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

July 2026

.

DOCUMENT CONTROL SHEET

Report Title:	NW Draft Drought Plan 2027 Water Framework Directive (WFD) Report - Bleak Ridge Drought Action
Report Author:	Jacobs UK Limited on behalf of NWG Water Resources Team
Distribution List:	**Internal:** Water Resources & Supply Strategy Manager Water Resources Project File **External:** Environment Agency, Natural England and Historic England
Filename:	NW Draft Drought Plan 2027 – WFD Report – Bleak Ridge - July 2026

REVISIONS

Version	Report Status	Signed off by	Issue Date
1	Draft	Will Robinson	7th July 2026

CITATION

This report should be cited as:

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

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

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1 INTRODUCTION

1.1 Background and Purpose of this Report

Under the Water Industry Act 1991, Northumbrian Water Group (NWG) are required to prepare and update a Drought Plan for each of our supply regions. This document focuses on the Northumbrian Water (NW) supply area. Our Drought Plan must be approved by the Secretary of State for Environment, Food and Rural Affairs and made available for public consultation.

Our Drought Plan will provide a comprehensive statement of the actions we will consider implementing during drought conditions to safeguard essential water supplies and minimise environmental impact within our supply area. The plan will align with our Water Resources Management Plan (WRMP), which sets out the strategic approach to maintaining a supply-demand balance over a 25-year planning period.

We must ensure that our Drought Plan meets the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD Regulations) before implementation.

This Water Framework Directive (WFD) Report presents a Stage 2 WFD Compliance Assessment prepared in support of the development of our Drought Plan. This report is the second output of the WFD process. This document summarises the Bleak Ridge drought action, including the site context, and the findings of the Stage 1 WFD Strategic Compliance Assessment[1] which was undertaken in 2025. This report also outlines the approach and methodology adopted and evaluates the potential impacts of the drought action on water bodies within a defined Study Area, in accordance with the requirements of the WFD Regulations.

1.2 The WFD Context

The WFD Regulations 2017, establish a statutory framework for the protection and enhancement of water bodies, including rivers, lakes, estuaries, coastal waters, and groundwater.

Under this legislation, drought actions must be assessed for their potential impact on the ecological and chemical status of nearby water bodies, as defined within River Basin Management Plans (RBMPs). These plans set out environmental objectives and measures to achieve “Good” status, and any proposed development must demonstrate compliance with these objectives, avoiding deterioration and supporting improvement where feasible. Key considerations include surface water runoff, pollution risk, and habitat disruption.

[1] Northumbrian Water. 2026. *NW Drought Plan 2027 Strategic Water Framework Directive (WFD) Report*. [Unpublished]

1.3 The NW Plan Context

We supply water to approximately 2.7 million customers in the North East of England which extends from the Scottish border in the north to the Yorkshire border in the south and to as far west as the Cumbrian border. The major population centres of Tyneside, Wearside and Teesside are located within NW's supply in this area.

In accordance with NW's WRMP 2025 - 2030, the supply area comprises two Water Resource Zones (WRZs) known as the Kielder WRZ and the Berwick & Fowberry WRZ (see Figure 1.1 below). Berwick & Fowberry WRZ is in the far north of the supply area and serves approximately 1% of customers whilst the Kielder WRZ serves the remaining 99% of customers. For more information on the WRZs see NW's Drought Plan Strategic Environmental Assessment Report (2026)[2].

This WFD Assessment focuses on the Bleak Ridge drought action, which relates to the Berwick & Fowberry WRZ supplying approximately 1% of customers across NW's supply area. While the action supports water supply resilience across the wider WRZ, it involves a localised and temporary operational change at the Bleak Ridge borehole, consisting of a lowering of pumps and an increase of daily and annual abstraction volumes at Bleak Ridge borehole of up to 1.45 Ml/d during drought conditions at drought level 3b[3].

