
DROUGHT PLAN 2027

Main report
March 2026

**NORTHUMBRIAN
WATER** *living water*

DOCUMENT CONTROL SHEET

Report Title	Northumbrian Water Draft Drought Plan 2027
Authors	Beth Townsend, Juliette Maxam, Katherine Fuller, Liz Corbett, Liz Wright, Ian Walker, Luke Robinson, Charl Roos, Rebecca Richards, Andrew Blenkarn, Ben Moore.
Previous Issues	Northumbrian Water Drought Plan (2022) Northumbrian Water Drought Plan (2018) Northumbrian Water Drought Plan (2013) Northumbrian Water Drought Plan (2011) Northumbrian Water Drought Plan (2007)
Distribution List	Internal: Applicable Management & Affected Depts External: As per Drought Plan Guideline Web: www.nwg.co.uk/droughtplan

DOCUMENT CHANGE RECORD

Release Date	Version	Report Status	Change Details
31.03.2026	1	First Draft	Environmental assessments incomplete
21.05.2026	2	First Draft	Publication – completed Environmental Assessment information will be included in version 3, which will be available on our website from 7 July
07.07.2026	3	First Draft	Publication – completed Environmental Assessment information has been included.

DOCUMENT SIGNOFF

Nature of Signoff	Person	Date	Role
Reviewed by	William Robinson	20/03/2026	Water Resources & Supply Strategy Manager
Reviewed by	Katie Davis	21/03/2026	Head of Water Service Planning
Approved by	Kieran Ingram	27/03/2026	Water Director



Essex & Suffolk Water is a trading division of Northumbrian Water Limited which is a group company of Northumbrian Water Group

Registered in England & Wales No. 2366703
Registered Office: Northumbria House, Abbey Road, Pity Me, Durham DH1 5FJ

NON-TECHNICAL SUMMARY

We have prepared a summary of this Drought Plan which explains in non-technical language how we respond to a drought and summarises the triggers and actions in our Drought Plan. This can be found on our website:

www.nwg.co.uk/droughtplan

Additionally, Defra has prepared the following document which summarises how water companies plan for dry weather and drought to make sure they can supply water and protect the environment:

www.gov.uk/government/publications/drought-managing-water-supply

EXCLUSIONS ON THE GROUNDS OF NATIONAL SECURITY

Northumbrian Water Limited has not excluded any information from this plan on the grounds that the information would be contrary to the interests of national security.

Under Section 37B(10)(b) of the Water Industry Act 1991, as amended by the Water Act 2003 ("the Act"), the Secretary of State can direct the company to exclude any information from the published Plan on the grounds that it appears to him that its publication would be contrary to the interests of national security.

CONTENTS

1	INTRODUCTION.....	6
1.1	Purpose of this Drought Plan	6
1.2	What is Drought?	6
1.3	Water supply drought or peak demand?	7
1.4	Regulatory Framework	7
1.5	Pre-consultation	8
1.6	Draft Drought Plan Public Consultation	8
2	NORTHUMBRIAN WATER INFORMATION.....	9
2.1	Overview	9
2.2	Water Resource Zones	9
2.3	The Kielder Transfer Scheme	10
2.4	Drought Management Areas	12
2.4.1	Northumberland & Tyne Drought Management Area	13
2.4.2	Weardale & Durham Drought Management Area	14
2.4.3	Tees Drought Management Area	15
2.4.4	Berwick & Fowberry Drought Management Area	16
2.5	Restrictions on water use and our Levels of Service.....	17
2.5.1	Overview	17
2.5.2	Level 1 Appeal for Restraint	18
2.5.3	Level 2 Temporary Use Ban (TUB)	18
2.5.4	Level 3 Non-Essential Use Ban.....	18
2.5.5	Level 4 Emergency Drought Actions	18
2.6	Fire Service	19
2.7	Links to Other Plans	19
2.7.1	Overview	19
2.7.2	National Drought Framework for England and Environment Agency Area Drought Plans	20
2.7.3	Water Resources Management Plan	21
2.7.4	NW Business Plan	22
2.7.5	NW Emergency Plan	22
2.7.6	Regional Water Resources Groups.....	22
2.7.7	River Basin Management Plan	24
2.7.8	Other Water Company Drought Plans.....	25
2.8	Agreements and arrangements for bulk supplies and transfers	25
2.8.1	Potable Water	25
2.8.2	Raw Water Bulk Supply	25
3	DROUGHT MANAGEMENT STRATEGY AND PROCESS	25
3.1	Overview	25
3.2	Drought Management Objectives	25
3.3	Internal Management	26
3.4	Drought Management Process	28
3.4.1	Overview	28
3.4.2	Stage 1: Resource Monitoring and supply & demand forecasting	29
3.4.3	Stage 2: Drought Action Trigger levels reached or exceeded.....	29
3.4.4	Stage 3: Identify, Consider and Select Potential Drought Actions	29
3.4.5	Stage 4: Consult, Notify and Apply for Selected Drought Actions.....	29
3.4.6	Stage 5: Implement Drought Actions.....	29
3.4.7	Stage 6: Monitor Effect of Drought Actions on Supply, Demand and the Environment	29
3.4.8	Stage 7: Post Drought Review	30
3.5	External Stakeholders.....	30
3.6	Decisions & Consultation in a Drought	30
4	RESOURCE MONITORING & DROUGHT INDICATORS	31
4.1	Overview	31
4.2	Water Resources Situation Reporting	31

4.3	Drought Indicators and Monitoring	31
4.3.1	Rainfall	32
4.3.2	Soil Moisture Deficit	32
4.3.3	Groundwater Levels	32
4.3.4	River Flows	33
4.3.5	Reservoir Levels	33
4.3.6	Weather Forecast	33
4.3.7	Operational Reporting	34
4.4	Reporting and Analysis of Drought Conditions	34
4.5	Historical Prolonged Dry Weather	35
4.6	Dry Years	35
5	DROUGHT TRIGGERS	36
5.1	Overview	36
5.2	Surface water – reservoirs	37
5.3	Surface water – rivers	41
5.4	Groundwater	41
5.4.1	Weardale & Durham Drought Management Area	41
5.4.2	Berwick and Fowberry Drought Management Area	42
5.5	Demand Drought Triggers	43
5.5.1	Distribution Input	43
5.6	Understanding the drought vulnerability of our supply systems	44
5.7	Testing our Drought Plan Triggers	45
5.7.1	Kielder DrMAs	45
5.7.2	Berwick & Fowberry DrMA	45
6	WHAT WE WILL DO IN A DROUGHT	46
6.1	Formation of Drought Management Group	46
6.2	Drought Actions	46
6.3	Rejected Drought Actions	47
7	DEMAND-SIDE DROUGHT ACTIONS	49
7.1	Level 0 BAU Demand Drought Actions	51
7.2	Level 1 Demand Drought Actions	51
7.2.1	Appeal for Restraint	52
7.3	Level 2 Demand Drought Actions	52
7.3.1	Temporary [Water] Use Bans (TUB)	53
7.4	Level 3a Demand Drought Actions	53
7.4.1	Non-Essential Use Ban (NEUB)	54
8	SUPPLY-SIDE DROUGHT ACTIONS	55
8.1	Overview	55
8.2	Level 0 (BAU) Supply-Side Drought Actions	55
8.2.1	Raw water and water treatment works optimisation	55
8.2.2	Operation of the Kielder Transfer Scheme	56
8.2.3	Coordination planning to minimise planned outage	56
8.3	Level 1 Supply-Side Drought Actions	56
8.3.1	Road tankering of potable water	57
8.4	Level 2 Supply-Side Drought Actions	57
8.5	Level 3a Supply-Side Drought Actions	57
8.5.1	Burnhope Reservoir compensation discharge reduction	57
8.5.2	Cessation of environmental spate releases	57
8.6	Other drought permits and drought orders	58
8.7	Environmental Drought Actions	58
8.8	Drought Actions to support other sectors	58
9	EXTREME DROUGHT ACTIONS	59
9.1	Section Overview	59
9.2	Level 3 Demand Drought Actions	63

9.2.1	Removal of Statutory, Discretionary and Universal Exceptions	63
9.3	Level 3b Supply-Side Drought Actions	63
9.3.1	Lowering Pumps at Murton, Thornton Mains and Bleak Ridge	64
9.3.2	Drought Permit at Bleak Ridge	64
9.3.3	Drought Permit / Order Compensation arrangements	65
10	CUSTOMER COMMUNICATIONS	65
10.1	Context	65
10.2	Strategy	65
10.3	Evaluation	66
10.4	Communication Channels	66
10.4.1	Overview	66
10.4.2	Channels	66
10.4.3	Media	66
10.4.4	Social Media	66
10.4.5	Stakeholders	67
10.4.6	Advertising	67
10.4.7	Internal Communications	67
10.4.8	Direct customer communications	68
10.4.9	Our Website	68
10.5	Drought Messaging Actions	68
10.5.1	Overview	68
10.5.2	Triggers for Drought Messaging	68
10.5.3	Dry Weather Messaging and Level 1 Appeals for Restraint	68
10.5.4	Level 2 Temporary Use Ban (TUB) Messaging	70
10.6	Working with others during Drought	72
10.6.1	Overview	72
10.6.2	National Drought Group (NDG)	72
10.6.3	Other water companies and Water Resources North	73
10.6.4	The Environment Agency	73
10.6.5	Non-household Customers and NAVs	73
10.6.6	Priority Services Register (PSR) Customers	74
10.6.7	Schools	74
10.6.8	Local Resilience Forum	74
10.6.9	Housing associations	74
10.6.10	Landlords	74
10.6.11	Shared Homes / Student Accommodation	75
10.6.12	High rise flats	75
10.6.13	Farms	75
10.6.14	Caravan/Holiday homeowners	75
11	ENVIRONMENTAL ASSESSMENT	76
11.1	Overview	76
11.2	Engagement with the Environment Agency and Others	77
11.3	Strategic Environmental Assessment	78
11.3.1	SEA – methodology	79
11.3.2	SEA Scoping	79
11.3.3	SEA – outcomes	80
11.4	Habitats Regulations Assessment	81
11.4.1	HRA – methodology	81
11.4.2	HRA - outcomes	82
11.5	Water Framework Directive Compliance Assessment	83
11.5.1	WFD compliance assessment – methodology	83
11.5.2	WFD compliance assessment – outcomes	84
11.6	Supporting environmental assessments	89
11.6.1	Invasive non-native species	89
11.6.2	Biodiversity no net loss	89
11.7	Environment Assessment Reports	89
11.7.1	EAR Approach	89
11.7.2	EAR Methodology	90

11.7.3	Summary EAR Outcomes	91
11.8	Environmental Monitoring.....	91
11.9	Mitigation Measures.....	92
11.10	Relevant Legislation	93
11.10.1	Strategic Environmental Assessment.....	93
11.10.2	Habitats Regulations	93
11.10.3	River basin management plans (RBMPs)	94
11.10.4	Other relevant legislation	94
12	HISTORIC ENVIRONMENT ASSESSMENT	95
12.1	Overview	95
12.2	Impacts.....	95
12.3	Policy and Guidance	95
12.4	Strategic Environmental Assessment (SEA).....	96
12.5	Environmental Assessment Reports	97
13	RECOVERY FROM DROUGHT	97
14	END OF DROUGHT	97
14.1	End of drought triggers	97
14.2	Reviewing our plan performance after a drought.....	98
14.3	Revision of Drought Plan	99
15	REFERENCES	100
16	GLOSSARY	101
17	APPENDICES (SEPARATE DOCUMENT).....	105

1 INTRODUCTION

1.1 Purpose of this Drought Plan

This document is our Northumbrian Water (NW) Drought Plan 2027. It is an operational tactical plan that details the actions we will take during a drought. Our Drought Plan identifies how we intend to manage droughts, what trigger levels will be used to identify when action is required, and what measures are available to support supplies when levels of service are compromised. Our Drought Plan also outlines how the effects of a drought and drought actions will be communicated to customers and takes account of the need to undertake environmental monitoring at those sites potentially affected by the implementation of drought actions.

This Drought Plan builds on our previous Drought Plan 2022, incorporates our experience of managing droughts, most recently in 2025, and has been prepared following the Environment Agency's updated Drought Plan Guidance (March 2025).

1.2 What is Drought?

We live in a changing climate where hot weather and droughts are increasing in frequency. Droughts are natural events that cannot be defined, as every drought is different. Whilst they are all caused by a shortage of rainfall, the characteristics (including timing, duration, impacts on people, the environment, agriculture and business) can vary.

Some droughts are short and intense, caused by a hot, dry summer. Others are long and take time to develop over multiple seasons due to prolonged low rainfall.

The main types of drought, which may occur separately or together, are:

Agricultural drought	When there isn't enough rainfall and moisture in soils to support crop production or farming practices such as spray irrigation.
Environmental drought	When lack of rainfall has a detrimental impact on the environment and ecology.
Water supply drought	When a lack of rainfall leads to concerns from water companies about supplies for their customers.

This Drought Plan sets out how we will manage our water supplies and demand during a water supply drought. We also have a responsibility to protect the environment and where possible, support agricultural users (e.g. livestock farmers), through droughts that impact them.

The Environment Agency monitors various indicators (e.g., rainfall, river flows, groundwater levels, reservoir storage, ecology, public water supplies) and will decide the level of drought (drought status) an area is in. The Environment Agency use four stages to describe and manage their response:

Prolonged dry weather	Characterised by a period of dry weather that is impacting on river flows, groundwater levels and water levels in lakes and reservoirs.
Drought	Characterised by further deterioration to the environment and impacting agriculture, people and businesses.
Severe drought	Resulting in extensive, lasting effects on the environment, farming, people, communities, and the economy. The lack of water leads to serious water shortages and widespread impacts across sectors. It's when the lack of water begins to disrupt daily life and the environment in major ways.
Recovering from drought	Drought impacts are reducing and returning towards normal ranges for the time of year.

1.3 Water supply drought or peak demand?

There is a difference between a water supply drought and a peak demand period. In a water supply drought, water storage levels (e.g. reservoirs) are running low and abstraction from the environment is limited. We will use our demand and supply-side drought actions to maintain customer supply through such a drought.

A peak demand period can occur when water storage levels are healthy, but the supply system (i.e., treatment works and distribution network), doesn't have the capacity to process and output the water quickly enough to meet customer demand. Under these circumstances, we may ask our customers to consider their water use. More information on peak demand during a drought can be found in Appendix 1.

1.4 Regulatory Framework

We are required to prepare a drought plan under Section 39B of the Water Industry Act 1991, as amended by the Water Act 2003. A full list of the guidance and legislation that we have followed in preparing this Drought Plan is included in Appendix 2.

The drought planning process is regulated by the Secretary of State for the Department of Environment, Food and Rural Affairs (Defra) and the Environment Agency. The Secretary of State set out their expectations in *The Drought Plan (England) Direction 2025*, and the accompanying *Government expectations for water company drought plans* (22 July, 2025).

This drought plan complements our Water Resources Management Plan 2024 (WRMP24), which forecasts water demand for the period April 2025 to March 2085 and assesses the vulnerability of our water supply systems to dry weather and droughts. Our WRMP24 sets out our preferred strategic solutions to address any supply and demand shortfalls. In contrast, this drought plan is a tactical plan and considers what measures can be implemented in the short term to address temporary shortages of water resources during drought conditions.

1.5 Pre-consultation

We recognise the value of early communication with the many stakeholders potentially affected by and involved in the drought management process. We have pre-consulted with key stakeholders including other water companies, the Environment Agency, Natural England, and our Customer Challenge Group, known as the Water Forum, and have taken account of their responses in the development of this Drought Plan.

We wrote to our drought plan consultees on 17 December 2024 and asked for their views on our current Drought Plan and on any wider aspects they would like us to consider when developing this Drought Plan 2027. We received comments back from the Environment Agency, Natural England, Historic England and Yorkshire Water and have taken account of them in the preparation of this Drought Plan.

1.6 Draft Drought Plan Public Consultation

Following direction by the Secretary of State, the public consultation for this draft Drought Plan will take place over a twelve week period starting on 21 May 2026 and closing on 13 August 2026. During this time, we will publish this drought plan on our website at www.nwg.co.uk/droughtplan.

The Statutory Consultees are:

- Defra Secretary of State
- Ofwat
- Environment Agency
- Natural England
- Historic England
- Consumer Council for Water
- Local Authorities within the company's supply area
- National Park Authority
- Navigation Authorities

Your comments (written representation) on this drought plan should be emailed to the Secretary of State for the Department of Environment Food and Rural Affairs (Defra) at water.resources@defra.gov.uk.

The Secretary of State will forward copies of any comments received to us for review at the end of the consultation period. However, to give us more time to consider your comments, we would be grateful if when you email Defra, you also copy us in at waterresources@nwl.co.uk.

We will publish on our website www.nwg.co.uk/droughtplan a statement of response to the representations we receive. This will confirm how we have taken account of each response in our final Drought Plan.

2 NORTHUMBRIAN WATER INFORMATION

2.1 Overview

This section provides a high-level summary of our supply area and infrastructure, Water Resource Zones (WRZs) and Drought Management Areas (DrMAs).

We supply water to approximately 2.8 million customers in our supply area which extends from the Scottish border in the north to the Yorkshire border in the south and as far west as the Cumbrian border.

2.2 Water Resource Zones

We undertake water resources planning at a water resource zone (WRZ) level. A WRZ is defined as 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 restrictions and/or failure from a resource shortfall.

Our Northumbrian Water supply area comprises two WRZs, known as the Kielder WRZ and the Berwick & Fowberry WRZ, shown in Figure 1.

Our Kielder WRZ is extensive and covers most of our supply area. It includes the Teesside Industrial Supply Zone which is a supply of screened but untreated water to large industrial customers on Teesside.

Our Berwick & Fowberry WRZ is in the north of our supply area, covering the area of Northumberland from the Scottish border in the north and west to the River Rede in the southwest, the River Coquet in the southeast and Holy Island on the North Sea coast to the east.

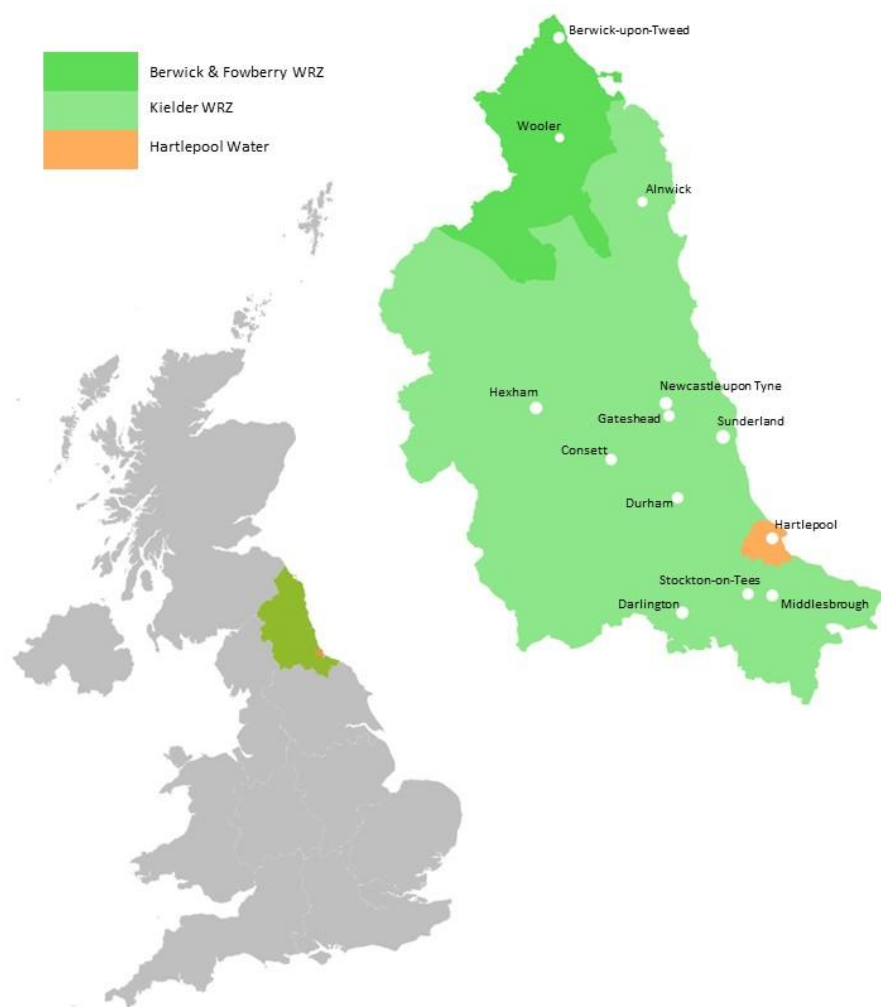


Figure 1: Northumbrian Water supply area

2.3 The Kielder Transfer Scheme

The Kielder WRZ benefits greatly from Kielder Reservoir and the Kielder Transfer Scheme, shown in Figure 2, and comprises:

- Kielder Dam and associated headworks including release valves and hydropower plant;
- Bakethin Dam;
- a weir and pumping station at Riding Mill on the River Tyne;
- a rising main from Riding Mill to Letch House;
- Airy Holm pond;
- a tunnel from Letch House to Frosterley on the River Wear and Eggleston on the River Tees (called the Tyne-Tees tunnel or TTT);
- a connection from the tunnel into the River Derwent and an abstraction into Mosswood WTW; and
- a licensed abstraction from the Tyne-Tees tunnel air shaft at Waskerley.

At the time of design, the principal objective of the Kielder Transfer Scheme was to enhance the water resources of the Tees DMA to meet the then rapidly increasing demand for water, primarily for industrial use. Although the forecast industrial demands did not materialise when expected, the Kielder Transfer Scheme remains an important strategic supply scheme providing drought resilience for the northeast and forms part of the proposed Kielder Strategic Resource Option¹. Although historically the volume of transfer through the Tyne Tees Tunnel to the River Tees has been limited, the availability of support has enabled cheaper local raw water sources to be used more effectively, and to be drawn down further, without the necessity to place restrictions on water use. As such, our customers in the North East of England benefit from some of the best drought levels of service in the country.

The principal regulating reservoir in the Tees catchment is Cow Green which provides the full required support for prescribed flows and abstractions under normal conditions. During drought or future higher abstractions, releases may be made from the Lune/Balder reservoirs or the Kielder Transfer Scheme as required. The outlet portal for the Tyne-Tees tunnel to the River Tees is located at Eggleston.

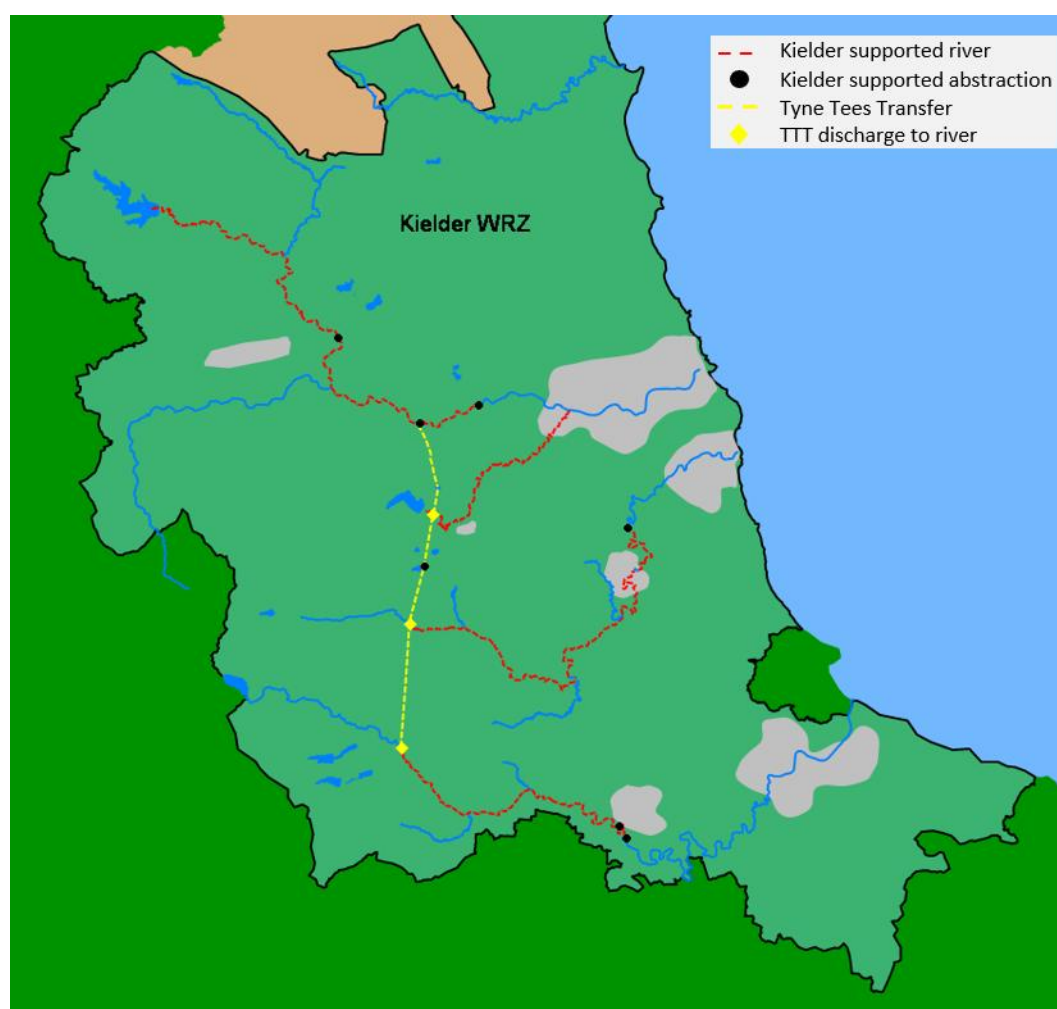


Figure 2: Kielder Transfer Scheme

¹ The Kielder Strategic Resource Option (SRO) is a proposed regionally strategic scheme to use surplus water from Kielder Reservoir to support neighbouring water companies in the north of England, addressing future supply needs from population growth and climate change.

2.4 Drought Management Areas

The Kielder WRZ comprises three Drought Management Areas (DrMAs), and the Berwick & Fowberry WRZ represents a single DrMA, as shown in Figure 3. These DrMAs have been defined by considering the raw water network and the potable distribution network that allows water to be transferred between areas.

The three DrMAs within the Kielder WRZ are the Northumberland & Tyne DrMA, Weardale & Durham DrMA, and Tees DrMA. All three can be supported by Kielder Reservoir via the Kielder Transfer Scheme. In addition, there are potable transfer mains between the Northumberland & Tyne and Weardale & Durham DrMAs as well as between the Weardale & Durham and Tees DrMAs.

A description of each DrMA is provided in the following sections.

