section 7 Biodiversity lists of species and habitats under Environment (Wales) Act
- any other considerations such as INNS

You should consider the infrastructure and equipment that will be used to monitor in particular locations and receptors. These may include telemetric provisions together with datalogging in order that real time time-series data can be obtained. Other monitoring provisions may include the use of drones and remote sensing data to assess the nature of change.

[9] Including those designated under the Wildlife and Countryside Act 1981 or the Conservation of Habitats and Species Regulations 2017

J.1.4 Monitoring programmes and design

It is your responsibility to generate appropriate environmental datasets for you to adequately understand the environmental impacts of your supply side drought actions. To do this, you should implement your own bespoke environmental monitoring programmes tailored to the needs of your environmental assessments.

In particular, your monitoring programmes should be designed to help you to understand the difference between the impact on the environment of natural drought and the implementation of your supply side drought management action. You can only achieve this by planned, effectively designed monitoring programmes.

Your monitoring programmes should be tailored to the individual characteristics of each reach/area and will be informed by the knowledge of environmental sensitivity. You should consider the extent of hydrological, hydrogeological and geomorphological influence downstream of the proposed action as well as functionally linked habitat for migratory species under Habitats Regulations (if applicable). This will determine the extent of your survey reach/area.

Natural Resources Wales and/or the Environment Agency and Natural England can discuss with you and provide advice as needed on the locations and frequency of additional surveys over a specified timescale and which environmental parameters may be required to be surveyed.

Appendix K provides further information on additional environmental receptor considerations.

J.1.6 Level of Monitoring

In general, the level of monitoring required should be risk-based. Where you can clearly show through your environmental assessment that an action has a minor (negligible) impact to the environment (due to the type of action, or the lack of sensitive receptors) it is likely that no further monitoring is required beyond understanding the baseline conditions.

For higher risk sites (moderate to major impacts), you should ensure that during drought and post-drought monitoring is carried out:

- for European sites, data collected should be sufficient to demonstrate no likely significant effects or adverse effects to designated features (to inform your HRA)
- for SSSIs, NNRs and ANOB will need to be sensitive enough to pick up the likelihood of damage at the site
- for WFD Regulations 2017 monitoring sites, data collected should be used to assess any potential ‘deterioration’ in water body status or prevent the water body from achieving its objectives and if your proposal is compliant with Regulations 18 and 19
- your action presents other moderate to major impacts to the environment (such as through spreading INNS, damage to SSSIs or section 7 species and habitats).

You must also consider further environmental monitoring if:

- you do not have enough evidence/data to characterise and understand baseline conditions
- your environmental assessment of likely changes from baseline or impacts to the environment is uncertain
- there is a low level of confidence in your assessment and through discussions with relevant regulators its recommended you improve this

J.1.7 Regulator and other third party monitoring

You can supplement your bespoke monitoring programmes with datasets generated from regulators and other third party monitoring. However, you should not solely rely on these monitoring programmes and datasets as they will not have been specifically designed to understand the impact of your supply side drought management actions and are subject to change.

You should set out any third party monitoring you plan to use in your environmental monitoring plan. Natural Resources Wales, Environment Agency and Natural England will have various environmental monitoring programmes which you may be able to use to supplement your bespoke monitoring programmes. You should discuss the availability and relevance of these monitoring programmes with them. For example:

- For important river fisheries (e.g., those with Salmon Action Plans - Principal salmon rivers, main sea trout rivers, brown trout and coarse fisheries) Natural Resources Wales and/or the Environment Agency should hold data from annual quantitative surveys for at least the last five years. Although designed to establish variability over a longer timescale, these may provide an acceptable baseline. Where there is insufficient data or where data indicates a high level of variability, additional and tailored fish population monitoring may be required.

- For designated sensitive species or habitats, additional specific targeted monitoring may be required with relevant permits and approvals to carry this out. It is important to discuss these sites with Natural Resources Wales and/or Natural England. They are likely to hold existing data on the sites condition and status of designated species and habitats and be able to provide advice on monitoring protocol.