These actions are implemented in accordance with Northumbrian Water's Drought Plan with effects confined primarily to Till Fell Sandstone WFD Groundwater Body as demonstrated by the impact assessment presented in the Environmental Assessment Report (EAR): Bleak Ridge Drought Action[4]. The assessment therefore focuses on this water bodies while recognising the wider WRZ context.

[2] Northumbrian Water Group (2025). *Draft Drought Plan 2027 Strategic Environmental Assessment.*
[3] Drought levels (1 to 3b) are described in the NW Draft Drought Plan 2027
[4] Northumbrian Water (2026) Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan & mitigation measures) [Unpublished]. Available on request.

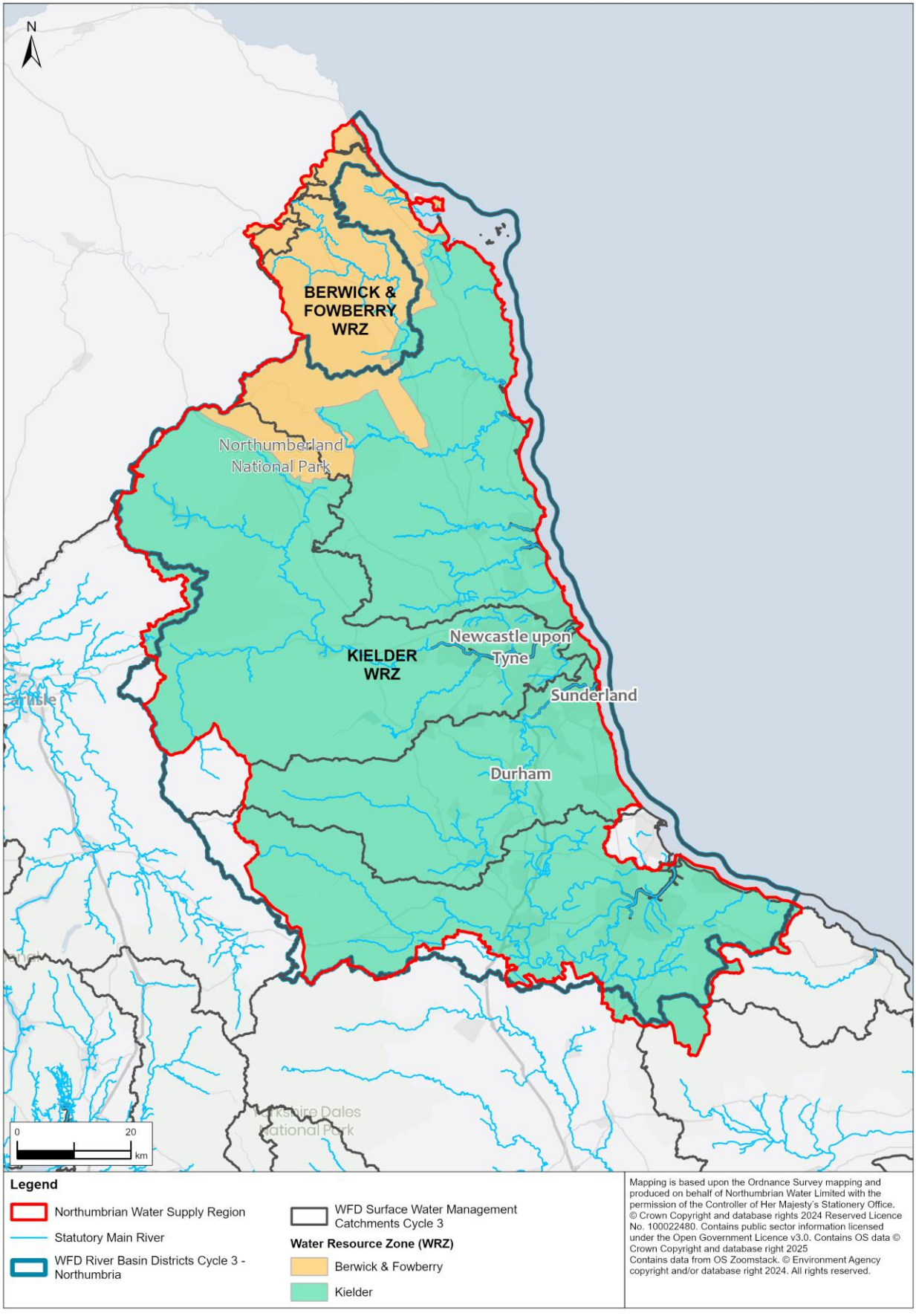


Figure 1.1 Map showing Northumbrian Water's Supply Area

1.4 The WFD Legislation Requirements

The WFD Regulations were transposed from the Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000), which was established to provide a framework for managing, protecting and improving the water environment.

The WFD Regulations require all water bodies to achieve both Good Ecological Status (GES) and Good Chemical Status (GCS), and Heavily Modified Water Bodies (HMWBs) or Artificial Water Bodies (AWBs) to achieve Good Ecological Potential (GEP) and GCS, in accordance with the environmental objectives set out under the WFD.

Drought Plans are a statutory requirement meaning there is a legal obligation binding water companies to the requirements of the WFD Regulations. Water companies are required to demonstrate that their plan supports the environmental objectives contained within RBMPs, including preventing deterioration, achieving protected area objectives and achieving water body status objectives.

1.5 WFD Objectives

The main objectives of the WFD Regulations are to:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- Aim to achieve at least ‘Good Status’ for all waters by 2027;
- Promote sustainable use of water;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and,
- Help reduce the effects of floods and droughts.

2 BLEAK RIDGE DROUGHT ACTION

2.1 Site Context and Features