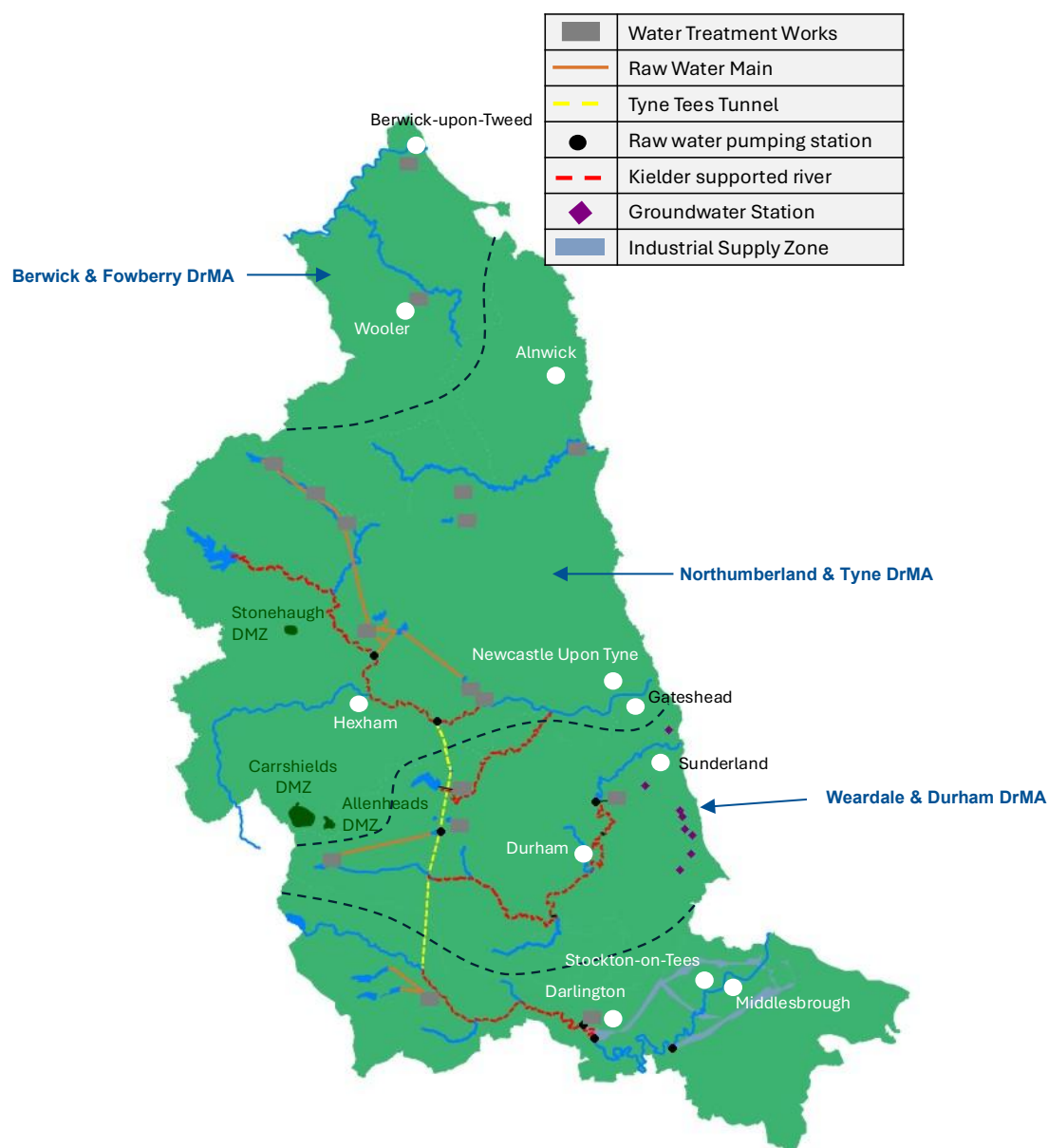


Figure 3: Drought Management Areas (boundaries are black dotted lines)

2.4.1 Northumberland & Tyne Drought Management Area

The Northumberland & Tyne DrMA (Figure 4) is supported via Kielder Water by means of two raw water pumping stations, Barrasford and Ovingham, that abstract water from the Rivers North Tyne and Tyne, respectively, both these rivers can be supported by releases from Kielder Reservoir.

The northern part of this DrMA is supplied from Warkworth WTW on the River Coquet, a reservoir and WTW at Fontburn and from a spring supplied WTW at Tosson. These are linked to the rest of the Northumberland & Tyne DrMA with a potable water main and full flow from Warkworth can be replaced with potable water from WTW in the southern part of the DrMA.

The western area of the Northumberland & Tyne DrMA is supplied from four WTW, three very small works supplying Byrness, Otterburn, and Otterburn with a slightly larger works at Gunnerton all of which are reservoir fed WTW from Catcleugh Reservoir. Gunnerton WTW can be supplied from Barrasford raw water pumping station (RWPS), and therefore can be supported by Kielder Reservoir if required.

The majority of the demand in the Northumberland & Tyne DrMA is in the Tyneside area and is supplied from Horsley WTW (supplied via Ovingham RWPS on the Tyne) and Whittle Dene WTW which is supported via several impounding reservoirs along with an abstraction from the North Tyne at Barrasford.

Within the geographical extent of the Northumberland & Tyne DrMA there are three small independent sub-zones, two spring supplied WTWs at Allenheads and Carrshields, and the borehole supplied Stonehaugh WTW. In the event of a drought impacting the yield of these sources, these three sub-zones would be indirectly supported from Kielder Reservoir via tankering potable water from Whittle Dene Water Treatment Works (WTW).

Northumberland & Tyne Drought Management Zone

	Water Treatment Works
	Raw Water Main
	Tyne Tees Tunnel
	Raw water pumping station
	Kielder supported river
	Groundwater Station



Figure 4: Northumberland & Tyne Drought Management Area

2.4.2 Weardale & Durham Drought Management Area

The Weardale & Durham DrMA (Figure 5) is supported by the Kielder Transfer Scheme by way of;

- A cross connection linking the TTT with Mosswood Water Treatment Works (WTW) that can provide a partial substitution for the Derwent Reservoir resource.
- A pipeline from the TTT to Derwent reservoir that can substitute the compensation flow from Derwent with water from the TTT.
- An outfall from the TTT at Frosterley into the River Wear to maintain flows in the River Wear and allow continued abstractions at Lumley WTW.
- A pump and rising main to transfer water from the TTT to support abstractions from Waskerley Reservoir.

The majority of the demand in the Weardale & Durham DrMA is supplied by Mosswood WTW which is fed from Derwent Reservoir. Transfers from the TTT can be made directly to Mosswood WTW or into the River Derwent in substitution for the prescribed compensation flow from Derwent Reservoir, thus conserving water in Derwent Reservoir for future use.

There are also four impounding reservoirs, Burnhope Reservoir supplying Wear Valley WTW, and Waskerley, Smiddy Shaw and Hisehope, all supplying Honey Hill WTW. Water can also be abstracted from the TTT into Waskerley Reservoir to support Honey Hill WTW.

There is an abstraction from the River Wear at Lumley WTW. We can make discharges from the TTT at Frosterley to the River Wear, to maintain the flow in the river guaranteeing water is available for abstraction. Additionally, there are several groundwater sources (boreholes abstractions from the Magnesian limestone aquifer) which are situated to the east of the zone and supply water to the Sunderland area of the DrMA.

Tunstall Reservoir is located within this DrMA but no longer supplies a treatment works and is used exclusively for compensation and regulatory releases into the River Wear.

Weardale & Durham Drought Management Zone

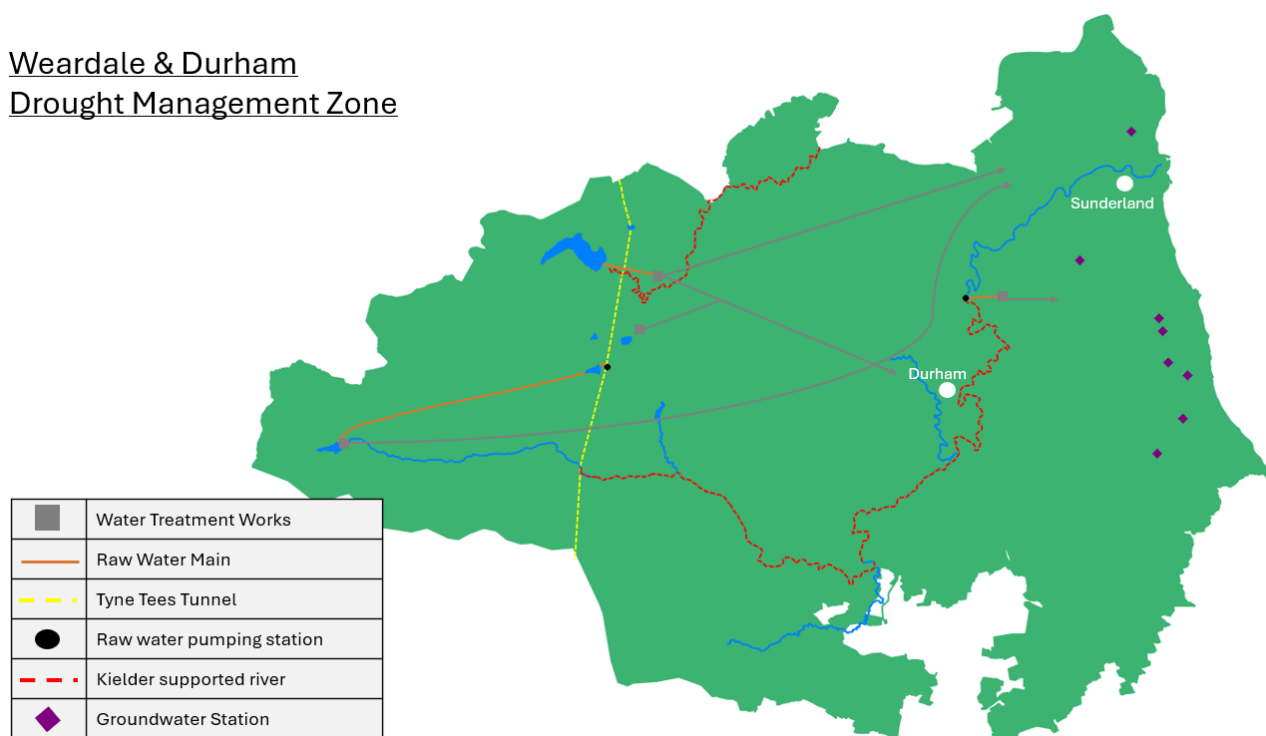


Figure 5: Weardale & Durham Drought Management Area

2.4.3 Tees Drought Management Area

There are two WTW in the Tees DrMA (Figure 6). Lartington WTW supplies the west of the DrMA and supports demand to the east of the DrMA. Lartington WTW receives its water from five impounding reservoirs, two on the River Lune - Selset and Grassholme, along with three on the River Balder - Balderhead, Blackton and Hury. This group of reservoirs and can also be used for regulation releases to support flow in the River Tees.

Broken Scar WTW supplies water to the central and eastern areas of the DrMA; it abstracts water from the River Tees as well as having a small borehole to supplement supply to the WTW. Cow Green Reservoir sits at the head of the River Tees and along with compensation releases can be used for river regulation to support abstractions at Broken Scar WTW.

Within the Tees DrMA we have the Industrial Supply Zone which is a supply of screened but untreated water to large industrial customers on Teesside. The water for this supply zone is abstracted from the Tees at either Blackwell RWPS or Broken Scar RWPS.

Discharges can be made from the TTT at Eggleston to the River Tees to maintain the flow in the river guaranteeing water is available for downstream abstractions.

Also within the Tees DrMA, there are two recreational reservoirs, Lockwood Beck Reservoir and Scaling Reservoir, in the North Yorkshire Moors. See Appendix 3 for further information on Scaling Reservoir, which is a 'compensation only reservoir'

Tees Drought Management Zone

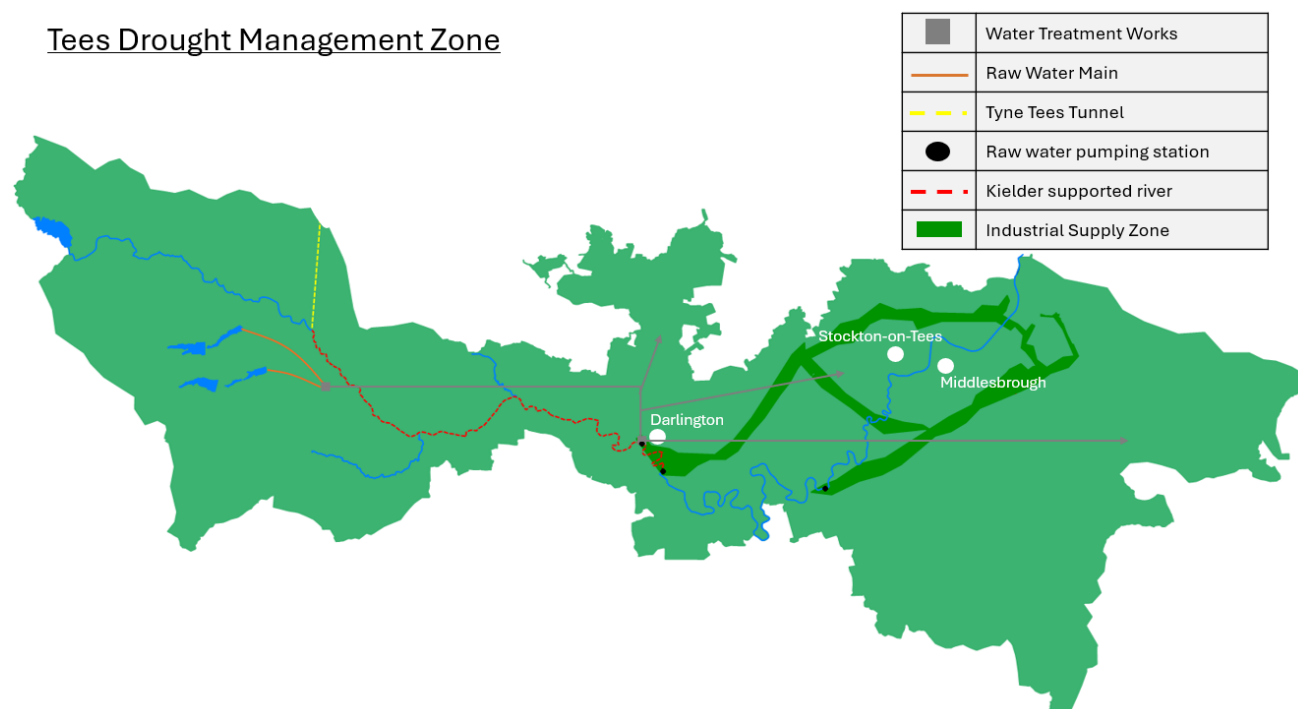


Figure 6: Tees Drought Management Area

2.4.4 Berwick & Fowberry Drought Management Area

The Berwick & Fowberry DrMA (Figure 7) has the same boundary as the Berwick & Fowberry WRZ, it is supplied entirely by groundwater abstracted from the Fell Sandstone aquifer.

The principal demand centres are the towns of Berwick-upon-Tweed and Wooler, supplied by Murton WTW and Wooler WTW respectively. Each WTW is supplied by a network of satellite boreholes. Murton WTW, to the southwest of Berwick-upon-Tweed, is supplied by six boreholes distributed across five groundwater pumping stations. To the east of Wooler, the WTW is supplied by three boreholes distributed across two groundwater stations. A small area between the distribution zones of the two WTW, which includes Holy Island, can be supplied by either WTW, but the capacity for transfer between the treated water distribution systems is limited.

Berwick & Fowberry Drought Management Zone

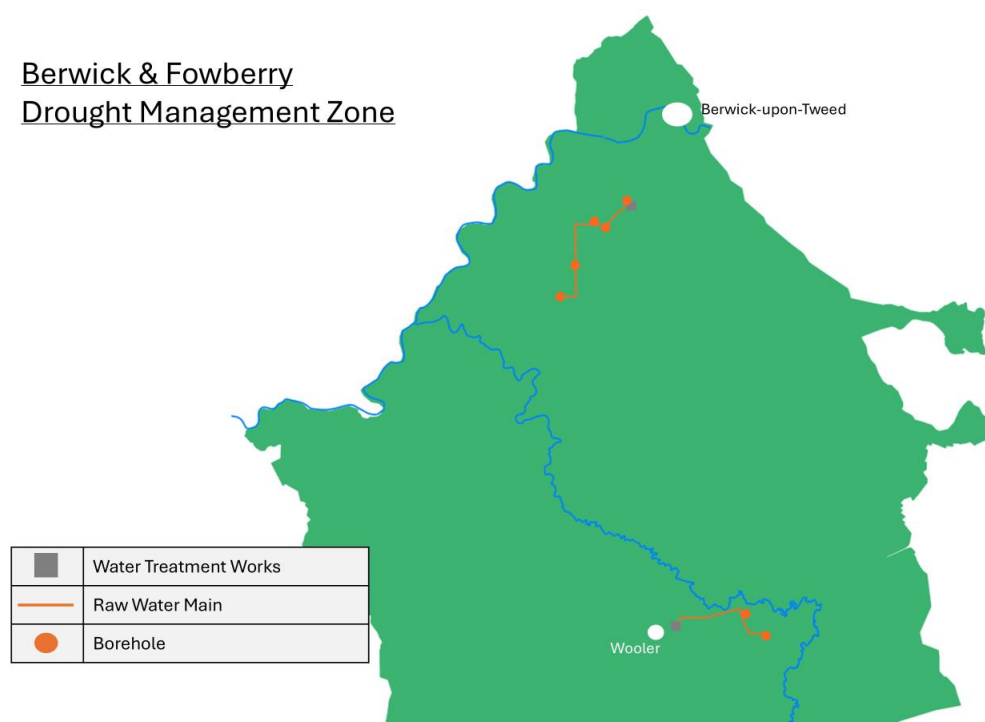


Figure 7: Berwick & Fowberry Drought Management Area

2.5 Restrictions on water use and our Levels of Service

2.5.1 Overview

During long or very intense droughts, we may need to place restrictions on customer water use to ensure we are always able to maintain reliable supplies should the dry weather turn into a drought.

The frequency of these restrictions (our Levels of Service) was agreed with our customers and stakeholders during the development of our published Water Resources Management Plan 2024. They are reviewed every five years as part of the Water Resources Management Planning process.

Our current planned Levels of Service are summarised in Table 1. Our Levels of Service are presented as both a return period (e.g., 1 in 10 years) and as a percentage (e.g., 10% chance in any one year). For example, our Level of Service for an Appeal for Restraint is 1 in 10 years on average, or a 10% chance. This does not mean that an Appeal for Restraint will be made with such regularity; for example, a 1 in 10 year drought event may occur twice in 10 years and then not again for another 10 years.

The Level of Service for Level 4 Emergency drought actions is included for completeness. However, implementation of these actions now falls under our company Emergency Plan for Drought.

We are meeting all of our levels of service and have not needed to impose Level 2 restrictions since 1959, and never needed to introduce Level 3 or 4 restrictions.

Table 1: Planned Levels of Service

Level of Restriction	Frequency of restriction	Annual chance of restriction
Level 1: Appeal for restraint	1 in 10 years	10% probability in any one year
Level 2: Temporary Use Ban	1 in 150 years	0.66% probability in any one year
Level 3: Non-Essential Use Ban	1 in 200 years	0.5% probability in any one year
Level 4: Emergency drought actions	1 in 500 years	0.2% probability in any one year

2.5.2 Level 1 Appeal for Restraint

Some droughts, typically those of short duration, do not require us to place restrictions on the use of water although we always ask our customers to use water wisely. However, as a period of prolonged dry weather develops, we may need to implement a Level 1 Appeal for Restraint. We would use all of our communication channels (e.g. social media and press releases) to ask our customers to Use Water Wisely.

2.5.3 Level 2 Temporary Use Ban (TUB)

As a drought develops, a Level 2 Temporary Use Ban (TUB) might be required (see Section 7.3 for more details). This would, for example, allow us to restrict the use of hosepipes for garden watering. Their use will still be rare and only when there is a real need.

2.5.4 Level 3 Non-Essential Use Ban

During severe droughts we may need to implement a Level 3 Non-Essential Use Ban (NEUB), sometimes referred to as a Drought Order Ban. This would allow us to place wider restrictions on the use of water including:

- Watering outdoor plants on commercial premises;
- Filling or maintaining a non-domestic swimming or paddling pool;
- Filling or maintaining a pond;
- Operating a mechanical vehicle-washer;
- Cleaning any vehicle, boat, aircraft or railway rolling stock;
- Cleaning non-domestic premises;
- Cleaning a window of a non-domestic building;
- Cleaning industrial plant;
- Suppressing dust; and
- Operating cisterns.

Restrictions would never be placed on the use of water for firefighting and our procedures for protecting vulnerable customers would come into force.

2.5.5 Level 4 Emergency Drought Actions

During an unprecedented drought, we might need to implement Level 4 restrictions. This can only be done by applying for an emergency drought order. However, this is an emergency action and falls within the scope of our company Emergency Plan, not this Drought Plan.

2.6 Fire Service

Water companies have duties under Part 5 of the 2004 Fire and Rescue Services Act with regard to the provision of water for firefighting.

During minor and moderate droughts (i.e. those requiring Level 1, 2 or 3 drought actions to be implemented) we would never place restrictions on the use of water for firefighting. However, during unprecedented extreme droughts, the most severe of our Drought Plan actions is to reduce pressure within our network below the minimum level of service. This could affect the flow rate from hydrants used by the Fire Service for firefighting. Nevertheless, we would take all reasonable measures to provide adequate supplies of water for the Fire Service's use in firefighting and pressure could be increased again temporarily to support any significant fire incidents. In the very unlikely event that network pressure reduction was required we would provide the Fire Service with as much warning as possible (a minimum of 7 days) and we would formally notify the relevant Emergency Planning Authorities.

2.7 Links to Other Plans

2.7.1 Overview

Our drought plan has been developed with reference to the following other plans:

- National Drought Framework for England
- Environment Agency Area Drought Plans.
- Our Water Resources Management Plan (WRMP24).
- Our Emergency Plan for drought.
- Water Resources North Regional Plan and Drought Statement of Intent

These are outlined in more detail in the following sections. Figure 8 summarises how our WRMP, drought plan and emergency plan for drought work together to support drought management.

Environment Agency drought stage and related drought action levels	WRMP	Drought plan	Emergency plan
Normal (green)	Includes demand and supply drought actions but not extreme actions	Triggers actions	Implements actions
Prolonged dry weather (yellow) – drought level 1 actions			
Drought (amber) - drought level 2 & 3a actions			
Severe drought (red) – drought level 3b extreme actions		Triggers actions	Implements actions
Severe drought (red) - drought level 4 emergency actions			

Figure 8: How our plans work together to support drought management (EA, 2025)

2.7.2 National Drought Framework for England and Environment Agency Area Drought Plans

The UK Government publishes its policy entitled, 'Drought: how it is managed in England', which was last updated in September 2025 and can be accessed at:

<https://www.gov.uk/government/publications/drought-management-for-england> .

The policy explains how the Environment Agency works with government, water companies and others to manage water resources during a drought in England, and sets out:

- the impacts of drought in England
- who is involved in planning, managing and responding and how they work together
- the actions they and others take to effectively manage droughts
- how they report on drought and communicate with others
- their role in recovery and learning from drought events

The Environment Agency also has its own area drought plans which set out the metrics for determining drought status, the actions it will take during a drought and its communications plans.

We will always work closely with the Environment Agency during a drought and will continue to:

- share monitoring data;
- consider the various stages of drought with regard to our own Drought Plan;
- provide regular water resource updates;

- work closely with the Environment Agency's communications teams and where appropriate issue joint communications with the Environment Agency and other stakeholders.

2.7.3 Water Resources Management Plan

We assess supply and demand in our Water Resources Management Plan (www.nwg.co.uk/wrmp) which sets out how we will provide a reliable and sustainable supply of water to our customers and is refreshed every 5 years.

Our latest plan called Water Resources Management Plan 2024 (WRMP24) covers the period from 2025 to 2085 and was prepared in line with the Water Resources Management Plan Regulations 2007 and Water Resources Management Plan Direction 2022.

WRMP24 forecasts how much water we will have available to supply our customers, taking account of future droughts, climate change and the need to protect the environment. It also forecasts how much water our customers will need taking account of future population growth. The forecasts are worst case in the sense that dry weather demands are measured against source yields defined by worse droughts on record. The Environment Agency requires that by 2039, all water companies must be able to maintain supply during a 1 in 500 year drought (i.e. without needing to implement Level 4 drought actions). Therefore, we also tested out plan against plausible, synthetic droughts that are more impactful than historic droughts (in terms of severity and duration) with a return period of 1 in 500 years.

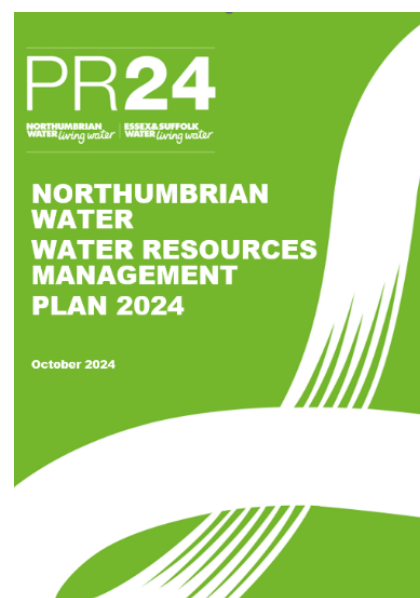
By comparing our WRMP24 supply and demand forecasts, we confirmed that we will have reliable and sufficient supplies of water to meet customer demand over the 25-year planning period.

While our Water Resources Management Plans are long term plans, by contrast, drought plans are essentially a tactical plan comprising prepared response to sustained dry weather (drought) conditions that have the potential to detrimentally affect public water supplies. This Drought Plan sets out the actions we will take to manage water supplies in a drought and includes worked examples.

There are direct linkages between longer term water resources planning and drought planning in terms of the calculation of all elements relating to the Supply Demand balance, which for the purposes of this document can be assumed to be consistent.

It should be recognised that the frequency of drought may increase in the future due to the impact of climate change.

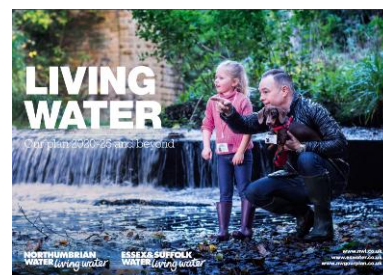
Our levels of service for each of our Level 1, 2, and 3 Drought Actions are the same for both our Water Resources Management Plan and this Drought Plan.



2.7.4 NW Business Plan

In our Price Review 2024 (PR24) Business Plan, which covers the period from 1 April 2025 to 31 March 2030 we included:-

- All schemes in our AMP8 Water Industry National Environment Programme (WINEP).
- Our metering, leakage and water efficiency strategies



Our WRMP24 baseline supply demand balance calculations have confirmed a supply surplus for both Water Resource Zones across all years of the planning horizon. Therefore, no further supply or demand management schemes were included in the Business Plan.

2.7.5 NW Emergency Plan

Our Business Continuity Team is responsible for developing and maintaining our Emergency Plans and for ensuring that our obligations are met under the Security and Emergency Measures Direction (SEMD) 2024.

Our Business Continuity Team is represented on our Drought Management Group and would oversee implementation of Level 4 drought actions (standpipes and rota cuts) in the very unlikely event that they are needed.

2.7.6 Regional Water Resources Groups

Overview

Our local regional Water Resources Group is Water Resources North (WReN), of which we are a core member. WReN published their first regional Water Resources Plan in June 2025. WReN does not currently have any dry weather or drought actions that impact on our supply area. However, we will take account of any future actions that might be developed.



We have had pre-consultation discussions with neighbouring water companies including Hartlepool Water, Yorkshire Water and United Utilities.

We would consider any request to increase an export during drought on a first come first served basis and on a case by case basis, taking account of our own water resources position. We would not agree to increasing an export if it compromised our own levels of service or overall water supply resilience.

In an emergency situation, where customers of a neighbouring water company are at risk of a supply failure, we would look to support that company through the existing WaterUK mutual aid process where possible.

There might be occasions where we can operate our sources differently to benefit other water users during drought, while minimising the risk to supply. We will consider such requests on a case by case basis via waterresources@nwl.co.uk.

Regional Alignment

As part of WReN, we recognise that effective drought management requires coordinated communications and action across all sectors that depend on water resources. WReN has produced a Statement of Intent (Sol), which can be found in Appendix 4, which outlines the approach to regional drought management, collaboration and planning.

The Sol provides information on the WReN multi-sector Drought Group, including the structure and group membership and how it will serve as a regional forum to facilitate collaboration between sector groups (i.e. public water supply, agriculture, energy and navigation), regulators and wider stakeholders to enhance regional preparedness for periods of prolonged dry weather and drought events.

The Sol also describes the regional's groups commitment to considering environmental and social needs during drought management activities.

We will work collaboratively with other regional water companies, the Environment Agency and other sectors to ensure that dry weather and drought communications are consistent and do not contradict each other. This will cover the environmental and water resources position, water efficiency messaging and the implementation of and communication around customer restrictions where there is a common water resources drought.

We will use language that is consistent across neighbouring water companies and seek to work collaboratively at a regional level, especially when imposing customer restrictions.

We have categorised our drought plan drought actions using the Level 1 to 4 definitions (see Section 6) and will be consistent in our language around Temporary Use Bans (TUBs) and possible exemptions. For TUBs (see Section 7.3 and Appendix 5) and Non-Essential Use Bans (NEUBs) (see Section 7.4) we have agreed common text in this Drought Plan which covers, among other aspects, TUB and NEUB exemptions.