You should also consider other third party sources of environmental monitoring data which you could additionally draw on to inform your environmental assessments. For example, the National Biodiversity Network, Wildlife Trusts, Rivers trusts, biological records centres, angling clubs, and site managers.

J.1.8 Environmental Monitoring Plan

In your environmental monitoring plan, you should set out the details of the monitoring you will carry out. For your collection of baseline data, during drought and post-drought (recovery) monitoring, you should include:

- the existing environmental datasets you have and how the additional monitoring you plan to carry out will complement these, fill gaps of understanding and improve your environmental assessments
- the elements/receptors of the environment you will monitor
- the location (including maps), in-year and between year frequency of monitoring
- the sampling/survey methods
- any changes in approach between stages (for example, increasing the frequency of sampling during drought)
- who is responsible for carrying out this monitoring and how long you expect to do this for to establish sufficient datasets (e.g., timescales over months, seasons or years)
- how you plan to analyse the resulting monitoring datasets and the data analysis tools you will use

You will also need to state how you will use new monitoring data to improve you understanding of:

- the normal (non-drought) conditions at a site / water body
- the environmental sensitivity of a site / water body
- how you will assess the actual environmental impacts of your action during drought and post drought
- how you will use the data collected to re-evaluate and refine your drought triggers and mitigation measures (if relevant)

Your environmental monitoring plan should be agreed by Natural Resources Wales and/or the Environment Agency, and if relevant Natural England. This is to ensure that there is sufficient time to deal with any issues or gaps in understanding before a drought event occurs. The environmental monitoring plan should be updated when data from planned surveys are completed, and an annual light-touch review of the plan is recommended to ensure this information in included.

Appendix K: Environmental receptor considerations

You should use standard Natural Resources Wales and/or Environment Agency sampling / survey methods to collect monitoring data to support your plan, unless you can demonstrate that an alternative method is more appropriate.

You should consider sampling methods when using existing historical monitoring datasets. You should try to avoid comparing datasets collected using different sampling methods. As a minimum, you should assess the potential effect that different sampling methods across your datasets has on your conclusions. You should consider how you will analyse these datasets to inform your environmental assessments.

You should consider the following guidance on monitoring different environmental receptors.

Hydrology and Hydrogeology

You should consider:

- rainfall, river flows, groundwater levels, soil moisture deficit, reservoir storage, abstraction rates, velocities and levels associated with river transfers.
- for wetlands, determining the way a site functions hydrologically is likely to be necessary to determine the potential impacts arising from drought management actions (for example, whether the site is ground- or surface-water dependant and the sources of this water).

Fish stocks and fisheries

Understanding the impact of your actions on fish communities can be an important part of your environmental assessments. In particular:

- in waters designated 'important fish stocks and fisheries' or sites designated for fish species, you **must** evaluate the impacts of your drought actions on fish
- in waters that are not designated 'important fish stocks and fisheries', you should still consider whether it is important to understand the impact on the fish community. For example, fish may be more sensitive to drought (and thus any additional effects of a drought plan action) in upland rivers with natural morphology.

If you plan to undertake fish monitoring during drought, you **must** consider the potential impacts that this may have, in terms of causing additional stress to an already stressed fish community. We would normally expect that salmonids experience increased stress when water temperatures rise above 18°C. The risk of mortality progressively increases and at water temperatures exceeding 20°C. Adult salmon can survive temperatures of 24 to 27°C for a short time period. Critical temperature for adult salmon is often quoted as 23°C, although this can vary if there are other threats to water quality.

Monitoring during a drought should be discussed with Natural Resources Wales and/or the Environment Agency fisheries teams. You may support your assessment using hydraulic-habitat surveys and modelling of fish habitat, e.g., to quantify the effects of a river flow change on suitable habitat for a sensitive fish species. However, you should not rely exclusively on such studies.

Impacts on angling are more likely to be experienced at more extreme low flow/low water level conditions (when fisheries close, events are cancelled or anglers choose not to go fishing). You should assess and evaluate the impacts of your drought action on fishing activity. You should contact the local Fisheries team for any information on angling clubs and other organised angling such as Wye & Usk Foundation on an affected river/stillwater.