This report assesses the impacts of the Bleak Ridge drought action, which is associated with the Bleak Ridge groundwater abstraction within the Berwick and Fowberry WRZ.

The Bleak Ridge abstraction licence was previously set at 3.0 megalitres per day (Ml/d). However, this was subject to a WFD "no deterioration" (ND)[5] licence cap in 2025 following an AMP6/AMP7 investigation and the licence has now been formally reduced to 1.55 Ml/d. The WFD licence cap was imposed to protect the Till Fell Sandstone Groundwater Body from over abstraction and to maintain sustainable groundwater levels. The drought action seeks a temporary increase in abstraction back up to 3.0 Ml/d, for a limited period during severe drought conditions. This drought action will be secured through the application of a Drought Permit. Table 2.1 summarises the details of the current abstraction licence.

Table 2.1 NW Public Water Supply (PWS) abstraction licence details

Licence and Details	
Licence Number	1/21/0/069
Source Name	Bleak Ridge PWS borehole
Licence commencement date	17 June 2025
Annual licence quantity	565.75 Ml/yr
Daily licence quantity	1.55 Ml/d (2025-present)
Previous licensed quantity	3.00 Ml/d (1997-2025)
Location (NGR)	NT 94615 45777
Groundwater Body	Till Fell Sandstone (GB40302G703700)
Aquifer unit abstracted	Murton Crags Sandstone (Fell Sandstone Formation)
Borehole depth	155 m below ground level
Abstraction interval	135-155 m below ground level
Licensing framework	Till and Tweed Abstraction Licensing Strategy

2.2 Description of Drought Action

The Bleak Ridge drought action comprises a temporary operational modification to increase groundwater abstraction from the existing Bleak Ridge PWS borehole during periods of severe drought when PWS security is at risk. The action involves increasing the daily abstraction rate from the current licence of 1.55 Ml/d to the previous licence capacity of 3.0 Ml/d, providing an additional 1.45 Ml/d of supply. The increase will be achieved through lowering of the existing submersible pump (from approximately 70 m to 135 m below ground level) and increase abstraction from the Murton Crags Sandstone aquifer unit (135-155 m depth).