For some of the regional groups there are clear benefits to co-ordinating drought actions and even going so far as to develop regional drought actions and triggers. The benefit of regional drought planning for the three WReN water companies is limited due to the geographical size of the companies and their risk profiles. The three companies have no water supply connections. We share a border with Yorkshire Water, but this is in a rural part of the region. Although Yorkshire Water has a drought option to create a link to transfer water from us, this would be an extreme drought measure and Yorkshire Water's drought plan triggers and actions are designed to avoid this need where possible.

The climatic variations are also a factor as is the resource position. The three companies experience different rainfall patterns, rely on different hydrological structures and have different levels of service. Yorkshire Water and Hartlepool Water have potential to have restrictions on use more frequently than us. Hartlepool Water relies solely on groundwater, whereas Yorkshire Water has a conjunctive use system that takes water from mostly surface resources although groundwater is still a vital resource providing around 25% of its supply. Groundwater tends to react much more slowly to dry weather than surface water. It is therefore unlikely the three companies would experience a drought of the same intensity at the same time, unless in very extreme and unprecedented circumstances. This limits the

potential for regional drought planning as it is likely we would not be experiencing the same drought impacts at the same time.

The priority for Water Resources North is to therefore support regional water resources resilience through the Regional and Water Resources Management Planning processes, rather through water company Drought Plans.

2.7.7 River Basin Management Plan

River Basin Management Plans (RBMPs) describe the challenges that threaten the water environment and how these challenges can be managed and are the foundation for delivering the government's 25 Year Environment Plan 'clean and plentiful water' goal. They set out how organisations, stakeholders and communities will work together to improve the water environment and set the legally binding locally specific environmental objectives that underpin water regulation (such as permitting) and planning activities. They provide a planning base for economic development. This includes investment programmes such as the:

- Water Industry National Environment Improvement Programme (WINEP)
- strategic water resources solutions being developed by the Regulators Alliance for Progressing Infrastructure Development (RAPID)
- government's new environmental land management schemes and England Trees Action Plan

Our Drought Plan contains drought actions which are operational tools that can be used to promote RBMP objectives under drought conditions. For example, under WFD regulations, RBMPs aim to maintain or achieve good ecological status of waterbodies.

As part of our Drought Plan, we have carried out strategic environmental assessments that ensure our actions do not have a long-term detrimental impact on the environment. These environmental assessments highlight monitoring and mitigation measures which allow us to implement our drought actions whilst minimising environmental impacts.

Another RBMP objective is to ensure long-term sustainable water resource management. Our Drought Plan includes drought actions which range from temporarily restricting non-essential water use, running water efficiency campaigns and switching to alternative supply arrangements to reduce stress on water bodies.

We also align on the RBMP aim to prevent deterioration of water quality, through our environmental monitoring plans which outline our approach to monitoring immediately before and after implementation of our drought actions, as well as during drought recovery. Our Drought Plan also includes the use of supply-side drought actions which increase the water available in the environment which alleviates the risk of deterioration in water quality under low flows. Some of our demand-side drought actions also promote a collaborative approach to managing water resources by actively involving diverse stakeholders through communication strategies and coordination with other PWS and non-PWS abstractors.

Finally, our Drought Plan aligns with the RBMP objective of addressing pressures and risks to waterbodies through forward planning, drought trigger development and testing, and

prioritisation of critical uses during drought which reduces system vulnerability and supports RBMPs risk-based management approach.

2.7.8 Other Water Company Drought Plans

In our pre-consultation discussions, we met with our neighbouring water companies Hartlepool Water (operated by Anglian Water Services), United Utilities, and Yorkshire Water, to ensure that our respective drought planning is consistent in terms of assumptions regarding water imports and exports, and communications (as detailed in Section 2.7.6).

2.8 Agreements and arrangements for bulk supplies and transfers

2.8.1 Potable Water

We have a number of potable water imports and exports, please see Appendix 6 for details. For the purposes of this Drought Plan we have assumed that the full quantity outlined in our water supply agreements will be available during a drought. Requests to increase transfers (within the capacity of the transfer mains) will be considered against our own water resources position and would only be supported if our modelling confirmed no significant increase in risk to our own customers' water supplies.

2.8.2 Raw Water Bulk Supply

We have no raw water imports or exports.

3 DROUGHT MANAGEMENT STRATEGY AND PROCESS

3.1 Overview

This section of our Drought Plan sets out our strategy and the process we will follow when responding to drought.

3.2 Drought Management Objectives

The overall objectives of our Drought Management Strategy are:

- To expedite the process of implementing a drought action;
- To identify potential drought measures that may be required in response to a range of drought conditions;
- To provide a comprehensive package of information and procedures that mean we can respond quickly to drought conditions, including collecting the information necessary for a drought permit or drought order application;
- To enable early discussion with regulators, customers and other stakeholders on our proposed response to a drought; and
- To ensure that senior leaders within our business will be provided with detailed, relevant and reliable information on which to make decisions.

3.3 Internal Management

Our Drought Management process begins with the formation of our Drought Management Group (DMG). The trigger for forming the DMG is based on supply and demand conditions and will be particularly influenced by when resource monitoring starts to indicate a potential worsening of hydrological conditions. Our key drought indicators are raw water reservoir storage and groundwater levels in the aquifers from which we abstract. These indicators, discussed further in Section 4, are reviewed and reported to all levels of management on a weekly basis outside of drought conditions by our Water Resources team.

The decision to form the DMG will be made by our Head of Water Service Planning and our Water Director. A number of factors could trigger the formation of the DMG:

- Raw water availability and operational constraints.
- Our weekly water resource trend forecasts.
- Environment Agency Drought Prospects reporting results.
- Environment Agency Drought Status for our operational area.

Our Head of Water Service Planning will assume the role of Drought Manager and will chair the DMG. A DMG secretary will also be appointed and will be responsible for taking, circulating and tracking meeting actions.

The DMG will be formed from individuals representing both affected departments and/or those able to provide the necessary expertise in relation to the various areas of drought management, as shown in Table 2. All of the roles included in Table 2 will attend the Drought Management Group from the date it is formed with the exception of the Asset Investment Programme Manager and Emergency Planning Advisor who will only attend when Level 3 actions are being considered. The frequency DMG meets depend on the drought level, as set out in Table 3.

Table 2: Drought Management Group structure.

Area of Responsibility		Job Title
Overall Management	Leadership and Accountability	Water Director
Drought Manager (Chair)	Chair - responsible for timely implementation of drought actions in line with this Drought Plan.	Head of Water Service Planning
Environment Agency Liaison	To update the EA on latest supply/demand situation and to consult the EA on drought actions.	Water Resources & Supply Strategy Manager
Resource and Environmental Monitoring	To ensure monitoring is undertaken and reported.	Water Resources Team Manager; and WINEP & Permitting Team Manager
Hydrology and Modelling	To undertake water resources system modelling and to provide advice on surface water abstraction.	Senior Technical Advisor – Water Resources & Hydrology
Hydrogeology	To undertake groundwater modelling and to provide advice on groundwater abstraction.	Hydrogeologist

Water Supply	To operate Water Treatment Works as directed by the DMG, and to inform DMG of any Water Supply constraints.	Head of Water Supply
Distribution and Leakage	To operate the water network as directed by the DMG. To inform DMG of any Water network constraints. To ensure appropriate resources are available to undertake enhanced leakage find and fix.	Head of Water Networks
Water quality	To advise the Water Directorate and the DMG on any water quality issues with the potential to impact customer supplies that may arise as a drought develops.	Water Quality Manager
Demand	Reporting of customer demand.	Demand Planning Team Manager
Water Efficiency	To support dry weather messaging and Appeals for Restraint.	Water Demand Strategy Manager
Customer Services	To ensure customers are kept informed as and when Level drought actions are implemented.	Head of Customer Operations
Public Relations Lead	To ensure key stakeholders are informed of drought conditions and proposed drought actions.	Corporate Communications Manager
Communications Lead	To ensure all dry weather messaging and Appeals for restraint are actioned to agreed deadlines.	Head of External Communications
Maintenance	To continue with proactive maintenance. As a drought deepens, to ensure reactive maintenance is fast tracked.	Regional Maintenance Manager
Asset Delivery	To ensure the timely delivery of any new assets.	Head of Capital Delivery / Head of Integrated Delivery Services
Emergency Planning	Co-ordination of Emergency Plan for drought and Level 4 drought actions.	Business Continuity & Emergency Planning Manager

Table 3: Drought Management Group (DMG) meeting frequency.

Drought Action Level	Frequency of Drought Management Group (DMG) Meetings
Level 1	Fortnightly
Level 2	Weekly
Level 3	Daily
Level 4	Continuous in Emergency Meeting Room

Drought actions will be identified and implemented before a major resource difficulty occurs. Such actions will be reviewed on a regular basis in response to daily reporting of the resource situation.

Our drought strategy is to reduce demand in the early stages of drought, initially through enhanced leakage control, water efficiency interventions, pressure management and enhanced dry weather messaging through our respective media channels, followed by a formal appeal for restraint. This approach will reduce the likelihood of needing drought permit actions to address supply issues should the drought worsen.

As a drought develops the DMG will continue to review our supply demand situation and will implement drought actions as prioritised in Section 6. We will liaise with the Environment Agency throughout a drought, as detailed in Section 10.

3.4 Drought Management Process

3.4.1 Overview

The DMG will make decisions on the potential implementation of drought actions following the process summarised in Figure 9.

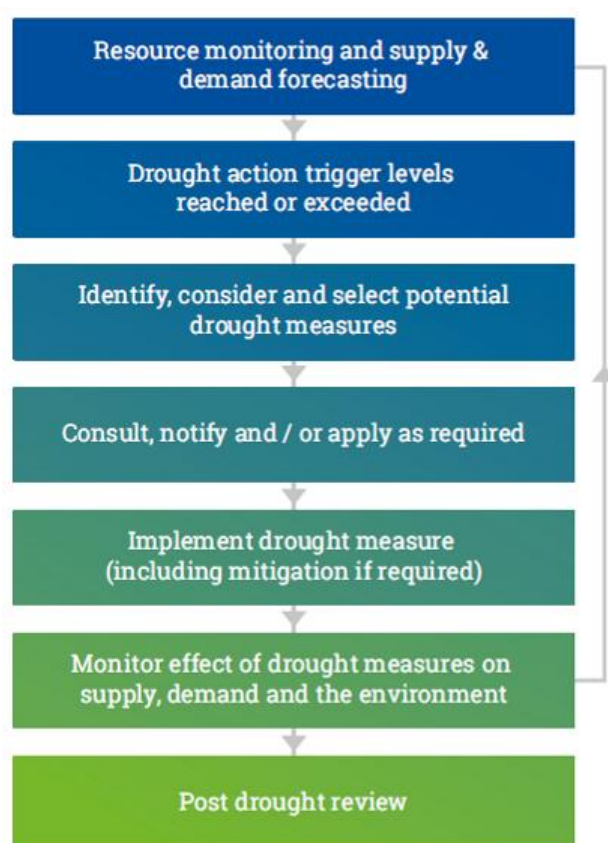


Figure 9: Drought Management Process.

The arrows in Figure 9 denote lines of communication both internally and externally, which are covered in Section 10.

The key elements of the above process are represented in the various chapters in this drought Plan.

3.4.2 Stage 1: Resource Monitoring and supply & demand forecasting

During this stage we undertake our business as usual water resource monitoring (e.g., rainfall, reservoir levels and groundwater levels) as well as water supply and customer demand forecasting which confirms whether we are entering a period of prolonged dry weather or not.

3.4.3 Stage 2: Drought Action Trigger levels reached or exceeded

The monitoring data from Stage 1 will tell us when the trigger level has been reached for implementing a drought action. The very first trigger is the formation of the DMG. As a drought intensifies, the DMG will brief our Executive Leadership Team and Board with increased frequency.

3.4.4 Stage 3: Identify, Consider and Select Potential Drought Actions

This is when the DMG will review the drought actions in our Drought Plan and assess which ones to implement. The final decision on implementing formal drought actions, such as a Level 1 Appeal for Restraint, lies with our Executive Leadership Team and Board. Section 6.2 summarises the types of drought actions and the order in which they will be implemented. We will always implement those actions to reduce demand before applying for Level 3 Drought Permit actions.

3.4.5 Stage 4: Consult, Notify and Apply for Selected Drought Actions

For all of our drought actions, we will need to engage with a range of stakeholders (see Section 10) including but not limited to neighbouring water companies, retailers and NAVs, Water Resources North, Environment Agency, Natural England, National Farmers Union (NFU) and CLA. This will ensure that we:

- are sharing our water resources position early; and
- can agree consistent messaging where other stakeholders are also ramping up their drought communications.

For Level 2 Temporary Use Bans (see Section 7.3) which restrict certain water use we are required to consult our customers and regulators.

3.4.6 Stage 5: Implement Drought Actions

Following completion of Stage 4, we will then implement the drought action. In the case of supply-side drought actions (see Section 8), we will also implement any mitigation measures (see Section 11.9) to reduce the impact a drought action might have on the environment.

3.4.7 Stage 6: Monitor Effect of Drought Actions on Supply, Demand and the Environment

Once a drought action has been implemented, we will monitor its performance and confirm the effect it has on customer demand, water supply, and in the case of supply-side drought

actions, the impact on the environment (see Section 11). This stage will continue to monitor the recovery from drought until the end of drought is reached.

3.4.8 Stage 7: Post Drought Review

Once our monitoring data has confirmed a drought has ended and drought actions have been withdrawn, we will then undertake a post drought review (see Section 14.2) to identify lessons learnt and to review and improve our drought plan process.

3.5 External Stakeholders

Understanding the context of drought outside of our own supply area is essential. The water industry's previous experience of drought confirms the importance of water companies, regulators and Defra working in a collaborative, fully informed manner. Following the formation of our DMG, we intend to work closely with Defra, Environment Agency, Water Resources North, other water companies, other sectors such as agriculture and National Drought Communications Group to ensure our messages are aligned. Coordination of the timing and content of messages to our customers helps considerably in removing confusion about what is happening, and what we need our customers to do.

3.6 Decisions & Consultation in a Drought

The final decision for selecting and implementing formal drought actions lies with our Executive Leadership Team (ELT). As a drought intensifies, the DMG will brief our ELT with increased frequency. When a trigger level is reached, the ELT will already be fully briefed and aware of its implications. They will therefore be able to grant immediate approval.

Once an action has been selected we will consult with the Environment Agency and other consultees including the Consumer Council for Water before notice of the application is made. We will also engage when required with affected areas of the Fire Service in order to ensure that any implications for operational fire-fighting have been adequately considered. This will be particularly important in the context of restrictions on water use.

4 RESOURCE MONITORING & DROUGHT INDICATORS

4.1 Overview

An important requirement of our Drought Plan is to regularly monitor the status of key drought indicators including rainfall, soil moisture deficit, reservoir levels and groundwater levels. This monitoring informs:

- our water resources position in terms of whether normal condition prevail or whether we are entering or in a period prolonged dry weather or drought;
- when to form our Drought Management Group (see Section 3); and
- when drought action triggers are reached and when to implement drought actions (see Section 5).

Section 4 provides a summary of each drought indicator and where appropriate confirms the type and length of the monitoring record. A description of how monitoring data can be analysed and used in support of a drought application is outlined in Section 4.4.

4.2 Water Resources Situation Reporting

During dry weather we produce a monthly Drought Management Report which is shared with the DMG. This report includes:

- Forecast weather
- Distribution Input data (comprises customer demand and leakage)
- Current national drought position
- Northumbrian Water specific updates comprising:
 - Rainfall in each WRZ
 - 3, 6, 9 and 12 month rainfall deficits
 - Soil Moisture Deficit (SMD) in each Drought Management Area
 - Raw water reservoir storage levels
 - Natural lake water levels
 - River flows (as reported by the Environment Agency)
 - Groundwater Levels
- Drought actions

The monthly report compares the monthly outturn for each parameter against the long term average for that month.

The report narrative confirms whether a Drought Management Area is entering a period of prolonged dry weather or not and the likelihood of licence condition constraints, needing any of our support schemes and/or activating drought actions.

4.3 Drought Indicators and Monitoring

We have grouped our drought indicators into two categories:

- Hydrological and meteorological indicators that measure the direct effect on the hydrological cycle. These include rainfall (total and effective), soil moisture deficit, temperature, weather patterns, groundwater (levels and recharge / drawdown trends), river flow, reservoir inflows, reservoir storage and abstractable quantities; and
- Customer demand and consumption

4.3.1 Rainfall

Rainfall is a primary indicator of drought severity. It has a direct effect on many hydrological parameters (soil moisture deficit, river flows and groundwater recharge) and can therefore directly impact on the quantities of water available for abstraction. Consequently, we will primarily use rainfall to inform our drought status and to justify any restrictions on customers use of water.

On a monthly basis we receive a rainfall spreadsheet containing monthly totals for the Environment Agency's hydrological areas from their Daily Rainfall Tool (DRT) together with monthly data from the Met Office HadUK dataset v.1.3.1.0, this dataset dates back to 1871.

Under normal (non-drought) conditions or periods of prolonged dry weather the rainfall data is analysed by the Water Resource team at the end of each month. In a drought, daily rainfall figures can be obtained directly as required.

4.3.2 Soil Moisture Deficit

Soil Moisture Deficit (SMD) is the amount of water required to raise a soil to field capacity. As a soil approaches field capacity, infiltration and ultimately aquifer recharge can potentially occur. The largest SMDs are found in the summer when rainfall is low and ambient air temperatures and evapo-transpiration rates are high. Aquifer recharge usually starts around late September/October when SMDs reach a critical threshold.

Similarly, to rainfall, monthly SMD figures are quoted in the Environment Agency's monthly bulletins and summaries on an area basis.

4.3.3 Groundwater Levels

The monitoring of groundwater levels is of greatest importance in our Berwick & Fowberry DrMA, as well as the groundwater stations supplying Sunderland, in the Weardale & Durham DrMA.

Groundwater levels in our pumped boreholes are automatically recorded every 15 minutes. In addition manual groundwater level measurements using a dip meter are regularly taken. Additionally, we can obtain groundwater levels in a number of monitoring boreholes to support us in making calculations of aquifer properties and the sustainability of our abstractions.

4.3.4 River Flows

We receive 15-minute flow data from the Environment Agency, via a daily email, for the following gauging stations:

- Ugly Dub (river North Tyne)
- Reaverhill (river North Tyne)
- Riding Mill (river Tyne)
- Morwick (river Coquet)
- Rowlands Gill (river Derwent)
- Chester Le Street (river Wear)
- Broken Scar (river Tees)
- Cow Green (river Tees)

The river North Tyne, Tyne, Wear and Tees are all regulated rivers and to ensure compliance with the requirement to maintain flows in those rivers NW also has telemetry installed on these rivers. Additionally, live data can also be obtained from the Environment Agency via their [Find river, sea, groundwater and rainfall levels - GOV.UK](https://find.river.gov.uk) website.

Longer records for key gauging stations are already held in electronic format and are used for water resources system modelling and statistical analysis.

4.3.5 Reservoir Levels

Reservoir levels in all our impounding reservoirs are either available by telemetry or are recorded three times a week during operator checks of the dam structures. During a drought, reservoir levels are a critical element of monitoring the overall resource situation and therefore the frequency of these manual readings would be increased to daily. The reservoir levels are monitored and compared to the control rule curves set out in the Kielder Operating Agreement (excluding Fontburn Reservoir which has operating curves outside of the KOA) (and actions to alter abstractions would be made in accordance with those stipulations. Reservoir storage levels are widely circulated both internally and to external organisations such as the Environment Agency.

Reservoir levels are graphed to compare current levels with historic drought years, mean levels and relevant control curves; these are reported weekly in a Reservoir Stock Report which is circulated to management and operational teams.

4.3.6 Weather Forecast

We have access to Met Office weather forecasts and will review short, medium and long term weather forecasts more regularly as we enter a period of prolonged dry weather and / or drought.

We took part in an Ofwat Innovation Fund project with the Met Office and other water companies to trial the Met Office's sub-seasonal demand model to aid operational decision making. In essence this sub-seasonal demand model is based on the Met

Office's forecast of weather systems to give us early warning (up to 6 weeks in advance) of weather that would significantly increase demand (for example through high customer demand from drought conditions). The aim of the model would be to give an earlier warning than currently available to help many teams in the business with planning and decision making. Information and results from the project can be found in Appendix 7.

4.3.7 Operational Reporting

Daily water availability and supply figures for all Drought Management Areas are provided in daily supply reports for internal purposes. These reports also consider daily demand and weather predictions.

Daily abstraction, transfer (raw water), reservoir levels and treated water volumes are regularly updated and used to optimise the use of the raw water system in accordance with the various reservoir control curves. We use an internally developed model on a weekly basis to undertake this optimisation process. In the event of a drought, this model would be run more frequently.

4.4 Reporting and Analysis of Drought Conditions

Every drought in the UK has a unique spatial and temporal signature. Droughts are also unique in their duration and severity, as well as their individual hydrological and consequential characteristics. It is important therefore to ensure that reporting and analysis of a drought situation takes account of the wide range of factors that potentially define it. Historical data can be used to demonstrate:

- a period of prolonged dry weather;
- an exceptional shortage of rainfall;
- whether a shortage of rain is affecting key surface and groundwater sources; and
- how our drought and resource position compares with neighbouring water companies and at a national level.

Our Water Resources Team maintains data on the indicators described in Section 4 and is responsible for its validation, analysis and reporting during a drought.

The majority of our water resources reports are circulated weekly outside of drought. Even during drought, this frequency of reporting should be sufficient to ensure our Drought Management Group is kept updated on ambient drought conditions and so that drought action decisions can be made in a timely manner. Drought reporting includes but is not limited to:

- Comparison of recent rainfall data with long term mean and minima for different sites representative of either supply or catchment area (point and area rainfall);
- Calculation of Standard Precipitation Index (SPI) over various timescales for individual catchments to categorise the severity of the drought.
- Comparison of rainfall trends, groundwater levels and river flows to assess the impact of low rainfall on sources (surface and groundwater);
- Assessment of trends in soil moisture deficit and groundwater levels and their impact on river base flows and prospects for recharge;
- Assessment of refill of impounding reservoirs; and

- Comparison of relevant hydrometric data against applicable drought measure trigger levels.

4.5 Historical Prolonged Dry Weather

Monthly rainfall totals from the Environment Agency's Daily Rainfall Tool (DRT) together with monthly data from the Met Office HadUK dataset v.1.3.1.0 were used to calculate 3-month, 6-month, 12-month, 18-month and 24-month Standard Precipitation Index (SPI) for the region. The results of this SPI analysis were used to understand the range of droughts that we have experienced in the region, see Figure 10.

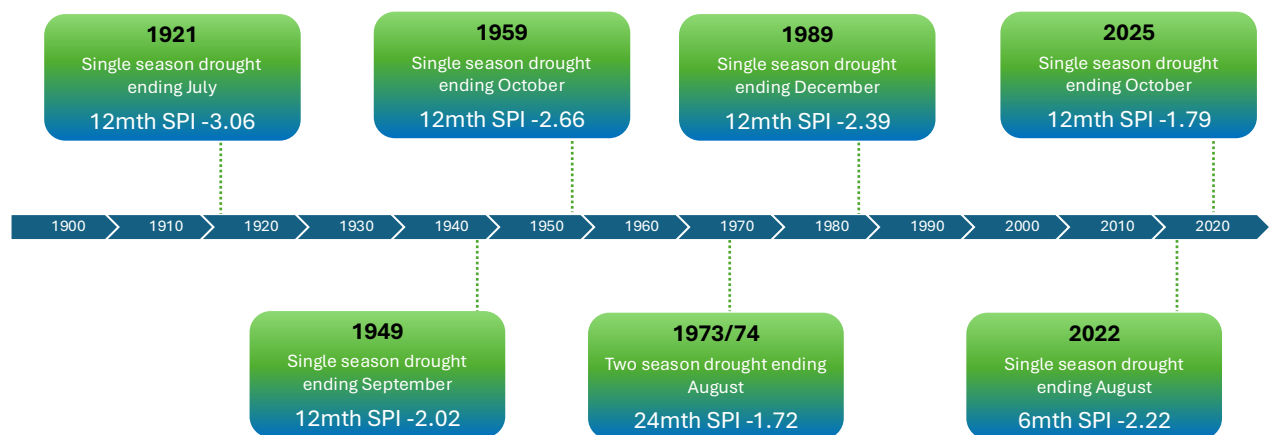


Figure 10: Timeline of historic droughts in the region

We have used historic inflows from a selection of the drought events identified, to model historic periods of prolonged dry weather and droughts with our current water resource network, to observe the effect of these on our river levels and reservoir stocks. The results of this modelling and the actions required are detailed in Appendix 8.

4.6 Dry Years

Plotting rainfall and temperature data in quadrants can graphically represent the weather conditions and show if a year would be classified as 'dry', 'normal' or 'wet'. Figure 11 demonstrates what years have been classed as 'dry' (bottom right quadrant) in the Northumbrian region since 1987. There are 5 years that are classed as dry in Northumbrian region.

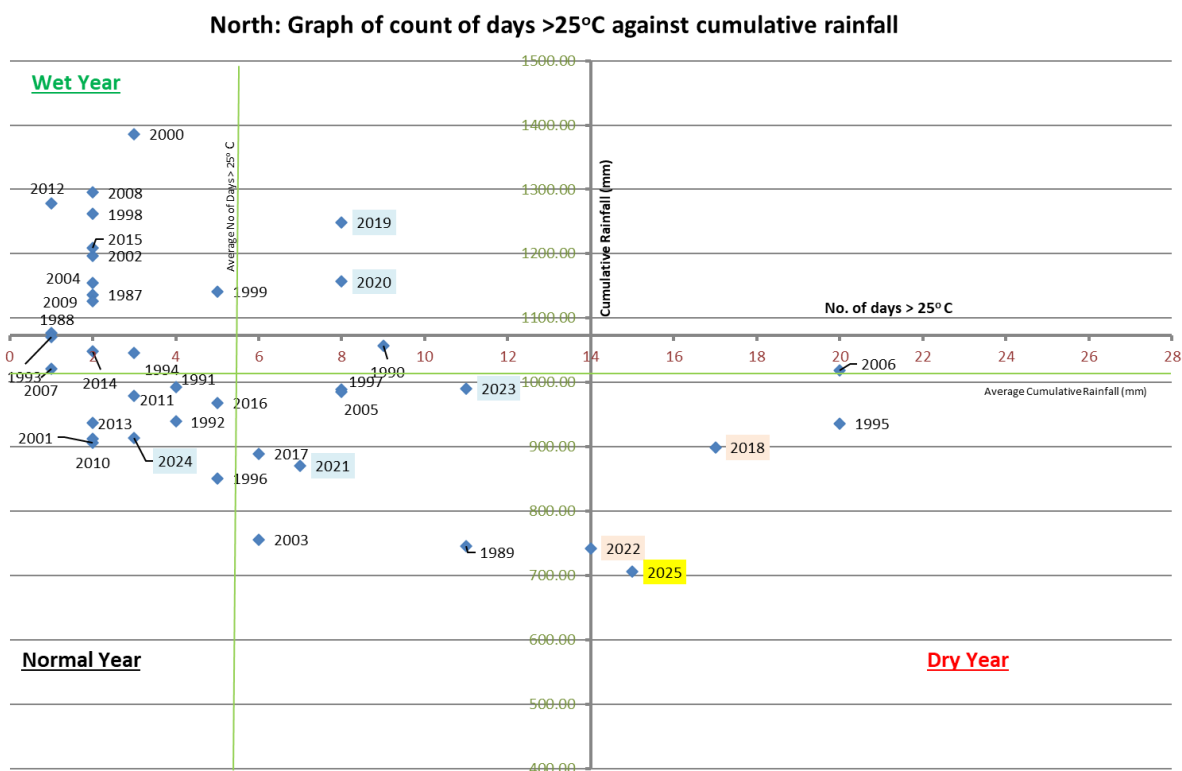


Figure 11: Quadrant graph for Northumbrian showing number of days with temperature greater than 25°C against cumulative rainfall.

5 DROUGHT TRIGGERS

5.1 Overview

An important tool in assisting our Drought Management Group (DMG) in deciding whether to implement drought actions is the use of trigger levels, defined for key surface and groundwater sources. This section of our Drought Plan presents the drought trigger levels and drought actions for each of our Drought Management Areas.

Drought trigger levels essentially split a resource, either reservoir storage or groundwater level, into sections, each section dictates what, if any, drought management actions are required. The drought trigger levels have been developed using modelling techniques and have been fully tested against historic and stochastic droughts.

