



NORTHUMBRIAN
WATER *living water*

**DRAFT
DROUGHT
PLAN 2018**

**CONSULTATION
STATEMENT OF
RESPONSE**

December 2017

1 INTRODUCTION

This document is Northumbrian Water (NW's) draft Drought Plan 2018 Consultation Statement of Response. The consultation took place over an eight week period which ended on 20th October 2017. The draft Drought Plan was available for review on our website. All Statutory consultees were consulted in accordance with the requirements of the Regulations.

The Statement of Response presents all of the consultation comments and confirms what changes have been made to the draft Drought Plan as a result of them.

If NW's responses to the consultation comments are accepted by Defra, they will be included in the Company's final Drought Plan which should be published on our website www.nwl.co.uk/droughtplan during 2018.

2 CONSULTATION STATEMENT OF RESPONSE

The following table presents Northumbrian Water’s response to representation made by the Environment Agency on the Company’s draft Drought Plan 2018. This was the only response received during the consultation period.

Area of issue	Changes Required	NW Response
1. Scenario testing for worse than historic drought	The company should demonstrate that it has planned for a drought of longer duration and severity of those experienced in the historic record.	<p>At the time of preparing and consulting on the draft Drought Plan, NW was switching from a Kielder Water Resource Zone model called “i-Think” to a new model developed using water resources modelling software called Aquator. As the new Aquator model was not ready in time to inform the draft Drought Plan, the Company used PR14 deployable output assessments to inform drought resilience assessments instead. However, in the draft Drought Plan, NW did confirm that once the new model was ready, the draft Drought Plan would be updated with the results of new deployable output assessments. This work was completed for the Company’s draft Water Resources Management Plan which was submitted to Defra on 30 November 2017. The draft Drought Plan has been updated to reflect the results of the WRMP19 DO assessment. These confirm that during a drought with a return period of 1 in 200 years, customer demand in the Kielder WRZ can be met across a 40 year planning period from 2020 without the need for a temporary use ban.</p> <p>To date, it has not been possible to develop a hydrogeological model for the groundwater fed Berwick Water Resource Zone. Consequently, it has not been possible to model how the Berwick WRZ groundwater sources would perform during drought worse than those on historic record. However, the information NW has gained through its AMP6 National Environment Programme investigations over the previous two years means that it may now be possible to develop such a model. Once developed, NW will undertake modelling to confirm the source deployable outputs for a drought of longer duration and severity than those experienced in the historic record.</p>

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<p>2. Insufficient content to define management decisions, triggers and scenarios accessed in the plan.</p>	<p>The structure and reporting lines of the Drought Management Group (DMG) should be presented. Greater clarification should be given of the nature of responsibilities of the DMG.</p>	<p>NW considers that the structures and reporting line of the DMG are clearly presented in Section 3.2. This confirms that the DMG will be chaired by the Head of Technical Strategy and Support and drought action decisions will be made by the Management Team and Board. Given the draft Drought Plan only contains one drought action which is an 'Appeal for Restraint', then the NW believes that sections 3.2, 3.4 and 3.5 do provide sufficient detail.</p>
	<p>Greater clarity should be provided on what will be considered in the process to trigger an 'Appeal for Restraint'.</p>	<p>No single trigger can be used to decide when the Appeal for Restraint, as defined in NW's LoS, will be instigated. Droughts are complex mixtures of low rainfall depleting resources and hot, dry conditions increasing demand. The two types of event often do not occur simultaneously. In recent dry periods the droughts have been caused by very low autumn / winter rainfall not replenishing stored and ground water supplies, whilst the intervening summers have tended to be much cooler than usual and often much wetter. Therefore judging when an Appeal for Restraint will have a significant impact on conserving water has to be a dynamic decision. NW has updated section 3.2 accordingly.</p>
	<p>The company should improve section 6 (Drought Triggers). The company should explain actions when crossing control lines.</p>	<p>NW has amended the plan (Appendix 1) and included descriptions of the actions that are taken when reservoir storage levels fall below a control curve.</p>
	<p>The company must demonstrate the magnitude and duration of droughts for which the plan has been tested.</p>	<p>As described above, once the Aquator model has been developed, numerous scenarios showing various return periods were run, the results of which showed that the Kielder WRZ is sufficiently resilient to withstand a 1:200 year drought event without any changes to NWs stated levels of service. Section 4.1 of the draft Drought Plan has been updated accordingly.</p>

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<p>3. There is insufficient information presented on bulk exports.</p>	<p>NW should detail the actions it would take on receiving a request from another company during a drought for a transfer.</p>	<p>During the pre-consultation stage of the draft Drought Plan, NW and Yorkshire Water (YWS) met to discuss the possibility of raw water from the River Tees being transferred into YWS supply area. The transfer would be raw water (untreated) from NW's Industrial Water system which our modelling confirms would have no impact on the Kielder WRZ deployable output (DO). Given that demand on that system has declined from around 230 MI/d in 2000/01 to a current level of 100 MI/d, NW does not foresee an issue in making 40 MI/d available to YWS. In order for this transfer to be made available appropriate Environmental Impact Assessments would be required. It is NWs belief that this responsibility lies with the recipient. YWS have made no further approach on this matter.</p> <p>In previous discussions with United Utilities (UU), two options have been considered. The first is a transfer directly from Kielder. NW concludes that given the minimum storage left in Kielder reservoir at the end of the Company's WRMP19 design drought, resources would be available in Kielder reservoir to allow a transfer of up to 100 MI/day. The second option is a 40 MI/d supply from Cow Green reservoir which from a water resource perspective, would most likely be available. However, our assessments are based only on water availability and take no account of any environmental assessments and new infrastructure which may be required to enable such transfers to take place. UU have made no further approach on this matter. Section 8.5.1 of the draft Drought Plan has been updated to accordingly.</p>
	<p>NW must ensures its plans are consistent with those of other relevant water companies.</p>	<p>As described above, NW has discussed drought actions with neighbouring water companies. However, NW has not been asked by neighbouring companies to formalise an agreement. Consequently, it is reasonable for NW to highlight the potential for such transfers in its drought plan but not to plan for them.</p> <p>Section 8.5.2 of the draft Drought Plan has been updated accordingly.</p>