The pump lowering is itself a separate drought action, as it could be carried out irrespective of whether the licence is increased and is not a drought action that requires a

[5] Article 4(1) of the WFD states: *"Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water…"* and *"Member States shall implement the measures necessary to prevent or limit the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater…"*

Drought Permit. However, increasing the licence is only viable if the pump has been lowered. No new borehole drilling, or surface construction is required and the proposed modification utilises an existing licensed borehole, and water treatment plant assets. However, in order to meet the previous fully licensed rate of 3.0 Ml/d, a new pump would have to be sourced and installed, as the current infrastructure is only capable of abstracting at up to 1.92 Ml/d[6]. The implementation timeline is minimal (days to weeks for permit grant and operational adjustment), enabling rapid deployment when the appropriate drought action trigger condition is reached.

The increase in groundwater abstraction associated with the drought action is classified as a Level 3b action (infrequent/exceptional scenarios) under NW's Drought Plan, deployed only after all Level 1, 2, and 3a demand-side and supply-side drought actions have been fully implemented and when regional groundwater levels fall below critical trigger thresholds. This drought action requires a Drought Permit to be issued by the Environment Agency before it can be implemented. This Drought Permit would allow for an increase in abstraction as described by this drought action for a maximum of six months. The action would be withdrawn immediately upon trigger breach (environmental thresholds exceeded) (refer to Table 2.2), rainfall recovery, or permit expiry.

The drought action is justified under WFD Article 4.6 (temporary derogation for exceptional circumstances) and Article 4.7 (exemption for essential human uses including public drinking water supply). As set out in NW's Bleak Ridge Environmental Assessment Report (EAR)[7], robust environmental monitoring and adaptive management framework ensures early detection and mitigation of any impacts on priority habitats and environmental receptors, with provision for abstraction reduction or early withdrawal if thresholds are breached.

Table 2.2 Triggers and actions

Receptor	Parameter	Yellow Trigger (Investigate)	Orange Trigger (Review)	Red Trigger (Withdraw)	Action if Breached
Groundwater level	Environment Agency Observation Borehole (OBH)	Decline 0.3-0.5m below baseline for two weeks	Decline 0.5-0.7m below baseline for two weeks	Decline > 0.7m below baseline OR below historical minimum	Investigate cause (drought action vs. natural drought vs. other abstractions). Review habitat condition monitoring. If habitat stress also evident, reduce abstraction (staged reduction 3.0 → 2.5 → 2.0Ml/d) or early withdrawal to 1.55Ml/d WFD no deterioration cap.

[6] Dearlove, J. and Schofield, P. (2022). *AMP6 Till Fell Sandstone Sustainable Abstraction Investigation: Phase 2 - Pumping at Fully Licenced. Final Report*, *Northumbrian Water Ltd.,* May 2022.

[7] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

Receptor	Parameter	Yellow Trigger (Investigate)	Orange Trigger (Review)	Red Trigger (Withdraw)	Action if Breached
Water quality (nitrate)	Environment Agency Observation Borehole (OBH)	Increase to 40-50 mg/l	Increase to >50 mg/l with rising trend	Sustained > 50 mg/l + environmental evidence of impact	Investigate cause (new pollution source vs. drought action-induced concentration). Liaise with Environment Agency. Increase sampling frequency to weekly. If attributable to drought action and rising trend, consider abstraction reduction.

3 WFD APPROACH AND METHODOLOGY

3.1 Methodology

The methodology for the WFD Compliance Assessment comprises the following:

Screening - A preliminary WFD assessment was completed at Stage 1, and all relevant information has been carried forward into this report. Any further screening of additional water bodies at this stage is due to information that has subsequently become available from the Environmental Assessment Report (EAR)[8].

Scoping - builds on the findings from the screening and applies specific risks to the identified activities. This step also details which WFD element is at risk. The WFD quality elements are generally categorised into the following sub-sections:

1. Biological Elements - phytoplankton, phytobenthos, macrophytes, benthic invertebrates, and fish
2. Hydromorphological Elements - connection to groundwater, quantity and dynamics of flow, river depth and width variation, structure and substrate of the riverbed, structure of the riparian zone
3. Physico-Chemical Elements - temperature, pH, dissolved oxygen, nutrients, salinity, acidification status, nutrient conditions
4. Chemical Elements - priority hazardous substances, priority substances, other pollutants

This determines which WFD quality elements are being taken forward into the Impact Assessment.