The same drought trigger levels used to implement drought actions are also used during the recovery from and to confirm the end of a drought, i.e., consideration to withdraw drought actions is made once reservoir storage or groundwater levels recover above the trigger level. The development of our groundwater trigger levels can be found in Appendix 9. Worked examples are provided in Appendix 10, which demonstrate the implementation of these trigger levels against droughts used in our baseline planning assumptions for WRMP19, against plausible more extreme droughts using the results of our Drought Vulnerability Framework Assessment, as well as stochastic modelling. These examples show how we will introduce drought

actions in a timely manner, allowing an appropriate lead-in time, for example when introducing water restrictions or applying for a drought permit or drought order.

5.2 Surface water – reservoirs

Our reservoirs have control curves associated with each of them, designed using historical reservoir inflow sequences from 1926 to 2014 (which will be updated as part of WRMP29 using inflows up to 2025), and are intended to minimise the risk of reservoir stocks falling below the emergency storage levels. The curves define five zones of reservoir storage, which are categorised as follows:

Surplus Zone	Reservoir levels are healthy and abstraction can be maximised to meet demand.
Conservation Zone	Reservoir levels are becoming stressed, abstractions from the reservoir are reduced and abstractions from less stressed sources are increased to meet demand.
Drought Zone	Reservoir levels are highly stressed and there is a risk of crossing into the Emergency Storage zone. Abstractions are restricted to their minimum, typically the local demand that cannot be supported from other sources.
Emergency Storage	A volume of water that is reserved for use during a drought of greater intensity than has been experienced historically. Typically, enough water to maintain compensation flow and local demand for 30 days.
Dead Water	Volume of water that cannot be abstracted for water treatment, as it is below the lowest draw-off point.

The Kielder WRZ is a surface water dominated, complex, conjunctive use zone with most of its surface water intakes being directly supported via the Kielder Transfer Scheme. The remaining sources in the Kielder WRZ are supported via Kielder Reservoir due to our ability to transfer water around the potable water network.

Drought trigger levels have been assigned to four drought indicator sources in the Kielder WRZ:

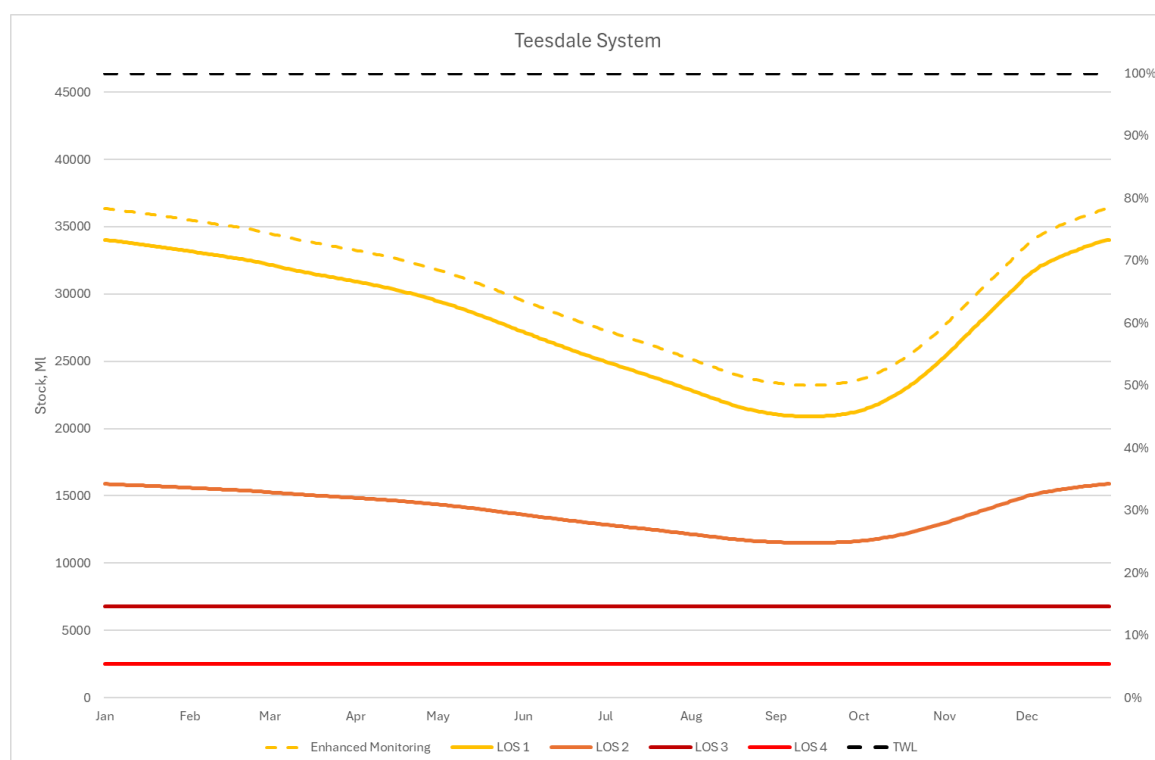
1. Whittle Dene System - combined storage of Colt Crag, Little Swinburne, West Hallington and East Hallington.
2. Derwent Reservoir
3. Weardale System - combined storage of Burnhope, Waskerley, Hisehope and Smiddy Shaw.
4. Teesdale System - combined storage of Selset, Grassholme, Balderhead, Blackton and Hury.

These reservoir groups were chosen as drought indicator sources as they best represent the resource availability in their respective Drought Management Area.

A combination of historic level analysis and use of operational control curves for the relevant reservoirs were used for each drought indicator source as a basis for the Levels of Service triggers, as shown in Table 4. The trigger levels for each of the drought indicator groups are shown in Figure 12 to Figure 15.

Table 4: Levels of Service Drought Action Triggers

Level of service		What this means
Level 0	Enhanced monitoring	Enhanced water saving communications, minimising abstraction from stressed sources and more frequent monitoring of resource position.
Level 1	Appeal for restraint	Ask our customers to use water wisely. For example, watering plants at night and not watering the lawn because grass is resilient to drought.
Level 2	Temporary Use Ban	Applies mainly to the domestic use of water and stops the use of a hosepipe or sprinkler for any garden watering or cleaning.
Level 3	Drought Order Ban	Expands what has been applicable to the domestic customer under the Temporary Use Ban, to non-domestic or commercial customers.
Level 4	Standpipe and rota cuts	A temporary reduction or nil supply of water at the customer tap and use of stand pipes to fill containers.



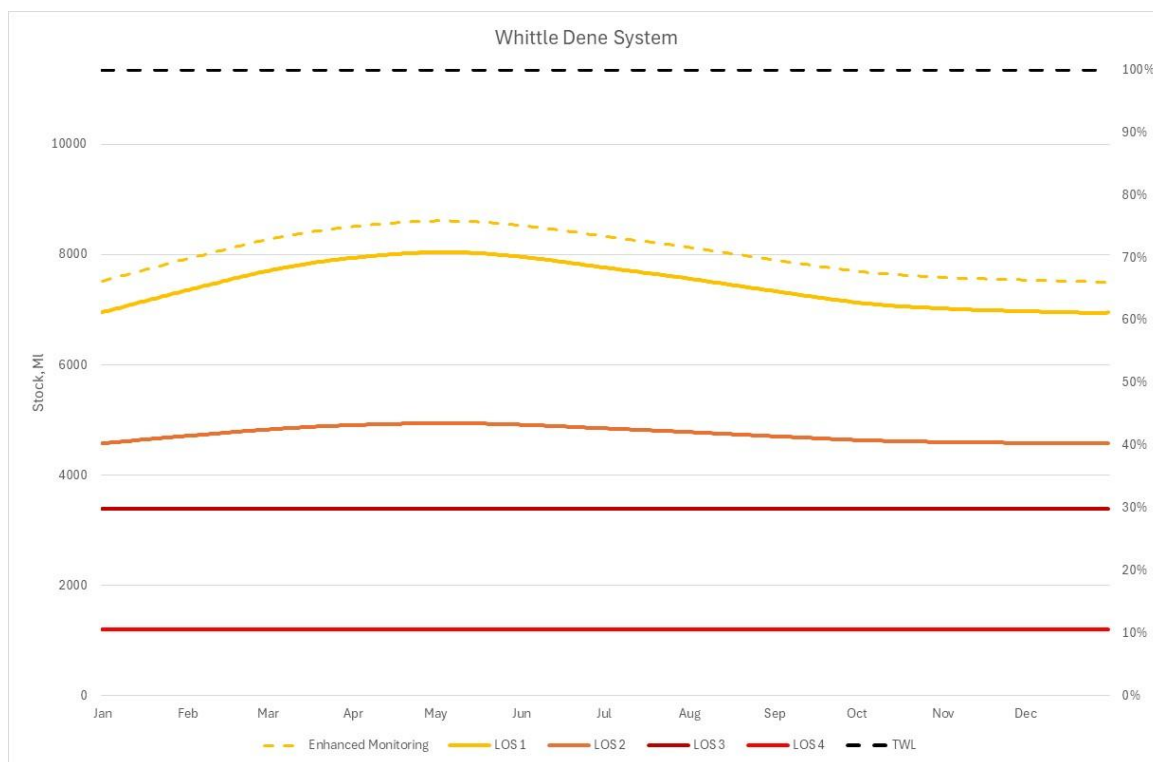


Figure 12: Whittle Dene System Level of Service triggers

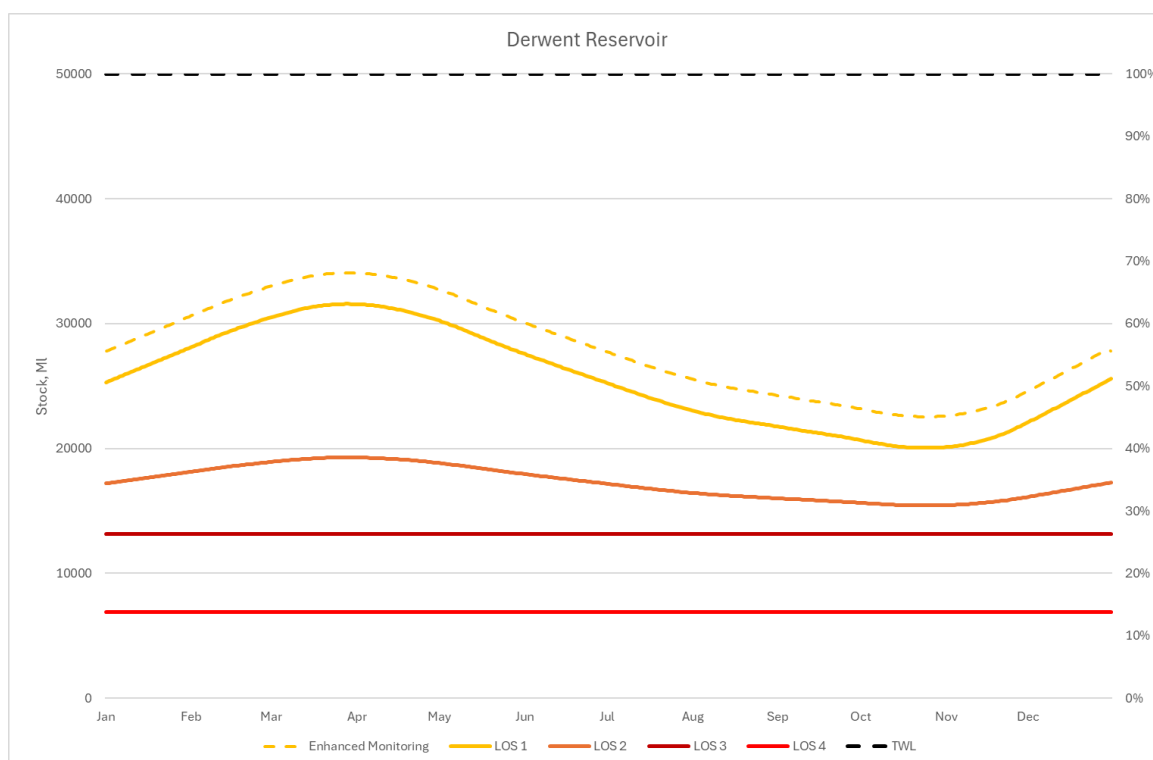


Figure 13: Derwent Reservoir Level of Service Triggers

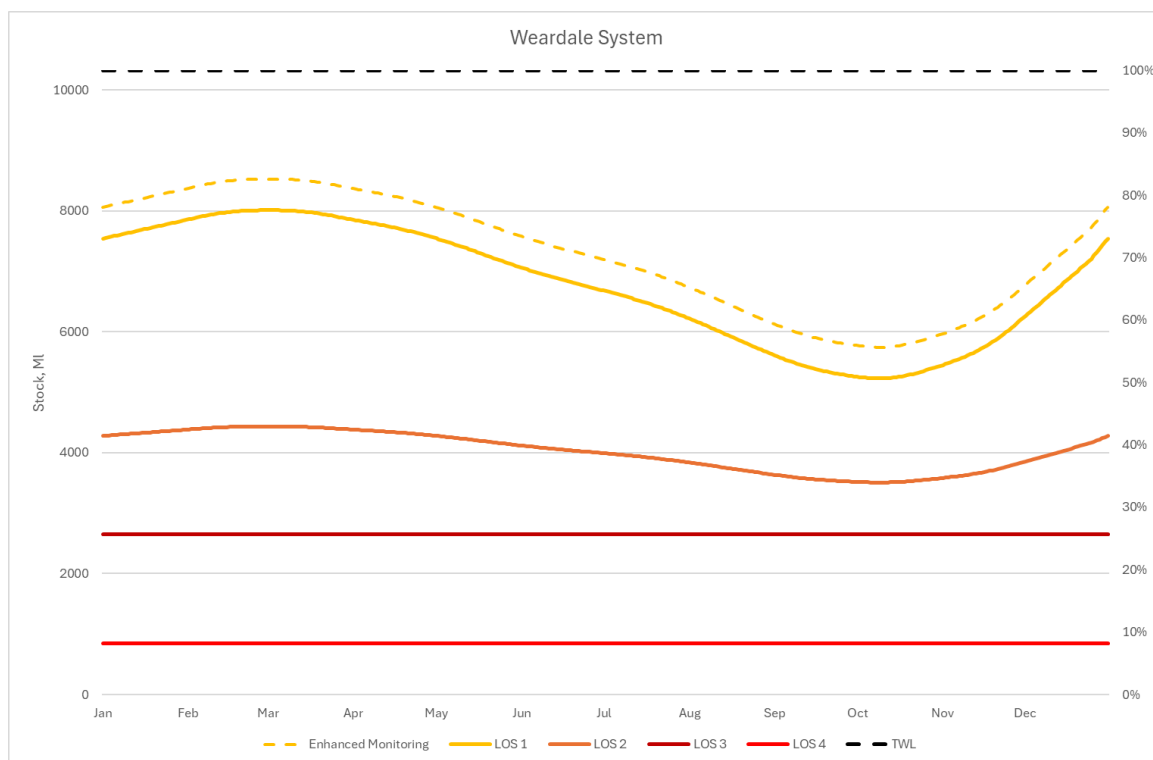


Figure 14: Weardale System Level of Service Triggers

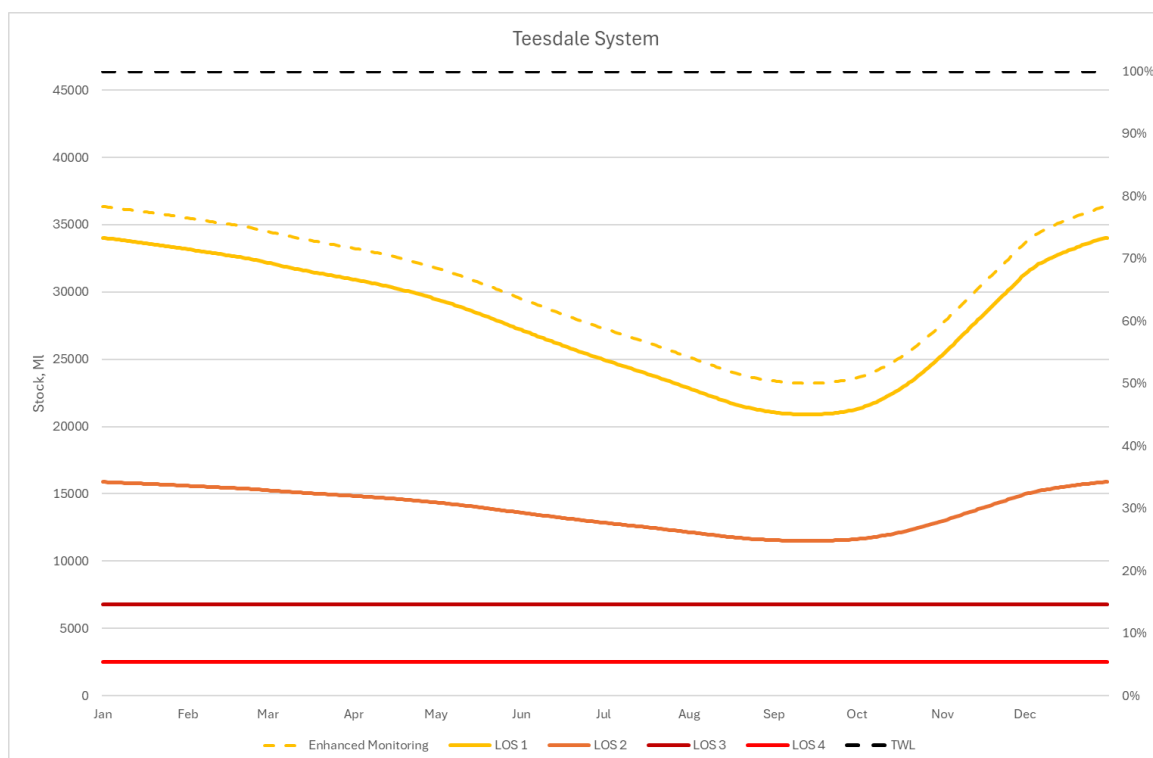


Figure 15: Teesdale System Level of Service Triggers

5.3 Surface water – rivers

The three major rivers that we abstract from (Tyne, Wear and Tees) are all regulated rivers and therefore subject to minimum maintained flow requirements. This means the river flow must be maintained at or above the minimum maintained flow. As these rivers can all be supported from Kielder Water via the Tyne-Tees Transfer, we are able to increase abstraction and maintain river flows above the minimum maintained flow. Therefore, there are no drought triggers applicable to the river levels as regulating the rivers to maintain available abstraction at fully licenced capacity is a business as usual operation.

5.4 Groundwater

5.4.1 Weardale & Durham Drought Management Area

Although most of our supply to the Kielder WRZ comes from surface water, in Sunderland and parts of County Durham our supplies are supplemented by groundwater from the Magnesian Limestone aquifer. Our eight groundwater stations are independently operable abstractions and treatment plants, which can send treated water to local service reservoirs or directly into the distribution network. The network is also designed in such a way that no areas will lose supply if there is an outage at one or more groundwater stations, as it is completely interconnected with the surface water-fed supply network.

It is not necessary for the Kielder WRZ groundwater sources to have their own drought triggers. Demand-side drought actions would be implemented in line with the wider WRZ, while source-specific supply-side actions would be implemented on a case by case basis, dependent on the drought response of the individual sources. Our groundwater modelling shows that, although the Kielder WRZ groundwater sources are from the same aquifer, each is likely to respond differently in a drought).

Source-specific supply-side actions for the Sunderland groundwater sources are also limited as in many cases they already operate at their abstraction constraints, an offset in groundwater level of 20m between that of the aquifer and the underlying, contaminated Coal Measures. This is to prevent mine water from contaminating the magnesium limestone aquifer from which we abstract. We regularly liaise with the Environment Agency and the Mining Remediation Authority, who operate groundwater pumping stations to control rebounding levels in the Coal Measures, to ensure that we adhere to these levels. This process would continue through and beyond a drought period.

The conceptual model of the Magnesian Limestone aquifer, developed by the EA, shows that if groundwater levels were to fall in response to drought, the response in the underlying Coal Measures would not be of the same magnitude and would not occur within the same timeframe. It would be necessary, in that case, to prioritise the health of the aquifer, as mine water contamination is irreversible, and either reduce our abstraction rates or work with the Mining Remediation Authority to increase theirs.

In practice, we would only expect to see a reduction in deployable output from the Sunderland groundwater sources in the case of most extreme drought, as the values reported in our WRMP24 already include a reduction to account for a modelled 1-in-500-year return period drought.

5.4.2 Berwick and Fowberry Drought Management Area

This DrMA is entirely fed by groundwater supplies, abstracting from the Fell Sandstone aquifer. Groundwater levels take longer to respond to dry weather and droughts than surface water reservoir levels. Analysis of historic groundwater levels shows that drought-induced lows occur between October and February. However, customer demand in the Berwick and Fowberry DrMA follows a seasonal pattern, due to summer tourism, peaking between June and September, which gives our system considerable resilience to the effects of drought. Nevertheless, prolonged drought, affecting multiple cycles of aquifer recharge, could potentially require drought actions to be implemented.

Our previous drought plan used drought triggers based on the storage level in the aquifer, represented as a percentage of saturated aquifer thickness remaining, calculated from operational borehole groundwater level data. We have reviewed this approach, as using abstraction borehole data can mask, or be masked by, operational issues, like naturally occurring encrustation of the borehole rising main.

In an aquifer, the sustainability of an abstraction is measured by the rate of change in groundwater level. Therefore, for this drought plan, we have adopted an approach that monitors groundwater levels in observation boreholes unaffected by abstraction, and compared them to historic levels, thereby assessing the impact of seasonal fluctuations in effective rainfall recharge that are indicative of drought.

For the Berwick and Fowberry DrMA we have used groundwater level data from the Environment Agency's 'Thornton Park' observation borehole from 1991 to 2024 (inclusive). With these historic data, we have created a model which tells us what the groundwater level in an average year would be on any given day of the year. We employed curve shifting of these generated data to represent the expected groundwater level in the years with the greatest and least amount of recharge since 1991, by moving the whole curve to match the actual data from the maximum and minimum values on record. These maximum and minimum groundwater levels were seen on 06/02/2021 and 03/11/1995 respectively. That lower curve represents our supply-side drought trigger, as we have always been able to meet our supply needs above that level, while anything below it represents an unprecedented low. Unlike demand, where there are multiple levels of service restriction, from a supply perspective, where our drought actions are limited, there is simple binary choice of when to implement them. If the Thornton Park observation borehole groundwater level should fall below its daily drought trigger level, we will assess our current supply situation, and the drought management group will decide whether or not to enact drought actions (see Section 6.2).

The historic data are shown alongside the modelled drought triggers in Figure 16, and illustrates that this trigger would have initiated consideration of supply-side groundwater drought actions in this DrMA by our drought management group in the winters of 1994, 1995, 2003, 2006 and 2018.

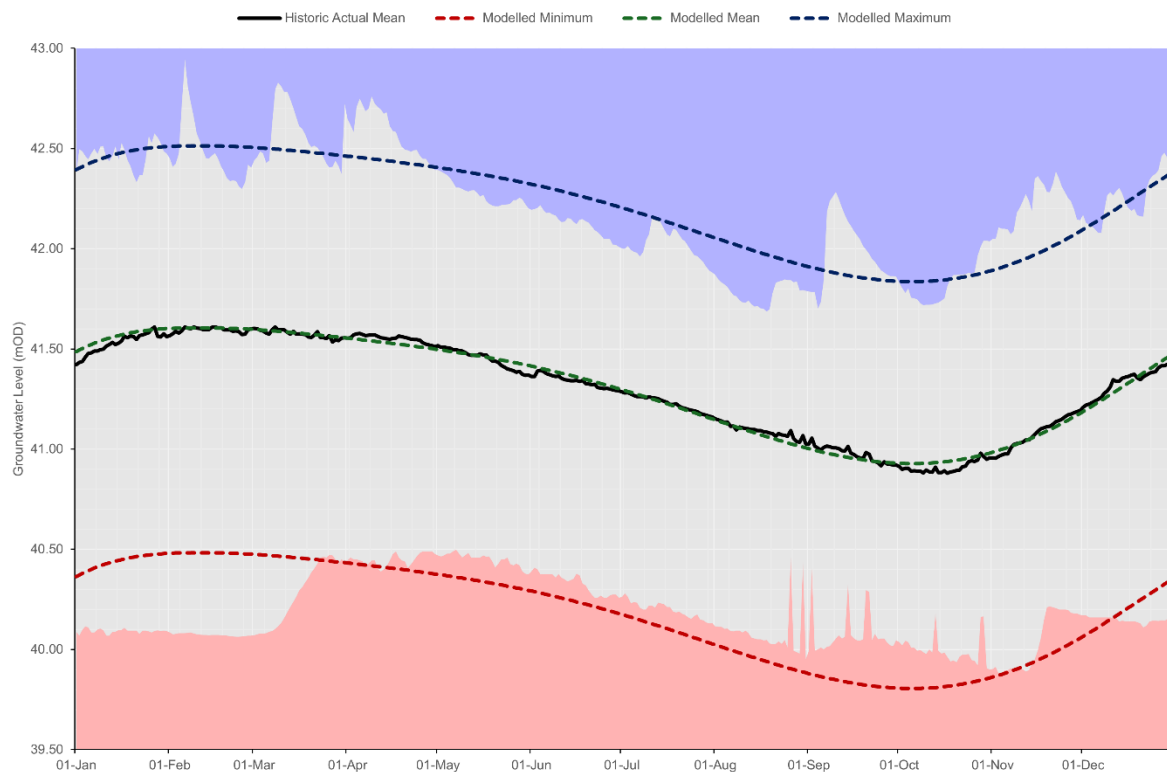


Figure 16: Berwick & Fowberry groundwater triggers based on Thornton Park OBH groundwater level

5.5 Demand Drought Triggers

5.5.1 Distribution Input

Plotting current DI with historic data clearly displays where current demand lies against previous maximum and minimum weekly averages. As well as where current demand sits against the WRMP dry year critical period forecast and previously reported DI. This can help identify if a period is on course to have higher than usual demand and identify a drought. Figure 17 shows current Berwick DI against the different levels of DI previously experienced between 2018 and 2025. Maximum demand remains reasonably flat, but we see greater volatility in minimum demand. We can track values and other metrics (WRMP forecast and average DI) and compare this against current DI (dark blue line).

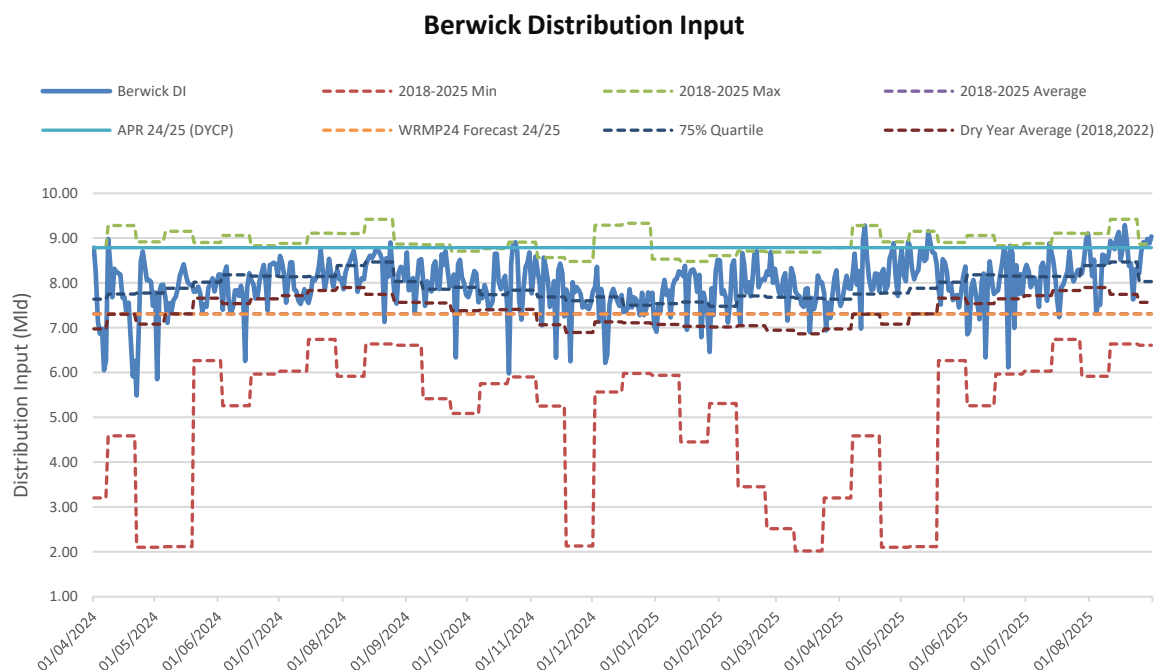


Figure 17 : Berwick distribution input, with various demand levels including current year, forecasted, dry year, minimum and maximum between 2018-2025.