Bryophytes and Lichens

Although many bryophytes are drought-tolerant, surviving by closing down their metabolism, some species are desiccation-intolerant. Therefore, any statements you may make about bryophytes being able to withstand desiccation should be considered carefully.

Some bryophytes and lichens are good colonisers but others are unable to recolonise a site when lost. Careful consideration should be made before any statement about recoverability of bryophyte- and lichen-rich ecosystems within your environmental assessment.

If a waterbody your drought action is located within or connected to:

- runs through a SAC with Old Sessile Oakwood or Tilio-Acerion Annex 1 habitat, consideration should be given to links between flows and humidity alongside the river, and whether your actions would affect the woodland ecosystem and the bryophytes and lichens that may characterise that woodland
- is in a SSSI with bryophyte or lichen features, it will be necessary to examine whether those species are flow-sensitive or not; there are rare species of both lichen and bryophyte that require regular inundation, splash, spray or humidity

Macro-invertebrates

You should:

- use macro-invertebrates as the default biological quality elements for assessing environmental impact on flowing water habitats
- identify samples to Natural Resources Wales or the Environment Agency mixed-taxon resolution (River Invertebrate Classification Tool, RICT Taxonomic Level 5).
- sample three times a year (spring, summer and autumn) and generate data from non-drought (baseline), during drought and post-drought (recovery) conditions
- consider macro-invertebrates in lakes/reservoirs/wetlands that may directly or indirectly be affects by your action
- consider available macro-invertebrate data analysis tools, such as the Hydro-Ecology toolkit which enables the exploration of relationships between hydrological data, ecological receptor data (such as invertebrate data) and environmental variables. The Hydro-Ecology toolkit has been developed by the Environment Agency and is hosted by APEM externally (who have provided relevant training to water companies and other users). Summary information is here: https://apem-ltd.github.io/hetoolkit/ and the toolkit is here: https://github.com/APEM-LTD/hetoolkit

Macrophytes

In most circumstances macro-invertebrates and/or fish are generally more appropriate quality elements with which to assess and monitor the effects of your drought actions.

However, you should evaluate the impacts of your actions on the macrophyte community where:

- waters have been designated for their macrophyte community
- for rivers and standing waters which dry out (whether naturally or due to abstraction). This is because it is difficult to sample consistently the macro-invertebrate and fish communities during both wet and dry conditions.

Algae

- Diatom monitoring and datasets is unlikely to be required for most sites. However, there may be circumstances where diatom monitoring may be useful such as where your actions affect river flows below reservoirs.
- Monitoring of planktonic algae may be appropriate in lakes and larger rivers where there is a risk of algal blooms, whether nuisance or toxic.

Water quality

WFD Regulations 2017 classification data will provide information on current water quality water body status.

If deterioration in water quality is a potential risk associated with your action, then-historical data records should be reviewed as part of your assessment and additional monitoring should also be considered. Relevant elements might include temperature, dissolved oxygen, phosphate and ammonia. If Chlorophyll a data is available, it may also be relevant.

You can also consider water quality modelling approaches recommended by Natural Resource Wales and/or the Environment Agency, unless you can demonstrate that an alternative method is more appropriate.

Human environment

- socio-economic & health (includes nuisance), amenity & aesthetics, recreation, navigation, architectural or archaeological and heritage
- monitoring changes in aesthetics, archaeology and heritage can be achieved through visual checks and a photographic record at important locations
- well-being goals

Geomorphology

You should assess the impact of your proposal on river geomorphology. Your geomorphology assessment should be part of your environmental assessment. It will:

- characterise the baseline physical forms and processes (geomorphology) of the river

- use this baseline information to design a suitable monitoring programme that can identify any impacts during drought and post-drought

You should consider the following when carrying out a geomorphology assessment:

- There is no standard method for assessing geomorphology. You should discuss your proposed approach and with Natural Resources Wales and/or the Environment Agency geomorphologists. They can advise on the suitability of your proposed approach. They can also advise on the availability of any suitable datasets to inform your assessment.
- Understanding typical baseline physical forms and processes of the river is key. Hence, your assessment approach must be robust, because this is the reference point from which any geomorphological changes can be monitored and measured. Ensure you clearly explain your approach in your report.
- The baseline characterisation and monitoring design should incorporate representative river reaches.
- The method(s) used must be repeatable, to enable any geomorphological changes during and post-drought to be identified.
- Geomorphology supports ecology. Therefore, an integrated and multi-disciplinary approach is essential. You should demonstrate how geomorphology links to other aspects of your environmental assessment and monitoring programme, such as fish.
- The assessment should be focussed on relevant receptors identified by understanding ecological sensitivities and requirements. For example, river channel areas that are typically, persistently wet, to support life cycles of both aquatic and riparian species.
- As a minimum you should take photographs, either from the ground or using aerial images captured by drone survey. Establish fixed-point locations where they can be repeated over time. This can help to characterise and monitor the river, but photographs alone are unlikely to be sufficient to understand the importance of physical receptors present, or the magnitude of impact to typical physical processes.
- Other assessment techniques might include Fluvial Audit, topographic and sediment surveys.

Table K1.1 below summarises potential geomorphological changes in response to drought. You should consider these and associated receptors / indicators of change in your assessment.

Table K1.1. Potential geomorphological changes to consider in your assessment

Impact	Observations to consider and field evidence to gather
Drier conditions.	**Lower water levels, slower flows, wetted perimeter is narrower.**
Reduced lateral connectivity	The river has ‘shrunk’ within the channel. There is a disconnection between the flow, the channel and adjacent floodplain. Marginal channel areas including

	the riparian zone, back waters, and secondary channels, can become isolated. The 'shrinking' of a river is an early indication of reduction in flow.
Reduced longitudinal connectivity	Flow could become fragmented. River bed forms and receptors that provide habitat, such as riffles and marginal lateral areas, could become dry. Isolated channel areas could become ponded. In steeper channels, step-pools and cascades could become unlinked. There may be reduced or no flow over weir crests, or fish passes, with upstream impoundment.
Reduced vertical connectivity	Dessication (drying) of the river bed subsurface (the hyporheic zone). This is an important refuge for some aquatic ecological species. Drying, cracking and fissures may occur in channel areas that are typically persistently wet. This is often a later impact in response to reduced connectivity.
Siltier conditions.	**Sediment deposition predominates.**
Increased siltation	Deposition of fine (silty and sandy) sediment on the channel bed and margins which clogs the river bed surface, and interstitial spaces (between river bed gravel and cobble particles). There could be an extensive cover of fine sediment, which is not usually present. Consider if the depth and area of deposition is greater than the typical variation in fine sediment present on the river bed.
Increased bank erosion – increase in sediment supply	When water levels lower, river banks may become exposed and dry out. Steep, exposed banks with easily erodible properties and unstable profiles may collapse. This collapse may introduce an additional source of sediment that contributes to depositional conditions. If drought conditions persist for long enough, the newly deposited material could become vegetated.
Stable conditions.	**Reduced sediment transport.**
Increased river bedform stability	Channel bedforms such as gravel bars 'armour' and or 'pavement' may develop. This increase in stability can enable vegetation to colonise and further reinforce their stability. Eventually marginal or lateral stable areas may become terrestrial. Previously submerged fish spawning areas may be exposed.
Reduced bank erosion – loss of a coarse gravel supply	Dry bank faces and a reduction in active erosion of coarse sediment River banks with a complex and stable profile may become vegetated and terrestrial.

Appendix L: SEA and HRA requirements

Environmental Assessment of Plans and Programmes Regulations 2004 – Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a process that provides for a high level of protection of the environment and contributes to the integration of environmental considerations into the preparation and adoption of plans, programmes and strategies (PPS) with a view to promoting sustainable development. These aims are consistent with the Well-being of Future Generations Act 2015 and the Environment (Wales) Act 2016.

SEA originates from European Directive (2001/42/EC), which has been transposed into English and Welsh Regulations, The Environmental Assessment of Plans and Programmes Regulations 2004 (SI 1633 English Regulations / SI1656 Welsh Regulations).