Impact Assessment - The impact assessment draws on the findings from both previous steps to provide a detailed analysis of specific risks to WFD quality elements arising from the proposed activities. This includes making informed judgments based on the duration, magnitude, and overall significance of impact that the activity could cause. Following the identification and explanation of these risks, appropriate mitigation measures are outlined to avoid or minimise any adverse effects on the relevant WFD quality elements.

When proposals affect water bodies designated as HMWBs or AWBs, the assessment considers their consistency with the relevant Programme of Measures (PoMS) set out in the RBMP. This includes consideration of mitigation measures identified to support the achievement of GEP. More generally, the proposed drought action is assessed against the environmental objectives and PoMs applicable to all affected water bodies to determine whether it could hinder the delivery of planned measures or give rise to significant effects requiring additional mitigation. Assessment of the proposals against water body status objectives ensures compliance with the WFD, including the achievement of GES or GEP, as appropriate.

[8] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

3.2 Study Area

For the purposes of this WFD assessment, the Study Area encompasses:

- The Bleak Ridge PWS borehole including a 2 km radius around it to capture any WFD groundwater and/or surface water bodies potentially affected by the proposed drought action
- A 2 km buffer around any identified surface water bodies to capture any designated sites which may be impacted by the drought action as they may be hydrologically or ecologically connected

It should be noted that designated sites are identified as Protected Areas under the Water Framework Directive and must be considered in the assessment of WFD objectives. These include:

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Sites of Special Scientific Interest (SSSI)
- Shellfish waters
- Bathing waters
- Nutrient Sensitive Areas (NSA)
- National Nature Reserves (NNR)
- Nitrate Vulnerable Zones (NVZ)
- Drinking Water Protected Areas.

3.3 Data Sources

The following data sources have been used to support this Stage 2 WFD Compliance Assessment:

- Catchment Data Explorer[9]
- MAGIC multi-agency mapping[10]
- Water Resources Planning Guideline[11]
- Environmental Assessment Guidance for WRMPs and Drought Plans (2021)[12]
- A practical guide to the Strategic Environmental Assessment Directive[13]

[9] Environment Agency (2026). *Catchment Data Explorer*. Available at: https://environment.data.gov.uk/catchment-planning [Accessed April 2026]
[10] Department of Environment, Food and Rural Affairs (DEFRA) (2026). *Multi-Agency Geographic Information for the Countryside (MAGIC) Map.* Available at: https://magic.defra.gov.uk/MagicMap.html [Accessed April 2026]
[11] Environment Agency, Natural Resources Wales and The Water Services Regulation Authority (2026). *Water resources planning guideline*. Available at: https://www.gov.uk/government/publications/water-resources-planning-guideline [Accessed April. 2026].
[12] UKWIR (2021). *Environmental Assessment Guidance for Water Resources Management Plans and Drought Plans. London: UK Water Industry Research*. Available at: https://ukwir.org/environmental-assessments-for-water-resources-planning [Accessed April 2026].
[13] Office of the Deputy Prime Minister, Scottish Executive, Welsh Assembly Government, and Department of the Environment (Northern Ireland) (2005). *A practical guide to the Strategic Environmental Assessment Directive*. London: Office of the Deputy Prime Minister. Available at: https://assets.publishing.service.gov.uk/media/5a78ec0740f0b62b22cbddd2/practicalguidesea.pdf [Accessed April 2026].