5.6 Understanding the drought vulnerability of our supply systems

We carried out an assessment which uses the principles of the UK Water Industry Research (UKWIR) ‘Drought Vulnerability Framework’ (17/WR/02/12), for our 2022 Drought Plan, the details of which can be found in Appendix 8.

The Drought Vulnerability Framework assessed the resilience of the Kielder System to droughts ending in October and to a range of durations (6, 12, 18, 24 and 36 months) and return periods (100, 200, 500 and 1000 years). The demand placed upon the system during the drought modelling was the Price Review 2019 (PR19) deployable output of 836Ml/d.

The number of days of failure of the system were recorded for each drought, with failure occurring either when the demand could not be met, or when the emergency storage level of a reservoir was reached. Only the 1 in 500 and 1 in 1,000 droughts for the six-month duration had any failure days, as shown in Table 5.

Table 5: Failure days for various drought durations and return periods

RAINFALL RETURN PERIOD	DURATION (MONTHS)				
	6	12	18	24	36
50	0	0	0	0	0
100	0	0	0	0	0
200	0	0	0	0	0
500	20	0	0	0	0
1000	114	0	0	0	0

Note that since carrying out the drought vulnerability assessment we have published our WRMP24 that shows that the Kielder WRZ is resilient (i.e. no demand failures to a 1-500 drought event with the slightly reduced deployable output of 827Ml/d). We will review our drought vulnerability assessment as part of the WRMP29 process and provide an update in the WRMP29 report.

5.7 Testing our Drought Plan Triggers

5.7.1 Kielder DrMAs

We have tested the effectiveness of our drought plan triggers for the DrMAs within the Kielder WRZ with respect to meeting our levels of service against:

- a selection of historic droughts in the region; and,
- a more extreme droughts using the results of the stochastic modelling carried out for WRMP24.

The results of the testing, including worked examples, are presented in Appendix 10. The worked examples:

- show how we would expect our drought plan to work under the drought scenarios;
- confirm what actions we would take; and,
- demonstrate the expected time frames and durations for each action.

5.7.2 Berwick & Fowberry DrMA

We have tested the effectiveness of our drought plan triggers for the Berwick & Fowberry DrMA with respect to meeting our levels of service against:

- a historic drought in the region.

The results of the testing, including a worked example, is presented in Appendix 10.

6 WHAT WE WILL DO IN A DROUGHT

6.1 Formation of Drought Management Group

The first action to be implemented in the lead up to a drought will be the formation of our Drought Management Group (DMG) as detailed in section 3.3, which coordinates our drought management process. Drought actions will then be implemented in the order presented in Table 6 as determined by the DMG, and ratified by our Executive Leadership Team and Board. The need for drought action implementation will be identified from monitoring of our drought indicators (see Section 4) in relation to our trigger levels (Section 5).

6.2 Drought Actions

Our Drought Plan drought actions are set out in Table 6. We have categorised our drought actions into demand-side and supply-side actions, aligned with drought severity Levels 1 to 3. Level 0 - Business as usual (BAU) dry weather actions are also included for completeness. Level 4 emergency actions for drought fall under our Emergency Plan and are therefore excluded. If needed, we will implement the drought actions in the order they appear in Table 6 (i.e. Level 1 first, then Level 2 and so on). The actions within a Drought Level will be implemented as agreed by the DMG.

We will apply drought actions at an area appropriate to the action, as follows:

- Site specific supply-side actions will be applied at a Drought Management Area level (see section 2.4).
- Level 1 demand side-actions will be applied at a Water Resource Zone level to align with Environment Agency drought areas (see section 2.7.2).
- Level 2 and Level 3 demand-side actions will be applied at a Drought Management Area level or by Local Authority Areas, as determined by the DMG, to minimise the number of customers under restrictions.

We will implement our demand-side actions in a timely manner and will have them in place long enough to have a measurable impact on water demand, which we measure continuously and report daily. Our strategy is to prioritise actions to reduce demand, at each drought level, before implementing supply-side actions. Should drought permits or orders be required, we will include details of the demand measures we have used, and the demand savings made.

The supply-side actions with the least impact on the environment would be implemented first. Our prioritisation has been informed by the environmental assessment of our drought actions, as detailed in Section 11.

Our demand-side actions are detailed in Section 7 and Appendix 11. Appendix 11 also provides information regarding unconstrained demand-side drought actions that were assessed for feasibility but were not taken forwards into our drought plan.

Our supply-side actions are detailed in Section 8. We have included summaries of each supply-side drought action in Appendix 12, which contain the following information:

- Drought Level
- WRZ and DrMA where action will be applied
- Summary of action
- Trigger
- Estimated benefit
- Barriers to implementation
- Environmental Impacts
- Implementation timescales
- Priority order for implementation

Appendix 12 also provides information regarding unconstrained supply-side drought actions that were assessed for feasibility but were not taken forwards into our drought plan.

6.3 Rejected Drought Actions

Appendices 11 and 12 contain details of our unconstrained demand-side and supply-side drought actions which we have considered but were found not to be viable to include in our drought plan, along with the rejection justification.

Table 6: Drought Actions

Drought Stage	Drought Level	Demand-side actions	Supply-side actions
Normal	Level 0 (BAU)	All WRZs: - Network optimisation to reduce output of Water Treatment Works (WTWs) which are supplied by a stressed water resource. - Customer communications - As per our WRMP24 demand management selected options: - Leakage detection and repair suite of options - Water efficiency activity (non-household and household) - Compulsory smart metering - Government Led Interventions	All WRZs: - Raw water and water treatment works optimisation. - Coordination Planning to optimise planned outage. Kielder WRZ: - Operation of the Kielder Transfer Scheme.
Prolonged dry weather	Level 1	All WRZs: Appeal For Restraint - Enhanced dry weather messaging - Additional resource for find & fix leakage teams - Encourage reporting of leaks - Stop proactive flushing - Optimising water supply and network to reduce output of WTWs which are supplied by a stressed water resource; as well as increased control over potable water storage levels. - High water use alerts to customers - Water saving calculator promotion - Target 15m head at the critical point in each pressure managed area.	Kielder WRZ: Road tankering from Whittle Dene WTW to service reservoirs to augment spring supplies at Allenheads and Carrshields WTW, if required.
Drought	Level 2	All WRZs: Temporary Use Bans (TUBs) - Further additional resource to find & fix leaks - Offer to repair the highest volume customer-side leaks (CSLs). - Challenge illegal use - Water Efficiency Home Audits to targeted areas - Education workshops - community and schools - Community Outreach & business funding - Tourism support	
	Level 3a	All WRZs: Non-Essential Use Bans (NEUBs) - Minimise WTWs outflows at all water stressed sourced WTWs and maximise elsewhere - Manage the network to use potable water stored as resilience for changeable demands, managing our network storage levels at low levels, increasing risk of maintaining supply to customers. - Hard hitting communications - Target 10m head at the critical point in each pressure managed area. - Installation of flow regulators to households (HHs) - Shower device offering - Flow restrictors to non-households (NHHs)	Kielder WRZ: - Reduce compensation discharge from Burnhope Reservoir. - Cease environmental spate releases and revert to baseflow compensation discharges at Derwent Reservoir and Fontburn Reservoir.
Severe Drought	Level 3b	All WRZs: - Reduce Ships Watering - Removal of Statutory Exceptions on TUBs and NEUBs - Manage Strategic Operational Plan (SOP) storage to low-low alarm levels increasing risk of maintaining supply to customers. - Seasonal Tariffs for smarted customers	Berwick & Fowberry WRZ: - Lower borehole pumps at Murton borehole, Thornton Mains borehole and Bleak Ridge borehole. - Drought permit to increase daily and annual abstraction volumes at Bleak Ridge borehole.

7 DEMAND-SIDE DROUGHT ACTIONS

This section of our Drought Plan describes the demand-side drought actions that we may implement to address potential water supply shortages during a drought. The actions fall into three categories; water efficiency, leakage and networks, and other demand-side actions.

Table 7 gives a summary of all the demand-side drought actions. It is split between actions that were included in our Drought Plan 2022 and new actions we have added for our Drought Plan 2027 and includes the average saving per action at the respective drought level.

The process flow for initiating demand-side drought actions through the levels of drought is shown in Figure 18.

Our demand-side drought actions are assigned to the different levels of drought and an estimated saving and time to implement is assigned to each action along with a risk assessment, how to track effectiveness of the action and options to fast track.

It is important to recognise that all droughts are different and therefore the impact of demand measures will vary between droughts.

Please refer to Appendix 11 for detailed information on the individual drought actions, including estimated savings, implementation timetables, tracking effectiveness, fast-track options and risk assessments for the demand-side actions.

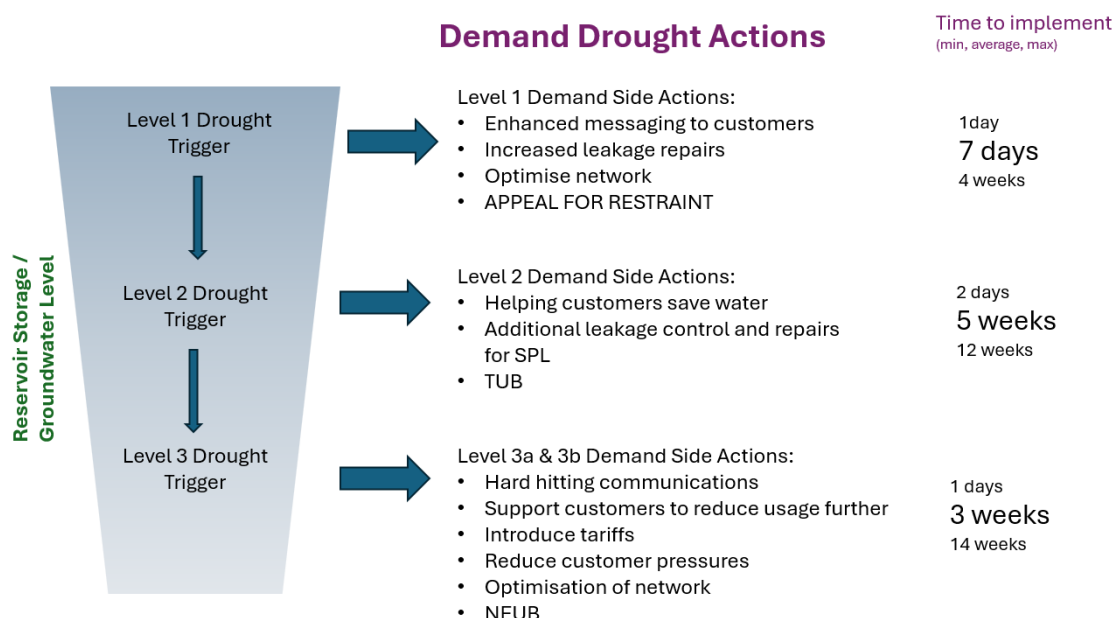


Figure 18: Demand-side drought actions process flow.

Table 7: Summary of Demand-side Drought Actions

Drought Stage	Drought Level	DP22 Demand-side actions	New actions for DP27	Average Saving per action in drought level MI/d
Normal	Level 0 (BAU)	BAU Network optimisation to reduce output of Water Treatment Works (WTWs) which are supplied by a stressed water resource Customer communications As per our WRMP24 demand management selected options: - Leakage detection and repair suite of options - Water efficiency activity (non-household and household) - Smart metering installations - Government led interventions		Please see WRMP24
Prolonged dry weather	Level 1	APPEAL FOR RESTRAINT Enhanced dry weather messaging Additional resource for find & fix leakage teams Encourage reporting of leaks Stop proactive flushing Optimising water supply and network to reduce output of Water Treatment Works (WTWs) which are supplied by a stressed water resource; as well as increased control over potable water storage levels.	High water use alerts to customers Water saving calculator promotion Target 15m head at the critical point in each pressure managed area	1.22
Drought	Level 2	TUB Further additional resource to find and fix leaks Offer to repair the highest volume Customer-side leaks (CSLs)	Challenge illegal use Water Efficiency Home Audits to targeted areas Education workshops - community and schools Community Outreach & business funding Tourism support	2.19
	Level 3a	NEUB Minimise WTWs outflows at all water stressed sourced WTWs and maximise elsewhere Manage the network to use potable water stored as resilience for changeable demands, managing our network storage levels at low levels, increasing risk of maintaining supply to customers.	Hard hitting communications Target 10m head at the critical point in each pressure managed area Installation of flow regulators to Household's (HHs) Shower device offering Flow restrictors to Non-Households (NHHs)	3.04
Severe drought	Level 3b	EXTREME DROUGHT ACTIONS Reduce Ships Watering Removal of Statutory Exceptions on TUBs and NEUBs Manage Strategic Operational Plan (SOP) storage to low-low alarm levels, increasing risk of maintaining supply to customers.	Seasonal Tariffs for smart metered customers	0.34

7.1 Level 0 BAU Demand Drought Actions

The demand-side measures we implement during typical dry weather conditions are outlined in our Water Resources Management Plan 2024 (WRMP24). These measures represent our business-as-usual activities and encompass leakage reduction, network performance improvements, customer engagement, water efficiency initiatives, and our metering programme. For further details, including estimated water savings, please refer to the WRMP24. An update on our metering programme can be found in Appendix 14.

7.2 Level 1 Demand Drought Actions

During prolonged dry weather, our demand-side drought actions will focus on encouraging our customers to use water wisely. For more information on communications with our customers, please see Section 10. We will also support our customers in using water wisely through promoting our online water saving calculator and high-water use alerts for customers on a smart meter (both household and non-household).

In a Level 1 drought, we will consider stopping proactive mains flushing and other planned work to focus on finding and fixing leaks. We will also encourage our customers to proactively look for and report visible leaks through our online leakage portal.

We can optimise our distribution network to become majority river sourced, manage network storage to below normal target levels and target 15 meters at the high points of each pressure managed area.

The time to implement a level 1 demand drought action ranges from 1 day to 4 weeks.

The average saving for a level 1 demand drought action is 1.22 MI/d. Table 8 shows the estimated total saving for drought actions for each WRZ.

Table 8: Level 1 demand-side actions total savings in MI/d

Drought Level	Drought Severity	Demand Actions	Berwick	Kielder
Level 1	Appeal for restraint	Appeal For Restraint	0.14	11.66
		Water Efficiency Drought Actions	0.47	5.05
		Leakage & Network Drought Actions	0.18	10.32
		Demand (Other) Actions	0.03	3.99
		SUM MI/d	0.83	31.02

7.2.1 Appeal for Restraint

As a period of prolonged dry weather develops, we may need to implement a formal Appeal for Restraint. We would use all of our communication channels (e.g. social media and press releases) to formally ask our customers to use water wisely. Examples of messages are detailed in our Communications Plan (Section 10) and include ‘having a shorter shower – we recommend 4 minutes’ and ‘use of a water butt to collect and store rainwater’.

We would expect to be able to implement this within five days as part of the Communications Plan. The estimated saving is set at 1.7% as per the latest UKWIR report findings from the 2022 drought on level 1 actions². The effectiveness of the formal appeal can be tracked through a reduction in daily DI.

7.3 Level 2 Demand Drought Actions

As a drought develops our demand actions will build on Level 1 actions and include helping our customers to save water through water efficiency home audits, education workshops, community outreach and funding water saving projects in businesses.

Additional technicians, sniffer dogs (who can detect chlorinated water), satellite surveys and noise logger surveys will be mobilised through our contract partners to support more leak detection. And additional crews will be contracted to support increasing leak repair activities. We will also consider a temporary change to our policy to offer free repairs for the highest volume customer supply pipe leaks. More employees will also be trained in challenging suspicious illegal connections across the region.

The time to implement a level 2 demand drought action ranges from 2 days to 12 weeks.

The average saving for a level 2 demand drought action (excluding TUB) is 0.14 MI/d. Table 9 shows the estimated total saving for drought actions for each WRZ.

Table 9: Level 2 demand-side actions total savings in MI/d

Drought Level	Drought Severity	Demand Actions	Berwick	Kielder
Level 2	Drought (TUB in place)	TUB	0.21	26.55
		Water Efficiency Drought Actions	0.03	1.41
		Leakage & Network Drought Actions	0.07	0.18
		Demand (Other) Actions	0.00	0.02
		SUM MI/d	0.31	28.16

² UKWIR (2023) Review of the 2022 Drought demand management measured 23/WR/02/18

7.3.1 Temporary [Water] Use Bans (TUB)

Temporary Use Bans, commonly referred to as TUBs, are powers granted to water companies to impose restrictions on customers' water use. Previously these were referred to as 'hosepipe bans' but they were modified in 2010 under the Flood and Water Management Act to cover a wider range of restrictions.

TUBs can be introduced quickly, seven days after advertising in the affected area. They predominantly focus on water use by domestic customers because this provides the largest water saving and helps protect public services and the economy.

Following a review of the 2022 drought demand management measures³, the introduction of a TUB produced a 3.34% reduction in DI and a 6.60% reduction in household demand and is deemed to have a significant impact on demand reduction. To maximise the effectiveness of TUBs, it is recommended that they are implemented early on in the Spring-Summer season.

When we need to introduce a TUB, we will take account of the WaterUK / UKWIR Code of Practice and Guidance on Water Use Restrictions. This provides guidance on the effective implementation of water use restrictions by way of Temporary Use Bans (TUBs) and Drought Orders (DO) to help manage demand during times of drought.

We will ensure that we implement a TUB in a proportionate manner, by considering the balance between any impact on an individual or group of customers and overall public interest. In line with the Code of Practice, we will consider among other aspects:

- the nature and seriousness of the water supply situation;
- the water savings from introducing the TUB;
- the feedback from stakeholders including neighbouring water companies and Water Resources East; and
- whether the restriction will impact on vulnerable customers or groups.

Detailed information regarding TUBs is presented in Appendix 15-17 including definitions, triggers and how we will introduce and withdraw a TUB in what we believe to be a proportionate and reasonable way.

7.4 Level 3a Demand Drought Actions

As we move into a severe drought our demand drought actions become more intense. Customers will be asked to significantly reduce their water use through high impact communications. We will support our customers in reducing their water use further through the installation of flow regulators, a digital device to reduce showering time and flow restrictions on non-household customers.

We will minimise water treatment works (WTWs) outflows at all water stressed sourced WTWs and maximise elsewhere. We will also change sections of the network to use

³ UKWIR (2023) Review of the 2022 Drought demand management measured 23/WR/02/18

potable water stored as resilience for changeable demands, closely managing our network storage levels at low levels and target 10 meters at the high points of each pressure managed area.

The time to implement a level 3a demand drought action ranges from 1 day to 14 weeks.

The average saving for a level 3a demand drought action (excluding NEUB) is 1.83 MI/d. Table 10 shows the estimated total saving for drought actions per WRZ.

Table 10: Level 3a demand-side actions total savings in MI/d

Drought Level	Drought Severity	Demand Actions	Berwick	Kielder
Level 3a	Drought (NEUB in place)	NEUB	0.16	13.71
		Water Efficiency Drought Actions	0.00	0.01
		Leakage & Network Drought Actions	0.08	10.17
		Demand (Other) Actions	0.05	6.16
		SUM MI/d	0.30	30.06

7.4.1 Non-Essential Use Ban (NEUB)

On average, once every 200 years, a drought and corresponding shortage of raw water may become so acute that we have to implement restrictions on the use of water that are more severe than those introduced in Level 2 under a Temporary Use Ban (TUB). These tougher restrictions are known as a Non-Essential Use Ban (NEUB).

NEUBs are a set of measures granted to water companies to impose further restrictions on the use of water as long as certain legislative test are met. These powers are sought by applying to the Secretary of State at Defra for a drought order.

It is very difficult to estimate the effect of this type of water use restriction on customer demand as there is very little data available. We have assumed that further restrictions on water use beyond that of a temporary use ban will yield an additional reduction in DI of 2% made up of a 9% reduction in NHH demand. This will bring the total demand saving (Appeal for Restraint + TUB + NEUB) to 10.3% reduction in DI.

Before applying for a Drought Order to restrict water use, water companies are expected to have made full use of their powers under the WIA 1991, as stated in the Explanatory Memorandum to the Water Use (Temporary Bans) Order 2010:

“By extending the water uses that water undertakers may prohibit under section 76(1) of the Act [WIA 1991], water undertakers may be able to delay or avoid the need for drought orders under the Water Resources Act 1991”

The Drought Direction 2011 sets out the restrictions available under an Ordinary Drought Order, as allowed for under Section 73 of the Water Resources Act 1991 (WRA 1991). These are:

- Watering outdoor plants on commercial premises;
- Filling or maintaining a non-domestic swimming or paddling pool;
- Filling or maintaining a pond;
- Operating a mechanical vehicle-washer;
- Cleaning any vehicle, boat, aircraft or railway rolling stock;
- Cleaning non-domestic premises;
- Cleaning a window of a non-domestic building;
- Cleaning industrial plant;
- Suppressing dust; and
- Operating cisterns.

In order to grant a Drought Order under the WRA 1991 73(2), the Secretary of State must be satisfied that: “By reason of an exceptional shortage of rain, a serious deficiency of supplies of water in any area exists or is threatened”.

The potential timescales for introducing restrictions by recourse to a Drought Order are significantly longer than those for Temporary Use Bans under the WIA 1991, and the Secretary of State would typically require a public inquiry or hearing to be held if an objection were received.

Under Schedule 8, paragraph 3(c) of the WRA 1991, we would be required to publish a notice of our application for a Drought Order to restrict water use, which would state that objections to the application may be made to the Secretary of State within seven days from the date on which it is served or published.

Details of NEUB implementation, definitions and exceptions are found in Appendix 18-20.

8 SUPPLY-SIDE DROUGHT ACTIONS

8.1 Overview

This section describes the supply-side drought actions that we may implement to address potential water supply shortages during a drought. Level 0 - Business as usual (BAU) dry weather actions, whilst not drought actions, are also included for completeness, to outline the activity already undertaken before Level 1 actions are implemented. A summary table for each of our Level 1 to 3b supply-side drought actions is included in Appendix 12.

8.2 Level 0 (BAU) Supply-Side Drought Actions

Level 0 drought actions are those which can be described as ‘business as usual’ (BAU) and refer to normal operational actions.

8.2.1 Raw water and water treatment works optimisation

Under normal conditions, we move water around the potable distribution system in the most efficient manner possible to reduce the cost of treating water and network pumping. If the area is in prolonged dry weather or drought then we would switch our

operation to ensure we are maximising water from non-stressed sources which typically requires minor valving operation on the distribution system. We can also optimise the water supply to our treatment works by minimising reservoir supply and maximising river supply.

Additionally, we have several Network Support Units (NSUs), essentially mobile pumping units that can be plugged into the distribution network to supply an area of demand from an alternative WTW to further reduce the demand on stressed sources.

8.2.2 Operation of the Kielder Transfer Scheme

Prior to the implementation of any demand-side drought measures, efforts will be focused on averting the effects of drought through maximising existing Kielder Reservoir supported resources. We will ensure that we maximise abstraction from river sources which can directly be supported from Kielder Reservoir in order to conserve reservoir storage and groundwater sources during the early stages of drought. If when maximising these Kielder supported abstractions additional releases are required from Kielder reservoir these will be made in such a way as to minimise the impact on the ability of the downstream WTW to treat the water. These actions are within the constraints of current abstraction and transfer licences and in accordance with the Kielder Operating Agreement Appendices.

We have assessed the environmental impact of increased transfers through the Kielder Transfer during drought conditions. The results of this assessment can be found in Appendix 13.

8.2.3 Coordination planning to minimise planned outage

As part of our coordination planning process, all planned asset outages undergo a risk assessment with appropriate mitigation measures implemented to ensure the outage will not impact on security of supply to customers, typically this means that no significant planned outages will take place during periods of prolonged dry weather unless they are required to maintain water treatment works output.

From time to time we experience unplanned outage events (e.g., due to poor raw water quality or asset failure) at our water treatment works; this could result in a source of raw water being used more than is desirable during a drought in order to meet demand.

8.3 Level 1 Supply-Side Drought Actions

Level 1 drought actions are those that we would consider implementing in prolonged dry weather. These actions are considered to have minor environmental impacts and include optimising existing sources and reducing outage.

To reduce the period of unplanned outage events during periods of prolonged dry weather or drought, we have a Maintenance Team presence on site enabling any asset failures to be rectified at an enhanced pace compared to non-drought conditions.

8.3.1 Road tankering of potable water

In our small, isolated, spring-fed supply areas of Allenheads and Carrshields, the only option to provide additional supplies in the event of a reduced spring yield is to tanker potable water into the service reservoir. This ensures that tankering poses no biosecurity risks as there are no discharges to the environment. An inability to maintain the service reservoir level is the trigger to instigate tankering.

We generally utilise tankers with a carrying capacity of 23m³. Procedures are in place identifying dedicated fill points at Whittle Dene WTW and Broken Scar WTW. The quantities of water required in tankering operations are small and therefore have a negligible impact on the ability of the donor WTWs to meet demand.

In practice, due to the location of these isolated Drought Management Areas tankering will take place from Whittle Dene WTW. Analysis suggests that typically four tankers a day would be required at a total daily volume of 92m³. This is negligible in comparison to the 118MI/d maximum output of the WTW.

8.4 Level 2 Supply-Side Drought Actions

Level 2 drought actions include optimising current licenced resources and networks and those with minor environmental impacts.

We do not have any level 2 supply-side drought actions.

8.5 Level 3a Supply-Side Drought Actions

Level 3a drought actions are those considered in drought with a moderate to major environmental impact.

8.5.1 Burnhope Reservoir compensation discharge reduction

This drought action requires a drought permit to temporarily halve the compensation discharge from Burnhope Reservoir to Burnhope Burn from 9.09 MI/d to 4.55 MI/d, whilst concurrently increasing releases from the Tyne Tees Tunnel (TTT) at Frosterley by 4.55 MI/d to maintain River Wear flows downstream. Reducing the Burnhope Reservoir compensation discharge conserves additional water for public water supply.

8.5.2 Cessation of environmental spate releases

There are two individual drought actions within this category requiring a drought permit to temporarily cease environmental spate releases from the following reservoirs:

- Derwent Reservoir

- Fontburn Reservoir

The environmental spate releases were designed following UKTAG guidance regarding mitigation measures for heavily modified water bodies (HMWB) to support achievement of good ecological potential (GEP) under the WFD (UKTAG, 2013). This guidance was used to identify reservoir compensation flows of appropriate magnitude, duration and frequency to support GEP. These differing compensation flows are referred to as 'building blocks'.

The environmental spate releases consist of the following building blocks;

- Annual minimum flow – licenced compensation flow
- Spring flow elevations – to support fish migration
- Late summer elevations – to disperse biota and superficial channel debris
- Flood flows – to refresh channel habitats
- Autumn/winter elevations – for dispersal and fish migration

The impact of stopping environmental spate flows on both the environment and water resource conservation will vary seasonally as each of the building blocks vary in the volume of water required. Generally, the biggest gains will be seen in ceasing the autumn/winter flow elevations as these require the largest volume of water to make. For more detailed information on individual reservoir release regimes, see Appendix 12 and 13.

8.6 Other drought permits and drought orders

In the event a severe drought coincides with unforeseen and previously unexperienced operational circumstances which risk the loss of supply to customers, we may need to apply for drought permits or orders that have not been included in this drought plan. By assessing historical events and modelling a range of future scenarios, we have identified where we may feasibly require a drought permit or order and have included it in this drought plan. However, in extreme circumstances, other permits or orders may be required, in which case we would liaise with the Environment Agency, Natural England and other key stakeholders, and add them to our drought plan.

8.7 Environmental Drought Actions

We will work closely with the Environment Agency to implement measures that help to mitigate the effects of an environmental drought wherever possible. Actions would include enhanced dry weather messaging and the operation of the Kielder Transfer Scheme to maintain river levels in the North Tyne, Tyne, Wear and Tees as set out in the Kielder Operating Agreement.