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	<p>NW's Drought Plan should set out the Environmental Assessment required for the YW transfer and the responsibilities of each company.</p>	<p>NW believes that the responsibility for Environmental Assessment lies with YW as stated in 8.5.1.</p>
<p>4. Security of Supply in Berwick and Fowberry Resource Zone.</p>	<p>NW to provide clarity on the types of droughts that Berwick and Fowberry WRZ is resilient to.</p>	<p>As described above, to date, it has not been possible to develop a hydrogeological model for the groundwater fed Berwick Water Resource Zone. Consequently, it has not been possible to model how the Berwick WRZ groundwater sources would perform during drought worse than those on historic record. However, the information NW has gained through its AMP6 National Environment Programme investigations over the previous two years means that it may now be possible to develop such a model. We will work with the Environment Agency to develop a model over the next 18 months. Assuming a model can be developed, once developed, NW will undertake modelling to confirm the source deployable outputs for a drought of longer duration and severity than those experienced in the historic record.</p>

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	<p>Consideration should be given with regards to current voluntary licence restrictions and limited surplus.</p> <p>How will NW deal with the conclusions of the current investigations</p>	<p>NW has completed its Berwick AMP6 National Environment Programme investigation which has considered the sustainability of each of the groundwater sources. This has concluded that all are sustainable except one source. Consequently, NW has completed an options appraisal to see how all of the sources could be made sustainable. The Company's preferred solution is to replace the unsustainable borehole with a new borehole to be drilled away from the current boreholes. This will spread the abstraction which in turn will reduce the overall draw down in groundwater levels caused by NW abstraction. If permitted by the EA, the replacement borehole would be constructed in the first half of AMP7. Even with the voluntary reduction being applied to the annual licensed quantity, NW forecasts a supply surplus of 2.29Ml/d in 2019/20 and 2.54Ml/d in 2024/25. The increase in the supply surplus reflects a reduction in distribution input due to the Company's proposed target to reduce leakage in the Berwick WRZ by 15% by 2024/25. Given the forecast supply surplus, NW does not consider that the voluntary licence reductions pose a significant risk to drought resilience. The draft Drought Plan has been updated to reflect the results of the sustainability investigation and the latest PR19 WRMP supply and demand forecasts.</p>
5. Change of modelling system	NW to provide more information on the implications for Deployable Output during drought based on the new Aquator model	Section 2.6 of the draft Drought Plan has been amended to present the latest PR19 WRMP deployable output and drought resilience assessments utilising the new Aquator model.
	Clarify when it plans to move to the new resource modelling system	NW has already moved to the new model which has been used to undertake its PR19 WRMP deployable output and drought resilience assessments.
	Outline the process it will	The Kielder Water Resource Zone Aquator model, as it's name suggests,

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	follow if the change to this new system results in a significant change to the plan.	treats Kielder WRZ as a whole instead of the three main operating areas, Tyne, Wear, and Tees. As presented in NW's PR19 WRMP, the model still calculates a deployable output under both worst historic drought on record and a reference 1 in 200 year drought, that provides a supply surplus across the full planning period.
	Update before publishing the final plan to reflect the change to Aquator.	NW has updated the draft Drought Plan to reflect the change to Aquator.
6. Improving Communications	The company should ensure all content is appropriate to the NW operating area.	NW has revised the text removing all reference to restrictions and drought permits/orders.
	The company should state how it incorporated the conclusions of the CCW 'Understanding Drought and Resilience' report, or if not, why not.	The promotion of water efficiency to customers has been an important part of managing supplies of water since 1997. NW has reviewed the CCW report 'Understanding drought and resilience' and taken into consideration the points they have made. Section 10.2 of the draft Drought Plan has been updated accordingly.
	Provide greater clarity on what will trigger an appeal for restraint and the lead in time required to escalate levels of efficiency campaigns.	As described above, we do not believe that a single trigger can be used to decide when an Appeal for Restraint, as defined in NW's LoS, would be implemented. The timing of the drought (summer or winter), the duration (e.g. more than one dry winter), the severity (i.e. rainfall deficit), customer demand, river flows and the Environment Agency's own drought status would all be taken into consideration in terms of judging when to implement an Appeal for Restraint to maximise demand savings. Consequently, the decision necessarily has to be a dynamic one. The lead in time for implementing an appeal for restraint would be approximately 1 week. Section 3.2 of the draft Drought Plan has been updated accordingly.

Area of issue	Changes Required	NW Response
	Define the scale at which drought measures are to be applied	As stated in Appendix 1 of the draft Drought Plan, any communication campaign on saving water would be applied across both Water Resource Zones.
	Greater use should be made of control curves.	As described above, NW has amended the Drought Plan (Appendix 1) and included descriptions of the actions that are taken when reservoir storage levels fall below a control curve.