- Water Company Drought Plan Guideline[14]
- Water Resources Planning Guideline Supplementary Guidance [15]
- Environmental Assessment for Water Company Drought Planning: Guidance[16]

[14] Environment Agency and Department for Environment, Food and Rural Affairs (2025). *Water company drought plan guidance, 2025. Available at: https://www.gov.uk/government/publications/water-company-drought-plan-guideline-2025* [Accessed April 2026]

[15] Environment Agency (2022). *Water resources planning guideline supplementary guidance – actions required to prevent deterioration.* Available at: https://www.gov.uk/government/publications/review-of-englands-emerging-regional-water-resources-plans/review-of-englands-emerging-regional-water-resources-plans [Accessed April 2026].

[16] Environment Agency (2025). *Environmental assessment for water company drought planning: Guidance*. Version 1.0. LIT 75033. Published 21 March 2025. Environment Agency, in collaboration with Defra and Natural England.

4 SUMMARY OF STAGE 1 WFD REPORT

4.1 Methodology

The Stage 1 WFD Report provided a preliminary WFD assessment undertaken as an initial step to identify the relevant drought actions and associated water bodies that could potentially be affected. As a high-level assessment, it was completed at a lower level of detail than the subsequent Stage 2 WFD Compliance Assessment and was used to screen out drought actions that were not considered to require further assessment. The assessment applied a screening and scoring methodology to distinguish between water bodies requiring detailed evaluation and those where impacts were absent or limited to minor, localised, and short-term effects (Score 1). Only water bodies identified as having the potential for 'Medium' (Score 2) to 'High Impact' (Score 3) were taken forward to this WFD Compliance Assessment.

4.2 Assessment Findings

The Stage 1 Assessment concluded that the Bleak Ridge drought action could result in a 'Medium' impact on the North Low from Source to Berrington Burn (GB103021073260), Newbiggin Dean Catch (tributary of Tweed) (GB102021073060), and Horncliffe Mill Burn Water Body (GB102021073070). Potential impacts were also identified for Northumberland Carboniferous Limestone and Coal Measures (GB40202G700200).

There is potential for these impacts to affect several WFD quality elements, including:

- Biological
- Hydromorphological
- Physico-chemical
- Groundwater quantity
- Groundwater chemical balance.

On this basis, a Detailed WFD Assessment is required for the North Low from Source to Berrington Burn, Newbiggin Dean Catch (tributary of Tweed), and Horncliffe Mill Burn surface water bodies, as well as the Northumberland Carboniferous Limestone and Coal Measures, with a focus on the quality elements listed above.

5 SCREENING OF WATER BODIES

This section identifies and provides baseline information on all the relevant water bodies within the Study Area. These are:

Surface Water (River):

- North Low from Source to Berrington Burn Water Body
- Newbiggin Dean Catch (tributary of Tweed) Water Body
- Horncliffe Mill Burn Water Body.

Groundwater:

- Northumberland Carboniferous Limestone and Coal Measures Groundwater Body
- Till Fell Sandstone Groundwater Body
- Till Devonian and Lower Carboniferous Groundwater Body.

These water bodies have been evaluated against the drought action and have been screened in or out depending on the impacts.