8.8 Drought Actions to support other sectors

As was the case in 2018, we will consider proposals from agri-abstractors on a case-by-case basis. Our assessment will consider:

- forecast utilisation (by NW) of individual abstraction licensed quantities in the current reporting year and what headroom, if any, we have; and

- the EA's current trading position (specifically with regard to the water body or catchment that the EA will consider trading within).

Any short term trade would need to be discussed and approved by the EA.

Given the potential for animal welfare issues, we will consider how we can help livestock farmers without mains water (e.g., tankered water) on a case-by-case basis, should they have drought related issues with their private abstractions.

Private domestic water supplies, predominantly in rural areas, may require support if they fail. Where practicable, we will consider providing bowsers on a case-by-case basis to ensure a potable supply for domestic use. We will also work with the relevant local authorities to understand the scale and location of any potential supply issues.

9 EXTREME DROUGHT ACTIONS

9.1 Section Overview

This section identifies the drought actions we could implement during an extreme drought, after Level 3a restrictions such as non-essential use bans. These actions would further delay the need to implement our emergency plan for drought and Level 4 severe drought restrictions such as emergency drought orders that authorise standpipes or rota cuts. These actions are referred to as Level 3b extreme actions.

We have considered whether the actions are realistic and technically feasible. We have considered:

- Triggers with realistic lead-in times
- If an action is practical to implement during an extreme drought.
- Is likely to be temporary.
- Generally does not result in permanent increases to deployable output i.e., usually distinct from WRMP options.

We have explored the full range of potential actions included within the ordinary drought order legislation (section 74(2) of the WRA 1991) when planning for an extreme drought. The options include applying to:

- take water from any source specified subject to conditions;
- prohibit or limit the use of water for any purpose specified;
- discharge water to any place specified subject to restrictions;
- prohibit or limit taking of water by an appropriate agency; and
- suspend or modify restrictions relating to abstraction, discharge, supply, filtration of water.

A summary of the Level 3b extreme drought measures we could implement is provided in the Appendix 11 and 12 and includes:

- the type of action (supply or demand);
- the Water Resource Zone(s) in which it would apply;
- a description of the action and the likely trigger for implementing it;

- an indication of the likely benefit or saving;
- identification of significant barriers, and
- an indication of the timescale for implementation
- environmental impact.

In prioritising the implementation of these extreme measures, we will ensure that the demand actions are implemented before more extreme supply-side actions.

Table 11 summarises the extreme drought actions we have identified and presents them in priority order. The demand-side actions are further detailed in Section 9.2, and the supply-side actions are further described in Section 0

Table 11: Extreme drought actions.

Type of action	Water Resource Zone	Summary of action	Trigger for action to be used	Likely benefit / saving	Risks	Timescales	Environmental impacts	Priority order
Demand	Kielder	Reduction in Ships Watering: Only supplying the minimum amount of water for a ship to get to its next port.	Post Level 3a drought actions.	0.09 MI/d	Advice unclear to ports - action not undertaken Customer complaints	7 days	N/A	1
Supply	Berwick & Fowberry	Lower pumps at Murton, Thornton Mains and Bleak Ridge boreholes.	Berwick observation borehole groundwater drought trigger line is crossed + qualitative assessment by DMG.	This action enables us to continue abstracting at our usual daily abstraction rate (5.80MI/d) when groundwater levels have drawdown further than under non-drought conditions.	Possible changes in geochemistry when abstracting from lower strata could create treatment challenge.	14 days	Minor – the SEA found that groundwater source optimisation may cause minor, temporary and reversible changes in baseflow and sediment transport, but these are negligible. Any increases in energy use or emissions from pump adjustments are small and short-term. Environmental assessments indicate no deterioration in habitats or WFD status, and no effects on historic environment.	2
Demand	ALL	Removal of Statutory Exceptions and Discretionary Universal Exceptions on TUBs and NEUBs	Post Level 3a drought actions.	1.28 M/d	No impact on demand reduction Customer do not adhere to ban Customers complain Advice is unclear leading to dissatisfied customers.	21 days	N/A	3
Demand	ALL	Use Network Storage: Manage large size grouped area (SOP) storage to below normal target levels (low low alarm).	Post Level 3a drought actions.	0MI/d	Low stock levels would mean we are vulnerable to any issues on the network and potential interruption to supply	24 hours	Water quality risk of running the reservoirs so low	4
Demand	ALL	Introducing seasonal tariff for smart meter customers: For fully smart metered water resource zones introduce a seasonal tariff during the drought. For example; Anything above 110 litres per head per day is charged at a higher rate. Or all water for the next 6-8 weeks charged at a higher rate.	Post Level 3a drought actions.	0 MI/d (No fully smart metered WRZs in NW).	Customers perceive unfair targeting of them as they have a smart meter leading to complaints. Seasonal tariff information is not clear enough leading to customer misunderstanding of reducing water Tariff disadvantages the vulnerable customers Seasonal tariff has no impact on reducing demand	28 days	N/A	5

Supply	Berwick & Fowberry	Drought permit to increase daily and annual abstraction volumes at Bleak Ridge borehole.	Berwick observation borehole groundwater drought trigger line is crossed + qualitative assessment by DMG.	Up to 1.45Ml/d (Subject to enaction of pump lowering drought action.)	Possible changes in geochemistry when abstracting from lower strata could create treatment challenge.	20 days	Minor – The EAR demonstrates that this drought action will result in predominantly short-term, temporary, and fully reversible environmental impacts.	6
--------	--------------------	--	---	---	---	---------	---	---

9.2 Level 3 Demand Drought Actions

Level 3b demand-side drought actions are characterised by being extreme. For those customers in fully smart metered water resource zones, we would introduce seasonal tariffs where higher water use is charged at a higher rate. We would also reduce ships watering only supplying the minimum amount for a ship to sail to the next port.

We would manage large size grouped area strategic operational plan storage to low low alarm levels.

The time to implement a level 3b demand drought action ranges from 1 day to 1 month.

The average saving for a level 3b demand drought action is 0.34 MI/d. Table 12 shows the estimated total saving for drought actions per WRZ.

Table 12: Level 3b demand-side actions total savings per WRZ in MI/d

Drought Level	Drought Severity	Demand Actions	Berwick	Kielder
Level 3b	Severe drought (Extreme actions)	Removal of Exceptions on TUBs and NEUBs	0.02	1.26
		Leakage & Network Drought Actions	0.00	0.00
		Demand (Other) Actions	0.00	0.09
		SUM MI/d	0.02	1.35

Please refer to Appendix 11 for detailed information on the individual drought actions, including estimated savings, implementation timetables, tracking effectiveness, fast-track options and risk assessments for the demand-side actions.

9.2.1 Removal of Statutory, Discretionary and Universal Exceptions

The implementation of TUBs and NEUBs in earlier drought levels will come with some exemptions. In the case of very severe droughts, these exemptions will be removed. It is estimated this could save approximately 1% from NHH consumption

9.3 Level 3b Supply-Side Drought Actions

Level 3b drought actions are those that could be implemented in a severe drought after Level 3a restrictions such as non-essential use bans have been implemented. They would delay the need for Level 4 emergency plan for drought actions such as emergency drought orders that authorise standpipes or rota cuts.

9.3.1 Lowering Pumps at Murton, Thornton Mains and Bleak Ridge

We consider that our submersible borehole pumps are already at a level whereby they would remain operational even during a 1 in 200 year drought. Nevertheless, there is scope to lower the pumps in our boreholes should a more severe drought result in increased drawdown of the pumped groundwater level. This would be achieved by adding additional lengths of rising main (the pipe that connects the pump to our raw water mains).

There are three sites in our Berwick WRZ where it would be operationally viable to lower the pumps, these are Murton, Thornton Mains and Bleak Ridge. Step tests were carried out at each borehole in the winter of 2021/2022 as part of an AMP6/7 WINEP sustainability investigation (NW, 2022a). The results of these tests tell us how the water level in our boreholes varies with abstraction rate, i.e., to what extent drawdown will increase as we increase the pump rate. Inversely, we can use the same relationship to estimate how much we would need to lower a pump to maintain fully licenced output. The results show that the abstraction gain would be:

- 0.045 MI/d per metre at Murton
- 0.178 MI/d per metre at Thornton Mains
- 0.126 MI/d per metre at Bleak Ridge

The calculation of these values assumes vertical heterogeneity of the aquifer and that well losses as water enters the borehole do not vary with depth. Both of these assumptions are flawed, but we cannot test their validity without actually being in extreme drought, and so they must serve as a best estimate of a best-case. As an example, the abstraction licence for Murton is 2.45MI/d. If, under drought conditions, the borehole was only able to abstract 2.30MI/d before the water descended to the pump intake offset (generally 5m above the pump intake itself), we would need to lower the pump by 3.33m to return to our fully licenced abstraction rate.

9.3.2 Drought Permit at Bleak Ridge

Step tests were carried out at each Berwick borehole in the winter of 2021/2022 as part of an AMP6/7 WINEP sustainability investigation (NW, 2022a). With the exception of Thornton Bog, the boreholes achieved an equilibrium groundwater level at their operational maximum abstraction rates. In the case of Bleak Ridge, however, analysis of long-term groundwater level trends and previous step-tests showed that the maximum rate achieved in the 2022 10-day test (1.92MI/d), while achieving apparent equilibrium in the short-term, is not sustainable at a scale measured in years. After further investigation (NW, 2022b), it was agreed with the Environment Agency that the long-term sustainable abstraction rate and, therefore, the abstraction licence should be set at the lower value of 1.55MI/d. Nevertheless, the borehole has the capacity to sustain 1.92MI/d in the short-term and so in the event of an extreme drought we would apply to temporarily increase abstraction from this source to this rate for up to six months.

9.3.3 Drought Permit / Order Compensation arrangements

Individuals (e.g. owners of a water source or those who have an interest in a source) who suffer a loss or damage as a result of a drought permit or drought order are entitled to compensation. The rules for compensation are set out in Schedule 9 to the Water Resources Act 1991.

In the unlikely event that a third party incurs losses or damages as a result of a drought order or permit overriding their rights to the water, the process to apply for compensation is as follows:

- The claimant must serve notice on our parent company (Northumbrian Water Limited) stating the grounds of the claim and the amount claimed. The Environment Agency is not involved in the claims process;
- Claims must be made within six months of the date of expiry of the permit; and
- In default of agreement, disputes are referred by the claimant or applicant to the Upper Tribunal

10 CUSTOMER COMMUNICATIONS

This section outlines our integrated communications plan for drought. When implemented during a drought, the sections will incorporate the relevant water resources situation information and context.

10.1 Context

This section will be updated with information about rainfall and reservoir stocks in the period leading up to the declaration of drought.

10.2 Strategy

We will ramp up activity on existing PCC and water efficiency demand campaigns, putting extra budget into marketing and using all possible channels, including our community engagement channels Local Action and community engagement vehicles (named Flo, Carlton, and Sandy).

This plan operates side by side with our existing water demand marketing plans and measures for each stage listed in this drought plan, such as Level 1 Appeal for Restraint and Level 2 Temporary Use Ban.

If the company decides to implement a Temporary Use Ban (TUB), such as a hosepipe ban, we have to adhere to a legal procedure for publicising the ban before its implementation in at least two newspapers circulating in the area and on our website three weeks before implementing a TUB.

10.3 Evaluation

- Marketing campaign metrics including reduction in PCC among hotspots
- Media monitoring
- Social media analytics
- Stakeholder email opens and responses

10.4 Communication Channels

10.4.1 Overview

Drought communications will focus on key water resource, demand and water efficiency messages and will provide advice on how customers can save water.

Depending on the severity of drought, a combination of the below channels and mediums could be used:

10.4.2 Channels

- Media
- NWL website <http://www.nwl.co.uk/>
- Social media
- Stakeholder channels
- Internal communications channels
- Our community engagement vans
- Direct communications
- Letters to key stakeholders (MPs, district/borough councillors, parish councils)
- Postings on local partner websites (e.g. local councils)
- Briefings for Customer team
- Employee communications
- Stakeholders' channels e.g., local community and non-political organisations
- Community engagement vehicles (Flo, Sandy, Carlton) and Local Action events

10.4.3 Media

As well as trade and industry press, all local media would include:

- BBC and ITV regional news programmes
- All local newspapers
- All local radio Stations

10.4.4 Social Media

NW social media accounts include:

- Instagram
- TikTok
- Facebook

- LinkedIn
- Content to include organic and boosted posts

10.4.5 Stakeholders

We would consider contacting the following stakeholders to encourage them to share and reinforce our messaging, for example, by including our messages in their newsletters or distributing them to members/residents/constituents:

- MPs and councils
- Local community and non-political organisations, including business and communications networks
- Water Forum
- Chambers of Commerce
- LWE partners
- Caravan parks and holiday homes
- Leisure centres
- The NFU
- SMEs
- Housing associations
- Allotment groups

10.4.6 Advertising

We would consider using paid advertising, including radio, print and public transport, which can be cascaded across our regions. This will help us maximise reach and communicate with customers who may be less accessible through digital or direct channels, including those in hard-to-reach areas.

- Broadcast advertising (TV and cinema)
- Audio advertising (radio and streaming services)
- Digital advertising (programmatic display and video)
- Paid social media

10.4.7 Internal Communications

Sharing messaging with our employees is crucial in supporting our customers. Internal channels include:

- Digital screens across all sites
- Our intranet and newsletter
- Direct all-colleague messaging via SMS and email
- Events
- Leadership calls
- Volunteer requests

10.4.8 Direct customer communications

- Customer email and text messages with water saving messages
- Q&A to answer potential customer questions distributed to all customer facing teams

10.4.9 Our Website

Our website (www.nwl.co.uk) is a one stop shop for information for our customers. They can check if there is an issue in their area by entering their postcode, access their accounts as well as reporting leaks through our leakage portal.

During drought, we will create website alerts and instant pop-ups to make customers aware of any relevant information. Our website has dedicated **Save Water** pages for our customers with information covering how they can reduce water consumption in their homes and gardens throughout the year.

In the event of a drought, we will create an FAQs page for our customers to ensure any queries or worries they may have are answered.

10.5 Drought Messaging Actions

10.5.1 Overview

Our drought messaging will be reinforced with facts covering the current rainfall, customer demand, reservoir storage, groundwater level and river flow position. We will provide a consistent message to our customers and other stakeholders including but not limited to neighbouring water companies, WReN, WRE, NFU and the media. The messaging for 'Waters worth saving' from Water UK will help emphasise this at a national level.

Our messaging will generally be accompanied with or a signpost to a list of top water saving tips for the garden and home.

10.5.2 Triggers for Drought Messaging

The triggers for enhanced dry weather messaging and formal Appeals for Restraint are illustrated on our worked examples in Appendix 10.

10.5.3 Dry Weather Messaging and Level 1 Appeals for Restraint

A key part of customer engagement during dry weather and drought is informing customers how they can reduce their water use. Examples of water saving tips that we might use in our business as usual dry weather messaging include:

- Turn off the tap when brushing your teeth and save 6 litres of water each time;
- Have a short shower – we recommend 4 minutes

- Water the garden with a watering can rather than a hose, try watering in the evening to retain moisture in the soil.
- Use a bucket rather than a hose to wash the car;
- Use eco mode and use full loads for your dishwasher and washing machine.
- Replace washers on dripping taps - they can waste up to 26 litres of water in 24 hours - that's enough for a shower;
- Repair any leaky loos, these can waste 215 litres per day.
- Report any leaks you spot so that we can fix them quickly - ring the leak line on 0800 393 084;
- Use a bowl when hand washing dishes and save at least 7 litres every time;
- Reuse cold, non-greasy water for houseplants or the garden.

Actions at this stage will include:

- General update press releases confirming a period of dry weather, that we are managing resources and encouraging customers to report leaks and to use water wisely;
- Frequent water efficiency messaging across all of our social media channels. This will include engaging infographics / animations and we will ask our partners to share these posts;
- A dedicated dry / warm weather advice section on the website which will be regularly updated with press releases / media statements; and
- Q&A's prepped and given to customer team in the event of difficult questions being asked via telephone. External Q&As will also be put on the dedicated page of our website.
- Advertising
- Internal comms sharing external messaging
- Comms to stakeholders

Example messages include:

- Water supplies remain healthy for this time of year.
- However, due to dry weather and more people working at home, demand for water is high.
- We are managing the situation carefully and have plans in place to help keep the water flowing for our customers.
- We are doing X, Y, Z to help maintain water supplies.
- There are currently no plans for a hosepipe ban.
- We would encourage customers to use water wisely now in case the dry weather turns into a drought.
- Customers can do X, Y, Z to help save water around the home and garden.
- Warm weather can cause ground movement which can lead to burst pipes. We are asking customers to help us out by reporting these to us so we can get them fixed as quickly as possible.

As a drought deepens and once the trigger for a Level 1 Appeal for restraint has been reached, we will repeat the actions detailed above and will confirm the latest escalated position. Additionally, we will:

- enhance our social media posts to target areas with tips and advice on using water wisely;
- Contact key stakeholders such as the Chamber of Commerce, the NFU and other related parties within the affected areas and ask that they share our messaging;
- send e-newsletters to customers in affected areas providing tips and advice on using water wisely; and
- Boost marketing campaigns targeted at those areas affected.

10.5.4 Level 2 Temporary Use Ban (TUB) Messaging

If our Drought Management Group concludes that we need to implement a TUB, then we will ensure we follow the legal requirements as outlined in Section 7.3.1. We will also ensure that we effectively communicate to our customers how the bans will affect their use of water.

Once our DMG has agreed a TUB is required, we will undertake a two-week consultation, after which the temporary use ban will be in place. We will ensure we are resourced to be able to effectively manage our messaging as well as to deal with increased media interest.

Where appropriate, we will issue joint customer communications with Water Resources North and its members.

Prior to announcing the TUB, we will ensure:

- press releases are drafted and approved, with appropriate FAQs included;
- location and timing for media interviews are agreed;
- our spokesperson is fully briefed;
- our website is updated;
- Social media posts are agreed and scheduled;
- emails to stakeholders are drafted with draft social media posts included so they can also share our messaging; and
- we have liaised with neighbouring water companies, WReN, WRE, EA, NFU and other interested groups.
- Comms to stakeholders drafted and approved
- Comms to colleagues drafted and approved

Announcing Ban

The following tasks will be undertaken:

- Press releases will be issued one day in advance, under embargo;
- Media interviews to be carried out at agreed locations;
- Website update will go live; and
- Social media posts will be scheduled in advance and monitored to manage enquiries.
- Email sent to stakeholders, including Water Forum and LWE partners

- Q&A answering potential questions from customers distributed to all customer-facing teams

Example messages include:

- Rainfall for the proceeding 3 / 6 / 9 / 12 months is x% below average
- Reservoir storage is currently at x% which is x% below average for the time of year.
- Groundwater levels are currently below average for the time of year.
- Demand is currently running at x% above average.
- A combination of prolonged dry and warm weather and elevated demand has led to our water resources being at levels which are significantly below average for the time of year. With no rain in the forecast, to ensure we are able to maintain resilient supplies should the drought deepen, we will be implementing a temporary use ban (TUB) across our supply area from XX/XX/XX.
- This is not a decision we have taken lightly, and we thank customers who have already been doing their bit to save water to help us preserve supplies.
- We ask customers to abide by the restrictions and to do everything they can to save water at this time.
- Those who do not adhere to the TUB can be subject to a £XXX fine.
- Warmer weather causes ground movement which can lead to burst pipes. We are asking customers to help us out by reporting these to us so we can get them fixed as quickly as possible.
- We have one of the best records in the water industry for dealing with leakage and are continuing to invest and find new ways to improve on this.
- We will lift the TUB once rainfall, reservoir storage and groundwater levels return to more normal levels for the time of year.

Following Ban Announcement

The following tasks will be undertaken following the announcement of a TUB:

- Daily social media posts reminding customers of planned restrictions and pointing them to our website for more information. Continue daily messaging on how customers can save water (a separate social media plan will be required);
- Record video with key spokesperson explaining why temporary use ban is needed, how customers are affected and urging them to continue to use water wisely;
- Press release 'mythbuster' – Providing some more detail on the temporary use ban, and how customers will be affected (to cover some of the most common questions asked on social media); and
- Reminder press release – Issued 1 or 2 days after implementation.

Post Ban Implementation

Proactive communication in the week following the introduction of the TUB will be limited to reinforcing our key messages, providing factual information about the TUB and encouraging customers to reduce their water use. Following this initial period,

more proactive communication will be introduced, focusing on other ways we are managing the situation (tackling leakage / bursts etc). Other actions include:

- Press release on surviving without a hosepipe. Promoting the alternatives to using a hosepipe and confirming what is/isn't covered by the ban;
- Social focussing on confirming that the ban is in place, what is/isn't covered, pointing customers to website as main source of information. Continue to push water efficiency messages; and
- Website FAQs to be reviewed and updated depending on enquiries received.

Ban Withdrawal

We will liaise with neighbouring water companies, WReN, EA, NFU and other interested groups on our plan to withdraw the TUB. Once agreed, we will issue press releases and social media posts confirming that the TUB is withdrawn but that everyone should continue to use water wisely. Additionally, we will update our website, media interviews will be facilitated with agreed a spokesperson and our Customer team will be briefed to handle enquiries. We will also contact stakeholders and inform colleagues, Water Forum and LWE partners.

Key messages might cover the following points:

- Thanks to the excellent response from our customers to our appeals to use water wisely, and increased rainfall in our region, we will be lifting the hosepipe ban on [Date];
- The ban was required due to extremely low levels of rainfall, more people spending time at home, and increases in demand for water;
- We ask our customers to continue conserving water as much as they can this time, as it will take some time for our reservoir and groundwater levels to return to normal levels. This will help us avoid the prospect of further restrictions;
- We ask customers to continue with the water saving habits they have adopted during this time as much as possible, as this will help us maintain supplies all year round; and
- We thank customers for their help and patience during this period.

10.6 Working with others during Drought

10.6.1 Overview

We will work with a wide range of interested groups and partners to enhance our messaging in order to reduce demand for water during a drought.

10.6.2 National Drought Group (NDG)

The National Drought Group (NDG) was set up by the Defra Secretary of State in February 2012 to manage that drought. It has convened since, most recently as a result of the 2025 drought, to provide a multi sector overview and strategic management of the drought. It commissions working groups to undertake specific pieces of work and includes senior decision makers from the EA, government and

principal drought stakeholders. Whenever formed, we will work with the NDG in order to contribute to the cross sector coordination of drought issues.

10.6.3 Other water companies and Water Resources North

We will work closely with our neighbouring water companies and with WReN and will look to provide joint regional messaging where a drought is affecting the region.

10.6.4 The Environment Agency

We work closely with both area and national EA teams and outside of drought have quarterly liaison meetings and senior manager meetings. During prolonged dry weather, our water resources position would be discussed at both of these meetings. During prolonged dry weather, we will also attend the Environment Agency's own regional drought meeting.

Outside of drought, we share our water resource position (surface water storage) with the EA on a weekly basis.

10.6.5 Non-household Customers and NAVs

Our Wholesale Team will work closely with:

- non-household retailers whose customers (i.e. non-household businesses) we also supply; and
- New Appointments and Variations (NAVs) - limited companies that provide a water and/or sewerage service to customers in an area which was previously provided by the incumbent monopoly provider.

Our Wholesale Team have agreed contacts with each of the NAVS and retailers. We would like them to relay all of our key drought and water efficiency messages and asks to minimise water use to their customers. Likewise, they will need to comply with any restrictions on water use that we impose on our own customers. We will ensure timely and regular communications with our NAVs and retailers that focus on demand side drought management actions or restrictions that will impact the NAV.

We will also work closely with business organisations such as the Chamber of Commerce or the LEP. We would create a business-specific press release with advice on how businesses can use water wisely. We would also create social media posts with info for SME's and tag in the Chamber of Commerce and other SME groups. As well as this, we would boost LinkedIn posts, to target specific job titles. We would create an e-leaflet with guidance on what to do in hot weather conditions and send this on an email with guidance and draft social media posts to stakeholders such as MP's, Chamber of Commerce, Councillors and other local authorities. We could also create a specific business-focused section of the website where SMEs can go to get info. We could also ask the Chamber of Commerce to share our messaging with all of their database.

We have conducted analysis to understand how demand changes during a drought in our large industrial area of Teesside. In the most recent drought, 2025, potable water

demand increased by 0.03Ml/d for the site during May-September. However, in 2022 demand did not increase significantly. We will endeavour to deliver this 0.03Ml/d (19.3%) increase in demand during drought to Teesside during drought Levels 1 and 2. More information on Teesside demand during drought can be found in Appendix 21.

10.6.6 Priority Services Register (PSR) Customers

During a drought, the priority would be to ensure PSR customers have water supplies and bottled water in case of an emergency. To get this messaging across we would send letters to customers and would also work with partners such as Age UK, the local NHS and the Trussell Trust. During the earlier summer months, we would also do some proactive social media posts encouraging people to sign up to the PSR register.

10.6.7 Schools

We promote education on water efficiency all year round and can increase promotion during prolonged dry weather to provide an educational resource to schools in order to change the water using behaviours of future generations at a large scale, known as The Ripple Effect. We will continue to push this across our social media channels, and we can reach out to schools in effected areas and supply them with our educational resources.

10.6.8 Local Resilience Forum

We always maintain a close relationship with our Local Resilience Forums, and this would continue during a drought. We would engage with them to increase awareness and engagement with local responders.

10.6.9 Housing associations

We would work closely with housing associations to create a specific press release encouraging housing associations to get tenants to save water. We would ask housing associations to share this in any newsletters they put out. We would also create social media posts for housing associations to share or boost on their accounts. As well as this, we would create an e-leaflet that housing associations could share with tenants. We would also create our own bespoke social media posts and tag in housing associations.

10.6.10 Landlords

Similar to the housing associations, we would work closely with the landlord association and create a specific press release which would encouraging landlords to get tenants to save water. We would also ask local landlords associations to share this in any newsletters they put out. We would create social media posts for landlords/association to share/boost on their accounts and also e-leaflets that they can share with tenants. Alongside this we would create our own social media posts and tag in associations.

10.6.11 Shared Homes / Student Accommodation

In this case, we would work closely with the higher education facilities in the region. We would work with them to create a specific press release with guidance for students and would engage with the Student Unions and organisation's communications teams to use their distribution channels for our messaging, paying for it if necessary. In addition we would create social media posts across all platforms, as well as boosted posts targeting specifically 18-25 year-olds. We would also create some posts for the universities and Student Unions to share. An e-leaflet would also be created, and we could ask the university to distribute this to all of their students.

10.6.12 High rise flats

Here, we would create a specific press release with advice for people living in high rise flats, and work with the local councils to share this messaging. As well as this, we would create social posts and boosted Facebook posts focussing on areas with a high number of high rise flats. As well as this, we would provide the councils with an e-leaflet with guidance on what residents should do during the hot weather. We would see if local council could share this with tenants. We could also potentially look at doing customer letters.

10.6.13 Farms

We would leverage the relationships built up by our catchment teams to communicate directly with farmers in our area. We have built a strong relationship with the NFU, and we would utilise this to our advantage. We would work with the to create a farm-specific press release with details on what farmers can do to use water wisely. We would ask that this could be sent out as part of the NFU's weekly newsletter. We would also create farm-specific e-leaflet with advice and ask them to share this with their members on our behalf. We would also use social media to post and tag in farming groups with our messaging.

10.6.14 Caravan/Holiday homeowners

For holiday homeowners or caravan owners, we would create a specific press release with guidance on how to use water wisely. Alongside this, we would create social media posts across all platforms to raise awareness and create e-leaflet with advice on what to do. We would also reach out to larger holiday park brands to see if they can share our messaging and take actions at their sites. We could potentially send out customer letters to the site managers with messaging.

11 ENVIRONMENTAL ASSESSMENT

11.1 Overview

This section provides a summary of the environmental assessments we have carried out for each of our supply-side drought actions (including drought permits and drought orders). The environmental assessments and associated environmental monitoring plans document how we will monitor, assess and, where possible, mitigate for the environmental impacts of our supply-side drought actions. They also demonstrate how we are trying to balance protecting the environment whilst maintaining a secure supply of water for our customers.

This section provides a high-level summary only, with technical detail of the environmental assessments and environmental monitoring reports being provided in separate documents.

We have prepared our environmental reports (covering environmental assessment, monitoring and mitigation) following the guidance set out in the Environment Agency's 'Environmental assessment for water company drought planning' (2025) and the UKWIR guidance 'Environmental Assessments for Water Resources Planning (21/WR/02/15)' (2021). We have also checked that our environmental assessments meet all the expectations set out in relevant environmental legislation (see Section 11.10).