SEA stages

The stages in the SEA process are:

- **screening** to determine if SEA is required - the criteria for determining the likely significance of effects on the environment are set out in Schedule 1 of the SEA Regulations
- **scoping** to identify environmental issues - setting the context and objectives, establishing the baseline, key issues and trends and deciding the scope e.g., method of assessment (and consulting on it)
- **assessment of effects, consideration of alternatives and mitigation** – assess the likely significant environmental effects of the plan 'alone and in-combination', consider reasonable alternatives, design mitigation for negative effects and identify wider benefits
- **preparing the environmental report (ER)** [10] - provide findings of the assessment of significant effects and describe reasonable alternatives
- **consultation and engagement** - consulting on the SEA environmental report, which usually in parallel to the draft drought plan consultation
- **refining and finalising** – review consultation responses, summarise how the consultation have influenced the plan e.g., changes from draft to final version
- **implementation and monitoring** – finalise and implement monitor proposals for the effects and produce a statement

Other SEA considerations

The development of your plan may be influenced by other internal or external plans, programmes or by environmental protection objectives such as those laid down in policies or legislation. Key Welsh legislative requirements, policies and plans that must be woven into your SEA objectives where it affects or within Wales are:

[10] Note that the environmental report in this context is for the SEA and is separate to the report required for a drought permit or order application.

- Well-being Goals
- Section 6 Biodiversity Duty to promote ecosystem resilience, by maintaining and enhancing biodiversity
- Area Statements
- Well-being Plan

An SEA **will be required** if it is determined that the plan is likely to have a significant effect on the environment.

An SEA **is not required** if it is determined, in consultation with consultation bodies, that the plan is not likely to have a significant effect on the environment. You will need to prepare a statement of your reasons for this determination within your plan.

SEA Consultation

You **must** consult these consultation body's Natural Resources Wales and Cadw where you plan affects Wales and if it affects England also Natural England, Historic England and the Environment Agency.

The SEA regulations stipulate that consultation and engagement is a statutory requirement during scoping and the Environmental Report (ER) stages. You must seek the consultation at this stage helps to ensure that the SEA influences your drought plan development and the resulting ER will be robust enough to support the draft plan when published.

However, it is good practice to undertake consultation bodies and wider engagement with stakeholders (informal) throughout the development of your SEA (at all stages).

The environmental report is specific to the SEA requirements and is separate to the environmental assessment's reports produced for each of the supply-side actions – although outcomes from the latter reports informs the SEA. The SEA should be published for consultation in parallel with the period of public consultation of the draft drought plan. This should set out the significant environmental impacts, and identify measures to mitigate any significant adverse impacts, and enhance any positive impacts. We would also expect you to demonstrate how previous advice submitted by consultation bodies during the scoping stage has been considered.

Useful documents for SEA are as follows:

Guidance on the requirements can be found in the UK Water Industry Research report on *Strategic Environmental Assessment and Habitats Regulations Assessment - Guidance for Water Resources Management Plans and Drought Plans*. In addition:

- Strategic Environmental Assessment Directive: guidance - GOV.UK (www.gov.uk)
- Strategic Environmental Assessment in Wales
- Consultation Bodies in Wales- Services and Standards for Responsible Authorities

Useful baseline data sources

Baseline data can be drawn from a wide variety of sources. Prior to sourcing data, consider what environmental effects are most likely based on the scope of the SEA. There are a wide variety of sources of environmental baseline data, including:

- State of Natural Resources Report (SoNaRR)
- Area Statements
- Wales Environmental Information Portal
- Water Watch Wales
- Welsh Government publications and monitoring
- Other environmental assessments
- Consultation Bodies
- Other public bodies, for example Public Health Wales
- Non-government organisations and environmental groups

Habitats Regulations

Special Areas of Conservation (SAC) or Special Protection Areas (SPA), Ramsar sites (together referred to as European sites) all require a high level of confidence for decision making due to their designated status. They may require a more detailed appropriate assessment depending on the effects on their designated features (species and habitats).

The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations) requirements protect European sites from developments and other activities which may harm them directly or indirectly.