5.1 North Low from Source to Berrington Burn Water Body

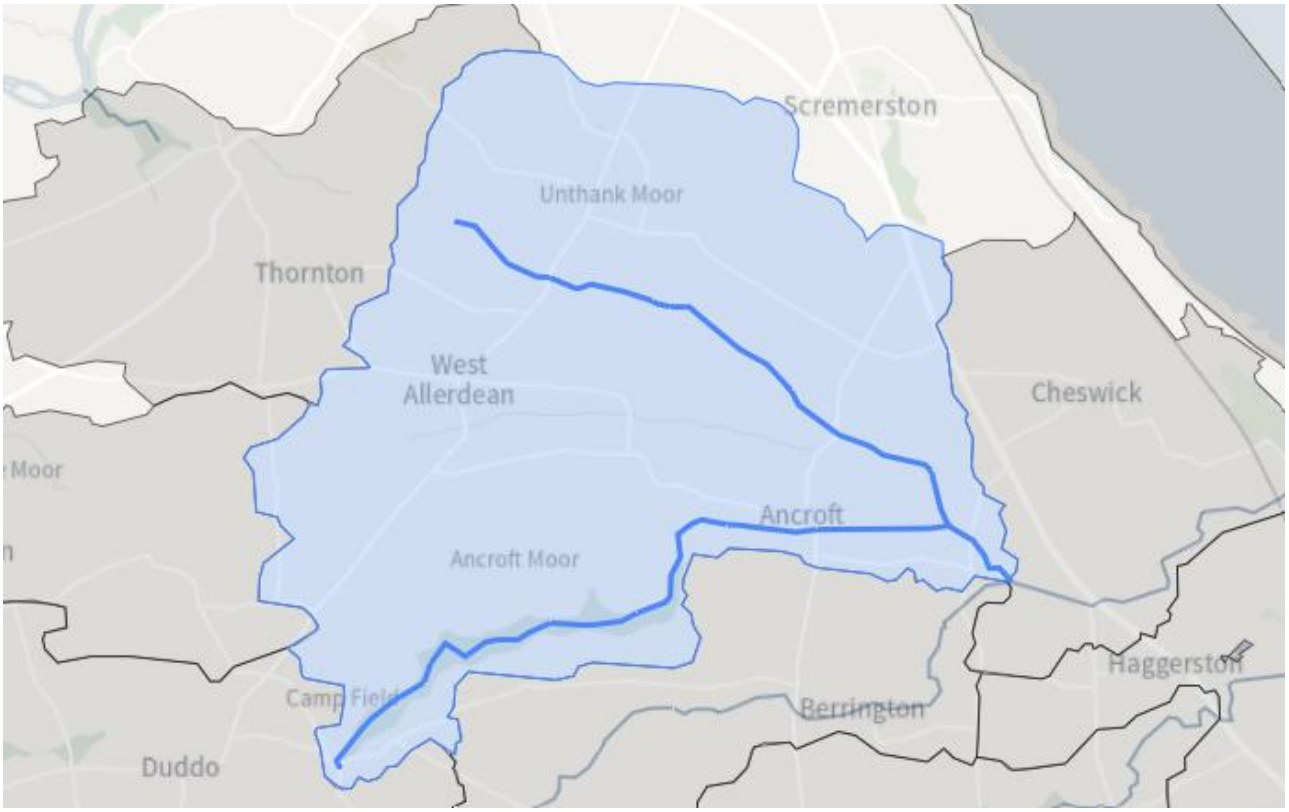


Figure 5.1 North Low from Source to Berrington Burn WFD Water Body[17]

[17] Environment Agency (2026). *Catchment Data Explorer – North Low from Source to Berrington Burn Water Body*. Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB103021073260 [Accessed April 2026]

The baseline data for the North Low from Source to Berrington Burn Water Body are shown in Table 5.1.

Table 5.1 Water Body data for the North Low from Source to Berrington Burn WFD Water Body[17]

Water Body ID	GB103021073260
Water Body name	North Low from Source to Berrington Burn
NGR	NU0187244757
Catchment area (ha)	3423.59
Length (km)	15.38
Hydromorphological designation	Not designated Artificial or Heavily Modified
Current Ecological Status	Moderate
Ecological Status Objective	Good (2027)
Reasons for not achieving good status	▪ Unknown (pending investigation) - Macrophytes and Phytobenthos Combined ▪ Measures delivered to address reason, awaiting recovery – Polybrominated diphenyl ethers (PBDE), Mercury and Its Compounds
Protected area designation and list of protected areas	▪ Holy Island – Shellfish Water Directive ▪ Berwick Fell – Nitrates Directive
Biological quality elements	Moderate
Physico-chemical quality elements	High
Hydromorphological Supporting Elements	Not high
Chemical Status	Fail (2019) – Does not require assessment

An assessment undertaken in the EAR[18], found that there is no groundwater-surface water connectivity between the underlying aquifer and the North Low from Source to Berrington Burn Water Body during drought conditions. Therefore, the North Low from Source to Berrington Burn Water Body has been screened out of further assessment.