We have undertaken a Strategic Environmental Assessment (SEA) of our Drought Plan and prepared an Environmental Report that details the outcomes of our assessment against our environmental objectives. This is provided as a separate report.

We have undertaken Habitats Regulations Assessment (HRA) and Water Framework Directive (WFD) assessment of the supply-side drought plan actions included within our SEA, including cumulative and in-combination assessments. The outcomes of these assessments are provided as separate reports, with relevant information also included within the environmental assessment reports (EARs) for individual supply-side drought actions.

For each of our supply-side drought actions requiring a drought permit or order we have:

- Completed an environmental assessment report (EAR) to demonstrate our understanding of the impact on the environment of our proposed action.
- Set out the environmental monitoring we will put in place to understand the environmental impacts of our action.
- Identified the mitigation measures we will implement in order to minimise the environmental impact of our action.

In addition we have included the Level 0 drought action 'Operation of the Kielder Transfer Scheme' in our environmental assessments at the request of the Environment Agency.

This information will help us to prioritise the use of drought actions with the greatest benefit and least environmental impact. We have also considered the combined environmental effects of our supply-side drought actions and, where relevant, the combination effects of our drought actions with those of our neighbouring water companies and other abstractors.

We will review and update our environmental assessments and associated monitoring plans annually or more frequently, as required, to ensure that the information remains up to date. If we need to apply for a drought permit or drought order during a drought we will refresh our relevant environmental assessments and monitoring plans afterwards. This will help to improve our environmental assessments, by incorporating datasets generated from in-drought and post-drought (recovery) monitoring and enable us to ground-truth predicted environmental impacts against observed impacts.

We will also update our environmental assessments if there is a material change to our Drought Plan, as required by section 39B(6) of the Water Industry Act 1991.

11.2 Engagement with the Environment Agency and Others

We have discussed our environmental assessments, including our mitigation measures, and monitoring plans with the Environment Agency and, where our drought actions affect a nationally or internationally protected site, with Natural England. We have agreed that, despite the drought actions listed in Table 13 being Level 3a and 3b, that we will prepare and maintain full environmental assessment reports to be 'application ready' in the event of requiring a drought permit. For detailed information about how we intend to meet 'application ready' principles, see Appendix 22.

Table 13: Application ready supply-side drought actions

Drought Action Name	Drought Level	Type of Action
Burnhope Reservoir	L3a	Drought permit to reduce compensation flow
Derwent Reservoir	L3a	Drought permit to cease environmental spate releases, reverting to baseline line compensation flow.
Fontburn Reservoir	L3a	Drought permit to cease environmental spate releases, reverting to baseline line compensation flow.
Bleak Ridge	L3b	Drought permit to increase abstraction

We have contacted the relevant local authority for any local wildlife sites potentially affected by our drought actions. We have also contacted relevant third-party organisations where watercourses may be affected by our drought actions (Table 14).

Table 14: Supply-side drought action site specific consultees

Action Name	Local Authority	Other Third-Party
Burnhope Reservoir	Northumberland County Council	NA
Derwent Reservoir	Northumberland County Council	NA
Fontburn Reservoir	Northumberland County Council	NA
Bleak Ridge	Northumberland County Council	NA

11.3 Strategic Environmental Assessment

We have completed a Strategic Environmental Assessment (SEA) and prepared an Environmental Report to accompany our Drought Plan, which sets out the assessment of each individual supply-side drought actions and our plan as a whole, in accordance with the requirements of the SEA Directive.

The Environmental Report will be provided in the accompanying document 'NW Drought Plan 2027 - Strategic Environmental Assessment (SEA) – Environmental Report' (NW, 2026) and reviews the drought actions included in our plan and the reasonable alternatives, to identify any potential positive or negative environmental effects.

Strategic Environmental Assessment (SEA) is a statutory requirement under the European Union Directive 2001/42/EC, more commonly known as the SEA Directive. The Directive was transposed into United Kingdom (UK) law via the Environmental Assessment of Plans and Programmes Regulations 2004 ('SEA Regulations') and retained following withdrawal from the European Union. This requires an assessment of the effects of certain plans and programmes on the environment. Part 2 (5) (2) of the SEA Regulations states that SEA is required for plans and programmes which are prepared for water management and which set the framework for development consents.

The SEA also works to inform the decision-making process through the identification and assessment of significant and cumulative effects a plan or programme may have on the environment and outlines how any negative effects might be mitigated. The SEA process is conducted at a strategic level and enables consultation on the potential effects of a plan with a wide range of stakeholders.

We identified the need to carry out Strategic Environmental Assessment (SEA) of our Drought Plan using the screening flow chart set out in Figure 3-3 of the UKWIR 'Environmental assessments for water resources planning 21/WR/02/15' (2021). We communicated the outcome of our SEA screening to the Environment Agency and Natural England.

Undertaking an SEA is a multi-stage process, comprising:

- Stage A – Setting the content and objectives, establishing the baseline and deciding on the scope
- Stage B – Developing and refining alternatives and assessing effects
- Stage C – Preparing the Environmental Report
- Stage D – Consulting on the Draft Plan and the Environmental Report

- Stage E – Monitoring implementation

The following sections summarise the activities and outputs from each of the SEA stages.

11.3.1 SEA – methodology

The environmental assessment of identified drought actions has been carried out using an ‘objectives-led’ approach, a widely recognised method for evaluating environmental effects and comparing alternative actions. The SEA objectives were derived from:

- Environmental protection goals set out in relevant policies, plans, and programmes, enabling identification of areas where our Drought Plan may support or conflict with other objectives at local, national, or international levels.
- The current environmental conditions within our supply areas and source catchments, along with key environmental issues and opportunities.
- Consideration of the likely evolution of the baseline, drawing on key environmental trends such as projected climate change impacts, anticipated pressures on water resources, changes in land use and habitat condition, and expected shifts in population and demand.

The SEA objectives and associated assessment questions guided the evaluation of each drought action using a consistent, evidence-based approach. For each SEA topic, key questions were developed to ensure comprehensive coverage and were updated to reflect stakeholder input and evolving priorities. Findings from the HRA for Special Protected Areas (SPAs) and Special Areas for Conservation (SACs), Natural England’s Impact Risk Zones (IRZs) for Sites of Special Scientific Interest (SSSIs), and WFD assessments have also informed the evaluation of drought actions against SEA objectives related to biodiversity and water.

The SEA environmental assessment is composed of two assessments:

- Primary assessment – categorised all drought actions within Drought Plan 2027 according to the residual effects matrix, which considers sensitivity of the receptor and magnitude of effect.
- Secondary, cumulative and synergistic environmental effects - involved examining the likely significant effects of each of the drought action in combination with each other and in combination with the implementation of other relevant plans and programmes.

11.3.2 SEA Scoping

The scoping stage of our SEA set the context and scope for our SEA and Environmental Report. We issued our NW DP27 SEA Scoping Report for statutory consultation in October 2025 and received responses from the Environment Agency (EA), Natural England and Historic England. Our SEA Scoping Report set out our SEA Objectives, presented a review of the policies, plans and programmes relevant to our Drought Plan and included a review of current baseline environmental and socioeconomic information for our supply and water catchment areas, under the topic headings of biodiversity, flora and fauna, water, flood risk, soil, air, climatic factors,

population, human health and economy, historic environment, landscape, material assets, and natural capital. We have considered the responses received from the consultation in the development of our Drought Plan SEA.

11.3.3 SEA – outcomes

The SEA identified that the majority of drought actions would result in neutral or beneficial environmental effects, including some moderate beneficial effects which are considered significant, with no significant adverse effects anticipated.

Demand-side actions predominantly deliver neutral to minor beneficial effects by reducing pressure on water resources, supporting river flows, protecting flow-sensitive habitats, and improving resilience during drought. Moderate beneficial (significant) effects are identified for some actions, particularly government-led interventions linked to community health and wellbeing. Minor adverse effects are short-term, localised and reversible, including temporary disturbance, noise, traffic, minor emissions, and temporary changes to customer service or water quality.

Supply-side actions are largely neutral to minor beneficial, as they operate within existing infrastructure and regulatory controls. They support environmental flows, maintain supply resilience, and protect water-dependent habitats, with some actions delivering moderate beneficial (significant) effects for water supply and community wellbeing. Minor adverse effects associated with supply-side actions are typically limited to localised air emissions (e.g. from tankering or operational vehicle movements); temporary soil disturbance or spill risks; short-term, localised changes to flows or water quality during operational adjustments; minor increases in energy use and operational carbon emissions in some cases; small temporary visual or traffic effects, particularly for actions involving tankering or movement of resources. These effects are short-term, localised and reversible, do not result in deterioration of WFD status and are outweighed by the benefits of maintaining secure public water supplies during drought conditions. The effects are managed through embedded mitigation, including best-practice operational controls, environmental monitoring and regulatory compliance.

The HRA concluded that no Likely Significant Effects on European Sites would arise, either alone or in combination. Overall, the WFD assessment confirmed that all drought actions are compliant with WFD requirements and will not prevent water bodies from achieving their objectives. No significant cumulative effects were identified within the Drought Plan or in combination with other relevant plans and programmes. Yorkshire Water's SROs, where there is potential for geographic overlap with our Drought Plan, will need to take account of our actions, as relevant, to ensure that any future cumulative interactions are appropriately identified and managed.

Where required, mitigation measures include compliance with abstraction licence conditions, adherence to operating agreements, stakeholder engagement, adaptive operational management and, for Bleak Ridge, Burnhope Reservoir, Derwent Reservoir, Fontburn and Kielder Transfer drought actions, targeted measures identified through the EARs. These measures are designed to avoid, reduce, or manage environmental effects during implementation and to support recovery following drought conditions. Demand-side actions are managed through established approaches such as TUBs and NEUBs, supported by communication, smart metering, and leakage reduction to ensure effective and proportionate demand management.

Monitoring plays a key role in confirming the accuracy of the assessment and identifying any unforeseen effects. We will monitor environmental indicators during and, where appropriate, after the implementation of drought actions, with a focus on actions where moderate or greater effects have been identified. Monitoring requirements are aligned with those used in WRMP24 to ensure consistency and include tracking river flows, groundwater levels, water quality, ecological conditions and compliance with regulatory objectives. For drought permit and order actions, detailed monitoring and reporting arrangements are set out in the relevant EARs. Overall, the SEA concludes that the NW Drought Plan 2027 can be implemented without significant adverse environmental effects, provided that the identified mitigation and monitoring measures are applied and that drought actions are implemented proportionately in response to drought conditions.

The SEA Environmental Report has been prepared taking account of scoping feedback and will be published for consultation alongside the draft Drought Plan, after which responses will be reviewed and used to update the assessment and inform plan refinements. Following adoption, a SEA Statement and Statement of Response will set out how consultation and the SEA have influenced the Drought Plan, with monitoring integrated into the ongoing water resources programme.

11.4 Habitats Regulations Assessment

Habitats Regulation Assessment (HRA) is a statutory requirement under the Conservation of Habitats and Species Regulations 2017 (as amended) and concerns the protection of the integrity of individual European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites and associated functionally linked land) and the integrity of the over-all network of sites.

The HRA also feeds into the SEA objective on biodiversity. The stages of HRA include the test of Likely Significant Effects (LSE), Appropriate Assessment (AA) (if required from the LSE), and consideration of alternatives (if the AA finds that effects on site integrity cannot be adequately mitigated).

We have completed an HRA and prepared a report to accompany our Drought Plan, to provide an understanding of the impact of our drought actions on designated European Sites and any associated compensatory habitat or functionally linked land, in accordance with the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended). Our assessment includes consideration of the likely significant effects of our Drought Plan alone and in-combination with other plans and projects, and follows the process as set out in Figure 4-4 of UKWIR 'Environmental assessments for water resources planning 21/WR/02/15' (2021). We have discussed the outcomes of our HRA with Natural England.

Our Habitats Regulation Assessment Report is provided in the accompanying document 'NW Drought Plan 2027 Habitats Regulations Assessment Screening Report' (NW, 2026).

11.4.1 HRA – methodology

Our HRA Screening Report has been prepared in support of the development of our Drought Plan 2027 and assessed all level 0-3b demand and supply-side drought

actions included within the Drought Plan. As part of this process all European sites (Special Areas of Conservation, Special Protection Areas and Ramsar sites) that interact with the hydrological zone of influence of each drought action were identified (where applicable). The source, pathway, receptor approach was then used to assess the potential for LSE on qualifying features of the European sites arising from drought actions, both alone and in-combination with other NW Drought Plan elements, and other strategic plans and projects.

11.4.2 HRA - outcomes

The results of the HRA Stage 1 screening of our Drought Plan 2027 has indicated that Likely Significant Effects can be ruled out for all of the demand-side drought actions, as they focus on customer usage and therefore none of the actions directly or indirectly have a pathway to affect any European Site.

Three out of the nine supply-side drought actions were excluded from the screening as they were concluded operate within existing permits and consents, with no pathway to affect any European Site. These included two Level 0 actions, 'Raw water and WTWs optimisation' and 'Coordination planning to minimise planned outage', and the Level 3b groundwater source optimisation (Murton, Thornton Mains and Bleak Ridge).

The Level 1 drought action 'Tankering from Whittle Dean WTW' was assessed as having no pathways to affect any European sites, as the action does not involve any activity which would impact waterbodies hydrologically linked to European Sites.

Four drought actions, which were assessed within individual Environmental Assessment Reports (EARs), were excluded from HRA assessment as no European Sites were found to interact with the modelled Zone Of Influence (Zol), and thus there is no pathway to affect site integrity:

- Operation of Kielder Transfer (Level 0)
- Burnhope Reservoir release reduction (Level 3a)
- Derwent Reservoir release reduction (Level 3a)
- Bleak Ridge abstraction (Level 3b)

The EAR for the Level 3a drought action at Fontburn Reservoir found one European Site within the modelled Zol. The Northumberland Marine SPA lies approximately 40 km downstream of Fontburn Reservoir and is hydrologically connected through the Rivers Font and Wansbeck. A potential pathway to effect was identified through a minor, short-term reduction in sediment transport with potential for localised fine sediment deposition and reduced mobilisation of marginal deposits. The predicted change in sediment transport arising from the drought action is predicted to be spatially limited, temporary and remain within the range of natural variability. The boundary of the Northumberland Marine SPA abuts the Wansbeck Barrage, which is likely to have more influence than the drought action on flows and sedimentation. As such, the HRA concluded that any effects of the drought action are considered ecologically inconsequential to the functioning of the Northumberland Marine SPA.

In the absence of effects from any demand or supply-side drought actions within the Drought Plan, there is no pathway for in-combination effects arising from the Plan and the delivery of other strategic plans and projects within both the Drought Plan area and within neighbouring water company areas.

Overall, Stage 1 HRA screening assessment has concluded, beyond reasonable scientific doubt, that the Drought Plan will not result in Likely Significant Effects on any European Site, either alone or in-combination. Therefore, there is no need for a further Appropriate Assessment and the recommendation is that this Drought Plan can be adopted under the Habitats Regulations.

11.5 Water Framework Directive Compliance Assessment

Water Framework Directive compliance assessment is a statutory requirement under Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and concerns supporting environmental objectives in river basin management planning, including preventing deterioration, achieving protected areas objectives and achieving waterbody status objectives. In the context of our Drought Plan, WFD compliance is assessed at the level of the individual drought actions requiring licence variation through a drought permit or order.

Our Water Framework Directive Compliance Assessment Reports are provided in the accompanying documents:

- 'NW Drought Plan 2027 Water Framework Directive (WFD) Report - Bleak Ridge Drought Action' (NW, 2026)
- 'NW Draft Drought Plan 2027 Water Framework Directive (WFD) Report – Burnhope Reservoir' (NW, 2026)
- 'NW Draft Drought Plan 2027 Water Framework Directive (WFD) Report - Kielder Transfer Drought Action' (NW, 2026)

11.5.1 WFD compliance assessment – methodology

The WFD assessment process follows a 3-stage approach:

1. Stage 1 – Screening for WFD Risks.
2. Stage 2 – Compliance Assessment (Further Assessment).
3. Stage 3 – Regulation 19 derogation.

The purpose of screening is to identify water bodies and activities which could result in impacts to the water body baseline and increase risk of deterioration. All potential effects of activities must be considered. If the Stage 1 determines there are impacts, then Stage 2 compliance assessment is required. Stage 2 determines the level of compliance with WFD objectives and identifies if there are any adverse effects. Where it is deemed that objectives cannot be met, then a derogation needs to be sought.

The Stage 1 process identifies waterbodies which could be affected by the drought actions and summarises their baseline WFD classifications. From here, the assessment identifies and ranks potential impacts from the drought actions, taking into account any embedded mitigation measures. The scored impacts allow waterbodies with no or minor localised impacts to be screened out and not taken forward to a Stage 2 Compliance Assessment.

11.5.2 WFD compliance assessment – outcomes

The Stage 1 screening of WFD risks involved the identification of potentially affected water bodies, the identification of possible impacts, and the identification of embedded mitigation measures followed by a screening exercise to remove water bodies where there were deemed no/minor localised impacts. The screening process used a scoring system in which the mean and maximum impact score for the options was calculated for each water body and those which had a maximum impact score of one or less were screened out with no further action is needed.

Northumbrian Water has 11 demand-side actions in our Drought Plan, all designed to reduce household and business consumption. As demand-side actions influence customer behaviour or network operation only, and have no direct interaction with any water body, none were taken forward to Stage 2 (WFD Compliance Assessment).

Northumbrian Water has eight supply-side drought actions in our Drought Plan which involve water bodies either directly or indirectly. The following supply-side drought actions were screened out during the preliminary WFD assessment:

- Raw water and water treatment works optimisation
- Coordination Planning to optimise planned outage
- Road tankering from Whittle Dene WTW to service reservoirs
- Derwent Reservoir (cease environmental spate releases)
- Fontburn Reservoir (cease environmental spate releases)
- Murton, Thornton Mains and Bleak Ridge (Lowering of borehole pumps)

Raw water and water treatment works optimisation was screened out as this action relates to the operational optimisation of existing raw water transfers, treatment processes and water treatment assets within the existing supply system. It does not involve changes to abstraction regimes, new infrastructure, physical modifications to water bodies, or activities with a credible pathway to affect water body status or the achievement of WFD objectives. Consequently, the action was screened out during the preliminary assessment and was not progressed to Stage 2.

Coordination planning to optimise planned outages was screened out as this action is an operational planning measure intended to improve the coordination and management of planned maintenance outages across existing water supply infrastructure. As the measure does not involve direct interaction with the water environment, changes to abstraction or discharge activities, or physical works affecting WFD receptors, no credible impact pathway was identified. The action was therefore screened out at the preliminary assessment stage and was not taken forward for detailed WFD compliance assessment.

Road tankering from Whittle Dene WTW to service reservoirs was screened out as this action involves the transportation of treated water by road from Whittle Dene Water Treatment Works to service reservoirs within the supply network. The measure does not require additional abstraction, changes to existing discharge arrangements, or physical works within a water body. As no direct pathway was identified through

which the action could affect the status of a WFD water body or the achievement of WFD objectives.

The drought actions related to cessation of environmental spate releases (Derwent and Fontburn Reservoir) were not taken forward for further WFD assessment, as the baseline compensation flow - representing the minimum flow required to support ecological integrity - is maintained. Spate releases are temporary, operator-controlled increases in discharge designed to mimic natural high-flow events; however, they occur irregularly and would not typically be present under natural drought conditions. As these releases are not part of the sustained flow regime that underpins ecological status, their cessation is not expected to materially alter hydrological conditions relevant to WFD status classification.

Finally, the Murton, Thornton Mains and Bleak Ridge pump lowering drought actions were not progressed to Stage 2 WFD assessment. Given the temporary, irregular, and reversible nature of pump lowering, with no increase in abstraction volumes and implementation outside critical low-flow periods, it is not expected to cause deterioration in WFD quality elements or affect groundwater status or objectives. The action does not represent continuous pressure under the WFD. However, if applied regularly (e.g. annually), it may require review to assess potential cumulative impacts on groundwater status, surface water interactions, and dependent ecosystems.

Stage 1 identified that the following drought actions (Table 1) pose a potential risk of impact on surface or groundwater bodies:

- Kielder Transfer: An enhanced transfer within the Kielder Transfer Scheme could affect Kielder Water Water Body, Rivers North Tyne, Wear and Tees as well as the Tyne Carboniferous Limestone Groundwater Body.
- Burnhope Reservoir: The reduced compensation flow released from Burnhope Reservoir could affect downstream receptors including the Burnhope Burn from Source to Wear Water Body and the Wear Carboniferous Limestone and Coal Measure Groundwater Body.
- Bleak Ridge: An increased groundwater abstraction could affect groundwater-dependent and connected surface water receptors, including the Newbiggin Dean Catch (tributary of Tweed) Water Body, Horncliffe Mill Burn Water Body, and the Till Devonian and Lower Carboniferous Water Body.

Given the potential for impacts on quality elements such as flow regimes, water quality, groundwater quantity and groundwater–surface water interactions, all three actions were progressed to Stage 2 WFD Assessment.

Burnhope Reservoir

The Stage 2 WFD compliance assessment screened into detailed consideration the Burnhope Reservoir Water Body, Burnhope Burn from Source to Wear Water Body, Wear from Wearhead to Middlehope Burn, Ireshope Burn Water Body, and Wear from Middlehope Burn to Houselop Beck Water Body. The Wear Carboniferous Limestone and Coal Measures Groundwater Body was subsequently screened out following review of evidence presented in the Environmental Assessment Report (EAR), which demonstrated that the groundwater body is not sensitive to the proposed drought

action and that no credible pathway exists for impacts on groundwater quantitative or chemical status.

The impact assessment indicates that the Burnhope Reservoir drought action may result in minor, short-term and localised changes to flow, habitat availability and supporting physico-chemical conditions, particularly within Burnhope Burn where reductions in compensation flow are greatest. However, the magnitude of these impacts reduces progressively downstream due to tributary inflows and is largely offset by the operation of the TTT, which maintains downstream flow conditions. Modelling and assessment presented in the EAR confirm that changes in water quality parameters, including dissolved oxygen, temperature and nutrients, remain within existing WFD classification thresholds. Biological responses are expected to be limited to temporary and localised effects, with recovery occurring through natural processes such as recolonisation, seasonal flow restoration and population resilience.

The assessment also considered WFD Protected Areas, designated sites and invasive non-native species. No adverse effects are predicted on Drinking Water Protected Areas or statutory and non-statutory designated sites, as no significant hydrological or water quality pathways were identified. Furthermore, the drought action does not involve construction activities, new infrastructure or the creation of new transfer pathways and therefore presents no significant risk of introducing or spreading invasive non-native species.

The assessment demonstrates that predicted effects are temporary, reversible and remain within the range of natural variability associated with drought conditions. In addition, the drought action is subject to a robust mitigation and monitoring framework, including defined trigger thresholds, adaptive management measures, and the ability to modify or cease operation if adverse environmental effects are observed.

Accordingly, the Stage 2 WFD assessment concluded that the proposed drought action is not expected to cause deterioration in any assessed water bodies. Taking into account the absence, or very low potential, for impacts of the Burnhope Reservoir drought action on the biological, physico-chemical, and hydromorphological quality elements of the Burnhope Reservoir and Burnhope Burn from Source to Wear Water Bodies, it is unlikely to compromise progress towards achieving good ecological potential or result in deterioration. On this basis, the drought action can be screened out under Regulation 19 (the no deterioration test).

Kielder Transfer

The Stage 2 WFD compliance assessment determined that most surface water bodies could be screened out because no credible impact pathway was identified. For the North Tyne and downstream River Wear water bodies, modelling demonstrated that changes in flow and water quality would be negligible, remain within natural variability, and would not affect WFD status elements. The Tees water bodies were screened out because no transfers to the River Tees are anticipated under the assessed drought scenario and therefore no impact pathway exists. The Tyne Carboniferous Limestone Groundwater Body was also screened out because no credible pathway was identified by which the drought action could affect groundwater quantitative or chemical status.

The Tyne from Watersmeet to Tidal Limit Water Body and the Wear from Middlehope Burn to Houselop Beck Water Body were screened in because they contain the direct operational interaction points of the Kielder Transfer Scheme, namely the abstraction

and discharge locations. These water bodies were therefore assessed on a precautionary basis to confirm compliance with WFD objectives at locations where a direct impact pathway exists. The absence of deterioration is primarily due to the nature of the drought action, which operates within existing licensed conditions and involves the redistribution of water through an established transfer system. The contribution of Kielder-derived water via the Tyne–Tees Transfer maintains flows during drought conditions while remaining within the range of natural and operational variability. No changes to habitat availability, hydromorphological processes, ecological function, or WFD classification status have been identified.

The assessment concluded that operation of the Kielder Transfer drought action would not compromise the integrity or objectives of Protected Areas. Predicted changes in water quality are minor, remain within natural variability and applicable WFD thresholds, and are not expected to result in measurable effects on designated features, site condition, or Drinking Water Protected Areas. Furthermore, the drought action would not materially increase the risk of the introduction or spread of Invasive Non-Native Species, as relevant aquatic INNS are already present within both catchments and no changes to habitat conditions, disturbance regimes, or ecological processes are predicted that would facilitate their establishment or expansion. Consequently, no adverse effects on Protected Areas or INNS-related receptors are anticipated. The Stage 2 WFD assessment concluded that the proposed Kielder Reservoir drought action is not expected to result in deterioration of any assessed water bodies.

Taking into account the negligible to low magnitude of predicted changes associated with increased transfers within existing licensed limits, and the absence of significant impacts on biological, physico-chemical, and hydromorphological quality elements in the assessed water bodies - namely the Tyne from Watersmeet to Tidal Limit, the Wear from Middlehope Burn to Houselop Beck, and the Tees from Maize Beck to Percy Beck – it is unlikely that the drought action would compromise progress towards achieving Good Ecological Status or Potential, or lead to deterioration. On this basis, the drought action can be screened out under Regulation 19 (the no deterioration test).

Bleak Ridge

The Stage 2 WFD compliance assessment determined that all surface water bodies could be screened out due to the absence of groundwater-surface water connectivity. This reflects a groundwater divide between the drought action and nearby surface water bodies associated with separate geological units.

The Northumberland Carboniferous Limestone and Coal Measures Groundwater Body was also screened out as the Bleak Ridge borehole abstracts from the deeper Fell Sandstone Formation rather than the Scremerston Coal Member aquifer. Hydraulic separation is maintained by intervening mudstone layers, preventing drawdown impacts.

Similarly, the Till Devonian and Lower Carboniferous Groundwater Body was screened out due to a geological boundary between Fell Sandstone and Ballagan Formation outcrops. This means that there is limited groundwater flow between the Till Fell Sandstone and Till Devonian and Lower Carboniferous Groundwater Body groundwater bodies.

The Till Fell Sandstone Groundwater Body was screened in as the drought action directly draws from this aquifer unit. Most WFD quality elements for this Groundwater Body were subsequently scoped out; however, water balance, drinking water protected areas (due to the presence of a SgZ), and general chemical quality (given its current Poor status) were scoped in for further assessment.

The impact assessment found negligible to very low potential for impacts on the quantitative elements of the Till Fell Sandstone Groundwater Body as a result of the drought action. Minor impacts from horizontal drawdown propagation and negligible impacts of vertical drawdown propagation means that there will be no significant impacts on water balance, and recovery is expected within six to 12 months. Chemical impacts are also predicted to be low, as it is unlikely that the drought action will lead to the increase in concentrations of water quality parameters in the Till Fell Sandstone Groundwater Body.

No measurable effects on nearby designated sites are expected due to the lack of groundwater-surface water interactions, and no GWDTEs occur within 2km. There is also no risk of introducing invasive non-native species, as no construction or physical modifications are required to the existing Bleak Ridge borehole.

Mitigation measures, including withdrawal of the drought action when environmental thresholds are exceeded, robust environmental monitoring, and adaptive management, will further minimise potential impacts. The drought action is also restricted to operating for a maximum of six months, ensuring any effects will only occur in the short-term and will not compromise WFD objectives or compliance.

Accordingly, the proposed drought action complies with the environmental objectives of the Water Framework Directive and can be screened out under Regulation 19. The assessment has demonstrated that there is no credible mechanism by which the action would cause deterioration in groundwater body status, adversely affect groundwater quantitative or chemical status, or prevent the achievement of Good Groundwater Status and other WFD objectives.