Habitats Regulations Assessment (HRA) is undertaken by the relevant competent authority. You are the competent authority in relation to your drought plan and have an obligation to assess you plan (and any supply-side actions within it) under the Habitats Regulations.

The following sections explain the first two stages of the HRA requirements.

Stage 1: Screening

You are responsible for deciding whether or not your drought plan (and the proposal within it) should be made subject to an appropriate assessment. This is the case if the proposal:

- is a ‘plan or project’ (unless it is directly connected with or necessary to the conservation management of a European site)
- risks having a significant effect on a European site(s), alone or in combination with other plans or projects

Normally screening should involve a simple assessment to check whether a more detailed appropriate assessment is required.

Identifying potential effects

Before deciding whether effects might be significant, you should assess the potential effects of your plan or project on a European site. An ‘effect’ would include anything which would have an impact on a European site. Temporary, permanent, direct and indirect effects need to be considered. A plan or project does not need to be located on a European site in order to affect it. Generally, the closer it is to a site, the greater the chance it may affect the site.

We expect the assessment to consider effects on mobile designated features while they are outside their designated site and any non-designated habitat that supports designated features of the site.

Adapting proposals to avoid significant effects

Screening for likely significant effect **must not** take mitigation measures into account. These can only be considered as part of an appropriate assessment (Stage 2). Mitigation measures are those introduced specifically for the purpose of countering likely effects on European site interest features.

At this stage, you should consider adapting proposals so as to avoid any significant effects to a European site.

Check whether there may be a 'significant' effect

Likely significant effect' only includes effects which would undermine a European site's conservation objectives. Effects which would not undermine a site's conservation objectives would not be considered to be 'significant'. Likely significant effect' is a lower threshold of assessment than 'adverse effect on the integrity' of the site. The impacts of a plan or project may be screened in for 'likely significant effect' but be proven not to result in 'adverse effect on the integrity' of a site at appropriate assessment stage. The threshold of the likelihood of a significant effect happening **must** be applied on a precautionary basis.

A likely significant effect is for example:

- altering community structure (species composition)
- causing ongoing disturbance to qualifying species and habitats
- causing direct or indirect damage to the size, characteristics or reproductive ability of populations of qualifying species, or species on which they depend, on a site
- causing a reduction in the resilience of the features (species and habitats) against other anthropogenic or natural changes. For example, the ability to respond to extremes of environmental temperature.

Stage 2: Appropriate Assessment

An appropriate assessment **must** be completed if you:

- decide there's a risk of a likely significant effect on a European site
- do not have enough evidence to rule out a risk

The principal purpose of the appropriate assessment is to inform your decision as the Competent Authority on whether you can conclude that your plan would not have an adverse effect on the integrity of any European site. You must be able to rule out all reasonable scientific doubt, that your plan or project would not have an adverse effect on the integrity of any European site.

You should take the 'integrity' of a European site to mean the coherence of its ecological structure and function across its whole area (considering functional linkage), that enables it

to sustain the habitat, complex of habitats and/or the levels of populations of the species for which the site is (or will be) designated.

The assessment should normally include consideration of detailed information including:

- identifying the site's qualifying features, conservation objectives and conservation status of each of the qualifying features that might be affected
- identifying what each potential effect of the plan or project is and what aspects of the plan or project causes such effect, and consideration of any in combination effects
- identifying how each potential effect could have an impact on each of the site's conservation objectives
- assessing the scale and seriousness of potential effects, including their scale, extent, timing, duration, reversibility and likelihood
- assessing effects over the whole lifetime of the plan or project
- assessing the likelihood that the effects might occur and how the risks are proposed to be mitigated and managed
- identifying the degree of certainty which underpins the assessment of effects
- how mitigation measures would be implemented and monitored and how long for
- the level of success you expect from the mitigation measures and detail what changes you would make if monitoring demonstrated that the mitigation measures may fail
- deciding whether or not there is an adverse effect on integrity of the site(s)

Your appropriate assessment should be appropriate, i.e., it only needs to assess impacts on the particular interest features on specific European sites that have been identified as having a likely significant effect, or where it is uncertain, and only assess them in as far as they might undermine their conservation objectives.