Summary

To conclude, on the basis of the available evidence, no risk of deterioration in water body status has been identified, nor has any risk to the achievement of WFD objectives. The proposed drought actions can therefore be screened out under Regulation 19, as there is no credible mechanism by which they would give rise to effects contrary to the WFD no-deterioration objective. The Kielder Reservoir drought action would operate within existing license conditions. Implementation of the Bleak Ridge and Burnhope Burn drought action would require a drought permit to authorise an increase in abstraction volume at Bleak Ridge borehole and respectively to halve the compensation discharge from Burnhope Reservoir. The requirement for a drought permit does not alter the outcome of this assessment, which is based on the potential effects of the proposed drought actions on water body status and the achievement of WFD objectives.

11.6 Supporting environmental assessments

11.6.1 Invasive non-native species

We have considered the impact of our drought actions on the potential spread of invasive non-native species (INNS) and where applicable we have identified mitigation measures.

11.6.2 Biodiversity no net loss

We have screened our drought actions for any loss of habitats or changes in river condition. No construction or operational land will be required for the drought actions and operations will be temporary; therefore we have not undertaken Biodiversity Net Gain assessment.

11.7 Environment Assessment Reports

For each supply-side drought action requiring a drought permit or order we have carried out an action-specific environmental assessments and produced an environmental assessment report (EAR) and monitoring plan. We have also produced an EAR for the operation of the Kielder Transfer Scheme. This section outlines our approach to these environmental assessments, a summary of the methodology used and a summary of the outcomes of each environmental assessment.

11.7.1 EAR Approach

Our environmental assessment reports (EARs) set out the likely impacts on the environment of each of our supply-side drought actions that require a drought permit or order, and how we plan to monitor and mitigate for these. The environmental assessments follow the approach outlined in Figure 19.

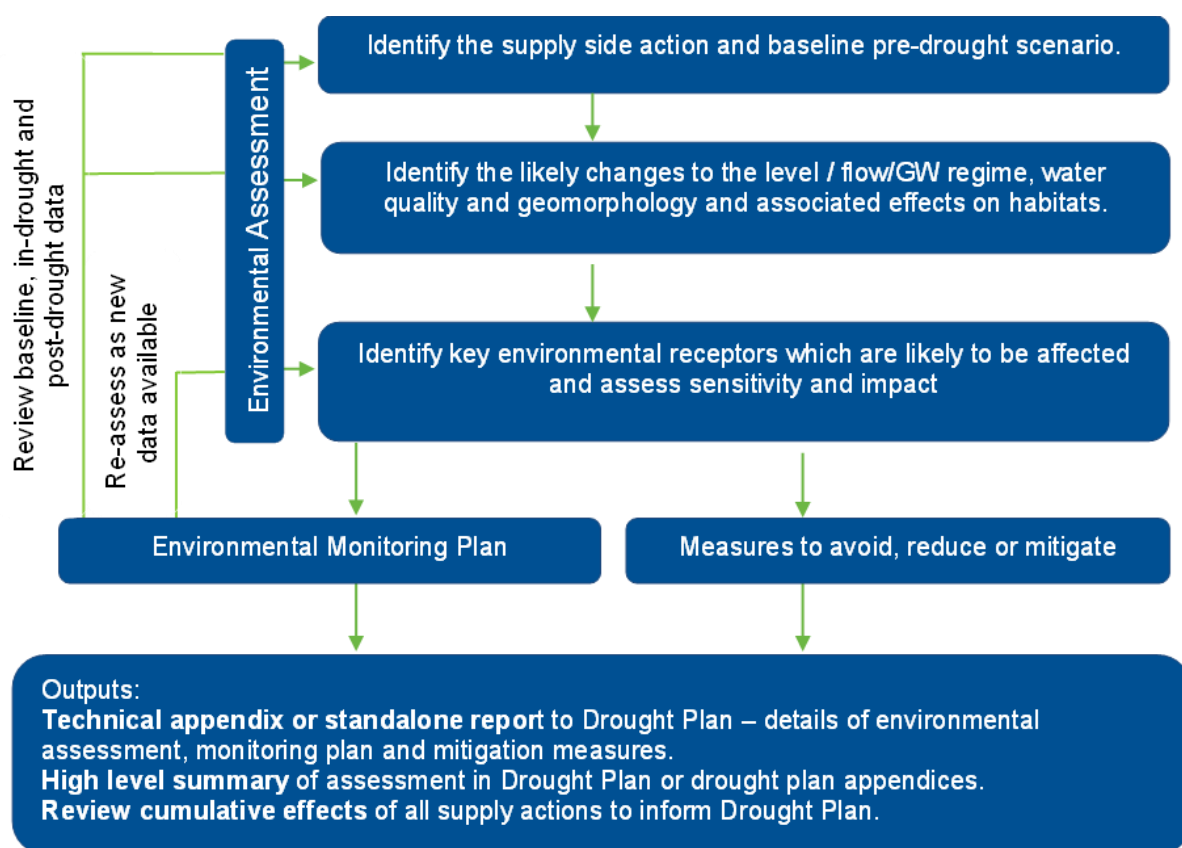


Figure 19: A high-level summary of our approach to developing EARs (adapted from summary shown in the EA guideline ‘Environmental assessment for water company drought planning’ (EA, 2025).

11.7.2 EAR Methodology

Our EAR methodology follows that outlined in Sections 3.2 – 3.5 of the EA guidance document ‘Environmental assessment for water company drought planning’ (March 2025).

A key part of our environmental assessments is to understand the impact of our drought actions on each environmental feature of interest and how sensitive they are to the likely changes in hydrology or hydrogeology, and likely associated habitat changes, caused by each drought action. The features we have considered within our environmental assessments include:

- Hydrology (water flow or level regimes) and hydrogeology (where appropriate).
- Water quality.
- Ecology – including ecological status, the quantitative status of groundwater as identified in river basin management plans (RBMPs) and fish populations.
- Habitats and geomorphology.
- Designated sites and priority habitats and species.
- Conservation of biodiversity in our role as a public authority under the Natural Environment and Rural Communities Act 2006 (NERC).
- Other physical, economic, cultural and heritage issues.
- The spread of invasive non-native species (INNS).

The type and quality of environmental datasets available for each drought action varies. The types of evidence that we have used to inform our environmental assessments include:

- Observed historical datasets.
- Observed datasets from ongoing monitoring programmes.
- Expert judgement relating to specific habitat types.
- Evidence from other nearby sites which are similar to our site of interest.
- Modelled / simulated datasets.

Where we have identified a lack of data for a specific environmental receptor, this has been included in our environmental monitoring plan (Section 11.8). As we have not previously included any supply-side drought actions in previous Drought Plans, we do not have any observed data from previous droughts with which to supplement our environmental assessments. Should we need to implement any of our supply-side actions during a future drought, we have set out in our environmental monitoring plans how we will generate appropriate in-drought datasets to understand actual environmental impact.

11.7.3 Summary EAR Outcomes

Appendix 13 provides a summary of the EAR outcomes for each supply-side drought action requiring a drought permit or order as well as the Kielder Transfer Scheme.

11.8 Environmental Monitoring

Environmental monitoring is a key component of the drought planning process, helping to inform understanding of the likely and actual environmental impacts of our supply-side actions.

Baseline monitoring helps to inform understanding of the nature of the environment under normal (non-drought) circumstances, and how sensitive the environmental features might be to changes in flow. It is also fundamental to assessing the actual environmental impact of our supply-side actions by allowing comparison of the environment under normal conditions against observed environmental datasets collected during and after a drought. While the level of monitoring required is risk-based and potentially different for each drought action, the importance of long-term, high-quality datasets is recognised, given that normal environmental conditions are variable and may demonstrate a trend of change over time, for example, due to climate change, or water quality improvements.

In-drought monitoring helps to assess the actual environmental impacts of a drought action during the drought and informs the choice and implementation of mitigation measures. Post-drought (recovery) monitoring helps to assess the longer-term environmental impacts of, and recovery of the environment from, the implementation of our drought actions.

We have tailored our environmental monitoring programme to the needs of the specific environmental assessment for each of our supply-side actions. We have focused our

monitoring effort on receptors that have a moderate category of impact or greater, or where we have a medium/low confidence in our environmental assessment. The key types of environmental monitoring likely to be required include:

- Ecological (e.g. macro-invertebrates, fish, macrophytes, INNS, protected habitats and species);
- Hydrological (e.g. flow and level);
- Geomorphological (e.g. walkover surveys);
- Water quality (e.g. dissolved oxygen, temperature);
- Other supporting information (e.g. fixed-point photography).

In addition to our own monitoring we also make use of monitoring carried out by other organisations, such as the Environment Agency. We have set out in our environmental monitoring plans where we have, or plan to, use such datasets. We check with these organisations regularly to keep our data up to date and to understand whether their monitoring remains ongoing.

We have considered how we can design our monitoring programmes to try to understand the difference between natural environmental variance, the impact on the environment of natural drought, our normal level of licensed abstraction and the implementation of our supply-side drought actions. Where possible we aim to use a Before-After-Control-Impact (BACI) approach to inform this.

In our monitoring plans we have set out all the monitoring that we will carry out to understand the environmental impact of each of our supply-side actions, including baseline monitoring, in-drought and post-drought (recovery) monitoring. These plans are included, alongside our environmental assessments in separate technical appendices to our Drought Plan.

11.9 Mitigation Measures

In our EARs, we have set out how we will mitigate for or reduce the adverse impacts on the environment of our supply-side drought actions. We have broken these down into:

- Pre-drought mitigation actions that we will implement before a drought, or while a drought is developing to reduce the likely environmental impact of our drought actions;
- In-drought mitigation actions that we will implement during a drought to minimise the environmental impact of our drought actions;
- Post-drought mitigation actions that we will implement following a drought to reduce any environmental impacts that may occur as a result of the actions we implement.

We have also considered:

- Whether the mitigation measures we are proposing will be effective for the features that could be at risk from our drought management actions;
- how we will monitor the effectiveness of implementing these mitigation measures; and

- Any additional permits or approvals that we would need to obtain in order to implement our mitigation measures.

Examples of the kinds of mitigation measures we have considered include:

- Freshets (controlled releases from reservoirs) to augment surface water bodies
- Aeration to raise dissolved oxygen concentrations to prevent fish stress/kills.
- Avoidance of critical ecological periods.

As a drought unfolds, we would review our planned mitigation measures before implementing them, taking into consideration the unique features of the specific drought and using our monitoring data to inform our choice of mitigation measures to implement.

We have discussed our proposed mitigation activities with the Environment Agency, Natural England and other affected parties.

Our mitigation measures are included as part of our EARs, in separate technical appendices to our Drought Plan.

11.10 Relevant Legislation

We have taken steps to ensure that we comply with all relevant environmental legislation as outlined in the Environment Agency guidance document 'Environmental assessment for water company drought planning' (Environment Agency, 2025), particularly where our drought actions may affect protected areas or designated sites.

11.10.1 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a statutory requirement under the European Union Directive 2001/42/EC, more commonly known as the SEA Directive. We have complied with this legislation by conducting a drought plan SEA assessment. For detailed information on how this assessment was carried out and the outcomes, see Section 11.3.

11.10.2 Habitats Regulations

As a competent authority, we must legally carry out assessments under the Habitats Regulations, known as a habitat regulation assessment (HRA), to test if any of our proposed drought actions could significantly harm the designated features of Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites. We have complied with this legislation by conducting a drought plan HRA assessment. For detailed information on how this assessment was carried out and the outcomes, see Section 11.4.

11.10.3 River basin management plans (RBMPs)

The Water Framework Directive (WFD) established a legal framework for managing the water environment across Europe and these requirements were translated into domestic law post-Brexit principally in the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD Regulations). We have complied with this legislation by conducting a drought plan WFD assessment. For detailed information on how this assessment was carried out and the outcomes, see Section 11.5.

We have never needed to apply for a drought permit or drought order. The last time that we know we imposed a hosepipe ban (now a temporary use ban) was in 1959. There have been subsequent dry and drought years, notably 1975/1976, 1995, 2003, and 2025, when only an appeal for restraint was required. We therefore think that it is reasonable to conclude that a Northumbrian regional drought worse than that which resulted in the 1959 hosepipe ban would be required before we would even need to consider drought permits. Consequently, we consider that article 4.6 would allow for any temporary deterioration caused by NW drought permit applications.

Nevertheless, in line with the WFD Regulations, we would ensure that all practicable steps were taken to prevent any deterioration in status and to limit it where possible and we have undertaken a WFD assessment and have considered the effects of our supply-side drought actions on WFD objectives and water body classification. The results are presented in our separate WFD compliance report.

11.10.4 Other relevant legislation

We have demonstrated our compliance with the following legislation via the individual drought action EARs, which provide the full technical detail:

- Wildlife and Countryside Act 1981 - Under the Wildlife and Countryside Act 1981, we as a Water Company are required to take reasonable steps to further the conservation and enhancement of Sites of Special Scientific Interest (SSSI).
- Habitats and species of principal importance and locally important sites - As a statutory undertaker we have a duty to consider the general biodiversity objective in Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 whilst carrying out our environmental assessments.
- Fish and Fisheries - The principal fisheries legislation that we have considered when undertaking our environmental assessments include the Salmon and Freshwater Fisheries Act 1975, Water Resources Act 1991 and Environment Act 1995. Certain fish species and fish stocks are also protected by the Habitats Regulations, the Wildlife and Countryside Act 1981, Eels Regulations 2009 and the requirements of the Water Environment (Water Framework Directive) Regulations 2017. Fish species of principal importance included in the Natural Environment and Rural Communities (NERC) Act 2006 have also been included.
- Invasive non-native species (INNS) - Aquatic and riparian INNS can cause the ecological status of WFD water bodies or protected sites to deteriorate or not

achieve their ecological objectives. Additionally, we are at risk of committing an offence under the Wildlife and Countryside Act 1981 if our operations spread INNS listed in Schedule 9 to the Act.

12 HISTORIC ENVIRONMENT ASSESSMENT

12.1 Overview

The actions outlined in this drought plan, such as temporary water transfers and increased abstraction can have adverse environmental effects on the water bodies that support waterlogged and water adjacent heritage sites. The effects of drought itself on the archaeological record are not considered in this document.

We have discussed the need for historic environmental assessments, including our mitigation measures, and monitoring plans with the Environment Agency and, where our drought actions may affect a nationally or internationally protected historic site, with Historic England. Although the north-east of England within our supply area has few sites that could potentially be affected by our drought actions, we have ensured we have made appropriate consideration of them.

12.2 Impacts

The actions considered in this drought plan have the potential to cause the following negative impacts on the historic environment and any such actions should be discussed with local planning authorities to see how these impacts could be mitigated:

- Building subsidence: The drying of soils leads to ground movement and subsidence, which can cause cracking or structural failure in historic buildings and monuments.
- Archaeological degradation: Prolonged drying will cause the desiccation of wetlands, which can destroy waterlogged archaeological and palaeoenvironmental remains.
- Erosion and stability: Lowering water levels exacerbates soil erosion and can destabilize riverbanks, damaging bridges and structures near changing water courses. This risk is limited during periods of drought where sub-aerial erosive processes are minimal.

The historic landscape should also be considered and if possible negative impacts mitigated against:

- Plant and tree Loss: Lowering water levels may harm historical designed landscapes by stressing or killing specimen trees and heritage plants.
- Water features: Changes in water tables and drought actions (such as abstraction) can dry up ornamental lakes, fountains, and historic water features.

12.3 Policy and Guidance

We have taken steps to ensure that we comply with all relevant environmental legislation:

- Historic England and local heritage services will be explicitly included in these planning processes to protect designated and non-designated heritage and landscapes.
- Granada Convention (1985) Convention for the Protection of the Architectural Heritage of Europe
- Valletta Convention (1992) Convention on the Protection of Archaeological Heritage of Europe
- The World Heritage Convention (UNESCO) 1972
- Charter for the Protection and Management of Archaeological Heritage (1990)
- Historic England (2016) Sustainability Appraisal and Strategic Environmental Assessment Historic England Advice Note 8.
- European Union Directive 2001/42/EC.
- UKWIR Environmental Assessments for Water Resources Planning (21/WR/02/15) (2021).

Reference to specific legislation and guidance, and how it has been applied can be found in the main SEA report (see Section 11.3) or in individual Drought Action EARs (see section 11.7).

12.4 Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is a statutory requirement under the European Union Directive 2001/42/EC, more commonly known as the SEA Directive. Historic England has produced advice regarding historic environment considerations as part of the SEA process (Historic England, 2016) including:

- Consideration of the historic environment should include the potential for LSEs on non-designated heritage assets, including archaeological remains.
- The guidance sets out key baseline information that can help identify sustainability issues relating to the historic environment.
- Examples of criteria for decision-making are included in the guidance, including whether the plan will alter the hydrological conditions of water-dependent heritage assets, including organic remains. This includes consideration of the hydrological setting of water dependent assets (such as important wetland areas with potential for paleo-environmental deposits).
- Guidance is provided for the prediction of significant effects on the historic environment and principles that may be helpful in assessing impacts on the historic environment and their subsequent integration with the wider assessment of the plan.
- Examples of possible mitigation measures for the historic environment are also provided.

We have complied with this legislation by conducting a drought plan SEA assessment and Historic England were included as a consultee for our SEA scoping exercise. Our SEA objectives included historic environment which were assessed against the following criteria:

- Will the action affect designated or non-designated historic assets, sites and features?
- Will the action affect the setting and/or significance of a historic asset?

- Will the action affect archaeology (including unknown archaeology)?
- Will the action alter the hydrological conditions of water-dependent heritage assets, including organic remains?

For a summary of our SEA methodology, please see Section 11.3.1.

12.5 Environmental Assessment Reports

As per the EA guidance document 'Environmental assessment for water company drought planning' (March 2025), environmental assessments should include details of the likely impacts of our supply actions on heritage (including the historic environment). We consequently defined a 'zones' around the impacted water bodies (the extent of which was dependent on drought action specifics) which was then assessed using historic environment resources such as the National Heritage List for England (NHLE), Keys to the Past Online Historic Environment Record, local County Council Conservation Area Maps, and selected secondary sources. Based on the types of features identified and the potential impact pathway, the risk magnitude was then assessed.

Appendix 13 provides a summary of the EAR outcomes for each drought action including the impact on heritage receptors which includes the historic environment.

13 RECOVERY FROM DROUGHT

The recovery from drought will be based on the latest rainfall, reservoir storage, groundwater levels, river flows and customer demand data which will be monitored by our Water Resources Team and Drought Management Group.

A key aspect in deciding to move from either Prolonged Dry Weather or Drought to Recovery is the Environment Agency moving the region into its Recovery drought status. Along with the EAs drought status we have defined control curve triggers for our Level 1, 2, 3 and 4 drought actions, reservoir stock and aquifer levels increasing through the drought triggers indicates that the region is recovering from drought.

We have provided surface water and groundwater worked examples in Appendix 9 and 9, that show these drought triggers.

14 END OF DROUGHT

14.1 End of drought triggers

The true end of a drought can only be determined retrospectively. However, the trigger we will use for coming out of a drought is when actual reservoir storage or groundwater levels are above the Level 1 Drought Action control curve for 2 weeks. However, we would take an agile approach to deciding whether to return to business as usual (i.e. non-drought) messaging and would consider:

- Operational experience;
- water resources forecasts using our water resource models
- whether there is an improving situation with increasing reservoir levels and groundwater levels;
- the time of year (i.e. whether going into summer or winter); and
- the short and medium term weather forecasts.

We will make a careful judgement as to whether to remove restrictions since an apparent ending of drought conditions could easily be confused with a temporary respite in a prolonged drought sequence. Additionally, decisions will be balanced with the need to avoid impacting on customers and business for longer than is necessary.

Prior to concluding a drought has ended, we would consult neighbouring water companies, Water Resources North and other interested stakeholders to obtain their view on drought recovery. We will only declare the end of a drought after confirming with the Environment Agency that the water resource situation and associated threat to public water supply has returned to normal. We will communicate this to our customers as outlined in our Communications Plan.

If the Level 3 drought permits were required, we will continue to carry out environmental monitoring and assessment for a period after hydrological triggers have recovered to understand how the environment is recovering.

14.2 Reviewing our plan performance after a drought

We will complete a Post Drought Review (PDR) comprising data collation and report writing within four months of confirmation of the end of a drought. It will be overseen by our Drought Management Group, with all members contributing.

The review will identify lessons learnt and also consider potential improvements both to our Drought Plan and wider drought management strategy. Additionally, where appropriate, the need for future investment to limit the impact of similar drought conditions occurring in the future will be considered, as will the need for any additional monitoring. The PDR will examine:

- the hydrological conditions leading up to the drought and the effectiveness of our drought indicators;
- the effectiveness of drought trigger levels and whether they should be reviewed and amended, including lead-in times to implement actions;
- the effectiveness of our drought actions, whether our chosen actions were the most appropriate and whether we could have acted more quickly;
- whether we managed risk appropriately with regards to our operational response, and internal processes;
- assess how our estimates of reductions in water demand for each of the measures introduced compared to actual reductions observed and consider the potential influences of other factors on these findings such as the weather;
- the effectiveness of our liaison with other neighbouring water companies, NAVs and water retailers, regional water resources groups and others such as the

local resilience forums to implement drought management actions where required;

- the monitoring data to determine the actual environmental impacts of our drought management actions, and the effectiveness of any mitigation measures we deployed;
- lessons learnt to improve our environmental assessments, monitoring plans and mitigation measures in our drought plan;
- the effectiveness of our communications plan;
- how effective our data and information sharing was with regulators, the National Drought Group and subgroups, regional water resources groups and other relevant groups;
- implications of the drought for future levels of service;
- what longer term improvements to resilience may be needed and to reflect this in our next WRMP.

We recognise that the environment often takes longer to recover from the effects of drought than hydrological indicators. If we have implemented any supply-side drought actions, we will continue to carry out relevant post drought monitoring until we have collected sufficient data to know when the environment has recovered.

Any improvements to our drought management process and drought plan identified from the Post Drought Review will be made where appropriate and shared with the Environment Agency.

Our lessons learnt from the 2022 and 2025 droughts can be found in Appendix 23 and 24 respectively.

14.3 Revision of Drought Plan

We will review this Drought Plan annually and will update in line with the Drought Regulations if there are any material changes.

15 REFERENCES

Environment Agency (2025) Water company drought plan guideline, LIT 74637, Version 1.4, March 2025.

Environment Agency (2025) Environmental assessment for water company drought planning.

Historic England (2016) Sustainability Appraisal and Strategic Environmental Assessment Historic England Advice Note 8 (2016)

Northumbrian Water (2022a) AMP6 Till Fell Sandstone Sustainability Investigation, Phase 2: Pumping at Fully Licenced – Final Report. Northumbrian Water.

Northumbrian Water (2022b) AMP6 WNEP Berwick Fell Sandstone Sustainability - Further Investigation. Northumbrian Water.

Northumbrian Water (2026) NW Drought Plan 2027 Habitats Regulations Assessment Screening Report

Northumbrian Water (NW) (2026) NW Drought Plan 2027 Strategic Environmental Assessment (SEA): Environmental Report

Northumbrian Water (NW) (2026) NW Drought Plan 2027 Water Framework Directive (WFD) Report - Bleak Ridge Drought Action.

Northumbrian Water (NW) (2026) NW Draft Drought Plan 2027 Water Framework Directive (WFD) Report – Burnhope Reservoir

Northumbrian Water (NW) (2026) NW Draft Drought Plan 2027 Water Framework Directive (WFD) Report - Kielder Transfer Drought Action.

Northumbrian Water (2024) Water Resources Management Plan, October 2024, <https://www.nwg.co.uk/responsibility/environment/wrmp/wrmp-2025-2030/>.

Water Resources Act 1991 (WRA 1991)

UKTAG (2013) River flow for good ecological potential Final recommendations.

UKWIR (2011) Code of Practice and Guidance on Water Use Restrictions (11-WR-33-12)

UKWIR (2017) Drought Vulnerability Framework

UKWIR (2021) Environmental Assessments for Water Resources Planning (21/WR/02/15).

UKWIR (2023) Review of 2022 Drought Demand Management Measured Final Report 23-WR-02-17

16 GLOSSARY

AA	Appropriate Assessment
Abstraction	The removal of water from any source, either permanently or temporarily.
Abstraction licence	The authorisation granted by the Environment Agency to allow the removal of water from a source.
BACI	Before-After-Control-Impact
Baseline	Information on the environment that details conditions prior to implementation of a drought action.
BAU	Business As Usual
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.
CSLs	Customer Side Leaks
Demand management	The implementation of policies or measures which serve to manage control or influence the consumption or waste of water.
Deployable output	The output of a commissioned source or group of sources or of bulk supply as constrained by the environment, abstraction licence, pumping plant and/or well or aquifer properties, raw water mains and/or aquifers, transfer and/or output main, treatment or water quality.
DI	Distribution Input
DMA	District Metering Area(s)
DMG	Drought Management Group
Drought Management Area (DrMA)	The area (within a resource zone) that a particular drought management action will apply to as specified.
Drought order (DO)	An authorisation granted by the Secretary of State under drought conditions which imposes restrictions upon the use of water and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis.
Drought permit	An authorisation granted by the Environment Agency under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis.

EA	Environment Agency
EAR	Environmental Assessment Report
Environmental assessment	An assessment of environmental sensitivity and likely impacts from implementing drought management actions.
Environmental monitoring plan	A plan describing how the company will address gaps in the environmental assessment of the supply-side drought management action; baseline monitoring (including pre drought monitoring); in- drought monitoring; and post drought monitoring.
Environmental report	The report that accompanies an application for a drought order or drought permit. It is based on the information from within the environmental assessment and updated with any additional information.
Feature	A way of describing an ecological, chemical, habitat or morphological element to be assessed. For example a species of plant or animal, habitat type or sub-habitat type.
GEP	Good Ecological Potential
Government	Central Government (Defra)
Habitats regulation assessment (HRA)	A HRA identifies whether or not drought actions will have an adverse effect on a site's (SPA or SAC) integrity.
Habitats Regulations	The Conservation of Habitats and Species Regulations 2010. The domestic legislation which transposes the EU Habitats and Wild Birds Directives into UK law and replaces the Conservation (natural habitats &c) Regulations 1994.
HH	Household(s)
HMWB	Heavily Modified Waterbody
In-drought monitoring	Monitoring that is undertake during the implementation of a drought management action.
INNS	Invasive Non-Native Species
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.

LSE		Likely Significant Effect
MI/d		Megalitres per day
NAVs		New Appointment and Variations
NDG		National Drought Group
NERC		Natural Environment and Rural Communities Act 2006
NEUB		Non-Essential Use Ban
NHH		Non-Household(s)
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.
NSU		Network Support Units
NWL		Northumbrian Water Limited
PDR		Post-Drought Review
PRVs		Pressure Reduction Valves
PSR		Priority Services Register
Ramsar site		Internationally important wetland site.
Resilience options		Additional options to deal with plausible droughts worse than those in the recorded record.
River Management (RBMP)	Basin Plan	RBMPs are a legal framework for protecting and improving the water environment constructed by the Environment Agency to help manage river basins across England.
SAC		Special Area of Conservation - Designated under the European Habitats Directive (1991)
SOP		Standard Operating Procedure
SOP (Networks)		Strategic Operational Plan
SPA		Special Protection Area - Classified under the European Birds Directive (1979)
SPL		Supply Pipe Leakage

SSSI		Site of Special Scientific Interest - A site given a statutory designation by English Nature or Natural Resources Wales because it is particularly important, on account of its nature conservation value.
Strategic Environmental Assessment Directive	(SEA)	The Strategic Environmental Assessment Directive 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.
TTT		Tyne Tees Tunnel
TUB		Temporary (Water) Use Ban - powers granted to water companies to impose restrictions on customers' water use
UKTAG blocks	building	United Kingdom Technical Advisory Group (UKTAG) building blocks – hydrological actions designed for ecological and environmental protection.
UKWIR		UK Water Industry Research
Water management (WRMP)	resource plan	A water company long-term strategic plan for water supply and demand over 25 years.
Water Resource Zone		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.
WFD		Water Framework Directive
WIA		Water Industry Act
WRA		Water Resources Act
WRE		Water Resources East
WReN		Water Resources North
WTW		Water Treatment Works

17 APPENDICES (SEPARATE DOCUMENT)

Separate document on www.nwg.co.uk/droughtplan:

Northumbrian Water Drought Plan 2027 Appendix