It is our advice that you should complete any appropriate assessments as part of your plan and that it should not be deferred until the time of drought permit or order application (during a drought). Therefore, it is important that your HRA is started as early as possible during preparation of your plan as this gives the HRA the greatest opportunity to influence the plan and therefore avoid or minimise impacts on European sites. HRA should be seen as an iterative process throughout the plan's development, which, when impacts are identified, enables changes to be made to your plan, before being re-assessed.

You **must** consult the relevant SNCB (Natural Resources Wales and/or Natural England) on your appropriate assessment and you should provide your draft appropriate assessment. You **must** consider the advice you get back.

The appropriate assessment is specific to the HRA requirements and is also separate to the environmental assessment's reports produced for each of the supply-side actions – although outcomes from the latter reports informs the HRA. The HRA should be published for consultation in parallel with the period of public consultation of your draft drought plan.

Stage 3 Derogation

If your proposal fails the integrity test because you cannot rule out an adverse effect on site integrity, the plan/proposal cannot be adopted unless it can pass 3 legal tests and be granted an exception, known as a 'derogation'. In certain circumstances, you can allow a proposal that's failed the integrity test to go ahead. This is known as a derogation.

You **must** first have carried out an appropriate assessment and followed three sequential derogation tests:

1. There are no feasible alternative solutions to the plan or project which are less damaging
2. There are "imperative reasons of overriding public interest" (IROPI) for the plan or project to proceed
3. Compensatory measures are secured to ensure that the overall coherence of the network of European sites is maintained

In the event of your plan failing the integrity test you should provide Natural Resources Wales with a timetable for how and when you plan to meet the three Derogation Tests, as well as to agree what narrative is included within the plan itself.

Further guidance is available in Habitats regulations assessments: protecting a European site

Competent authorities in Wales should contact the Welsh Government:

Biodiversity Policy Team
Land Nature and Forestry Division
Welsh Government
Rhodfa Padarn
Aberystwyth
SY23 3UR

Email: **bio.diversity@gov.wales** add 'FAO Welsh Ministers: IROPI opinion request' to the subject field of your email

Competent authorities in England should first **consult the Department for Environment, Food and Rural Affairs**. Add 'FAO Secretary of State: IROPI opinion request: protected European sites policy' to the subject field if you use email.

Appendix M Audiences

This list is not exhaustive and includes a sample of relevant audiences.

Group	Organisation
Domestic and commercial customers	Customers (household and non-household)
	Citizens Advice Bureau
Regulators/Government	Natural Resources Wales and/or the Environment Agency/Natural England
	Ofwat
	Welsh Government
	Defra
	Drinking Water Inspectorate
	Consumer Council for Water
Drought Groups	Wales Drought Liaison Group, National Drought Group (England)
Civil emergency groups	Local Resilience Forums, Severe Weather group, Fire & Rescue Service
Environmental and other relevant interest organisations and groups	Local wildlife groups, campaign groups and environmental NGOs
	Friends of the Earth
	WWF
	RSPB
	Wales Environment Link
	Afonydd Cymru, Individual Rivers Trusts

	Angling Trust (England), Angling Trust Cymru
	Local fisheries bodies and groups
	Waterwise
	Cadw
	National Trust
MPs and Local Authorities	National Parks
	Councils
Representative bodies	MPs, MSs
Community based institutions and organisations	Confederation of British Industry, National Farmers' Union (NFU) and NFU Cymru, Farmers' Union of Wales, Chambers of Trade and Commerce, Countryside Landowners and Business Association, Horticultural Trade Association
	Community Councils
Public services	Town Councils, Public Service Boards, Public Health Wales, Public Health England, Water Health Partnership (Wales)
Press and media	TV
	Radio
	Newspaper
	Internet based
Water Companies	Neighbouring water companies, NAVs and Water Retailers
Sports and interest groups	Angling clubs

	Canoe clubs, Wild swimming clubs
Waterways and navigation	Port authorities
	Canal & River Trust