[18] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

5.2 Newbiggin Dean Catch (trib of Tweed) Water Body

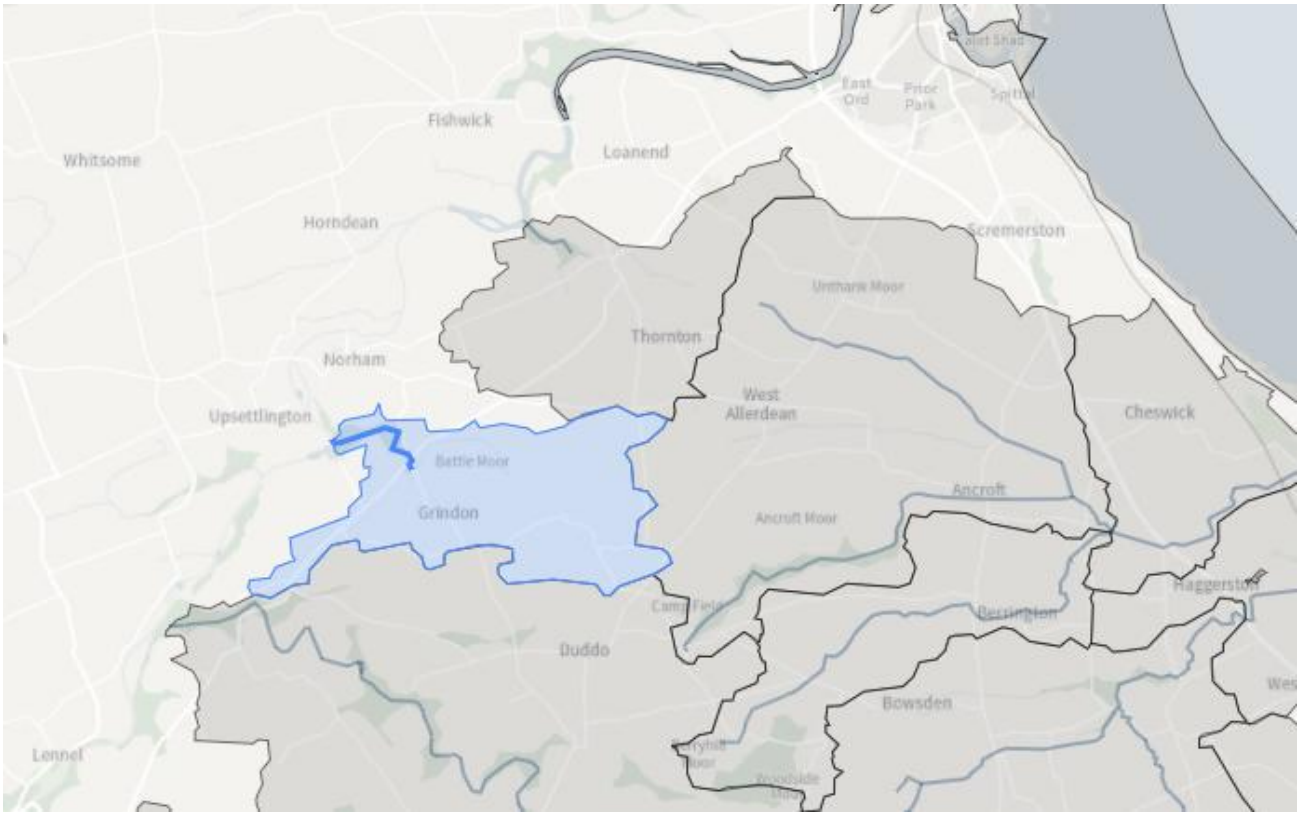


Figure 5.2 Newbiggin Dean Catch (trib of Tweed) WFD Water Body[19]

The baseline data for the Newbiggin Dean Catch Water Body are shown in Table 5.2.

Table 5.2 Water Body data for the Newbiggin Dean Catch (trib of Tweed) WFD Water Body[19]

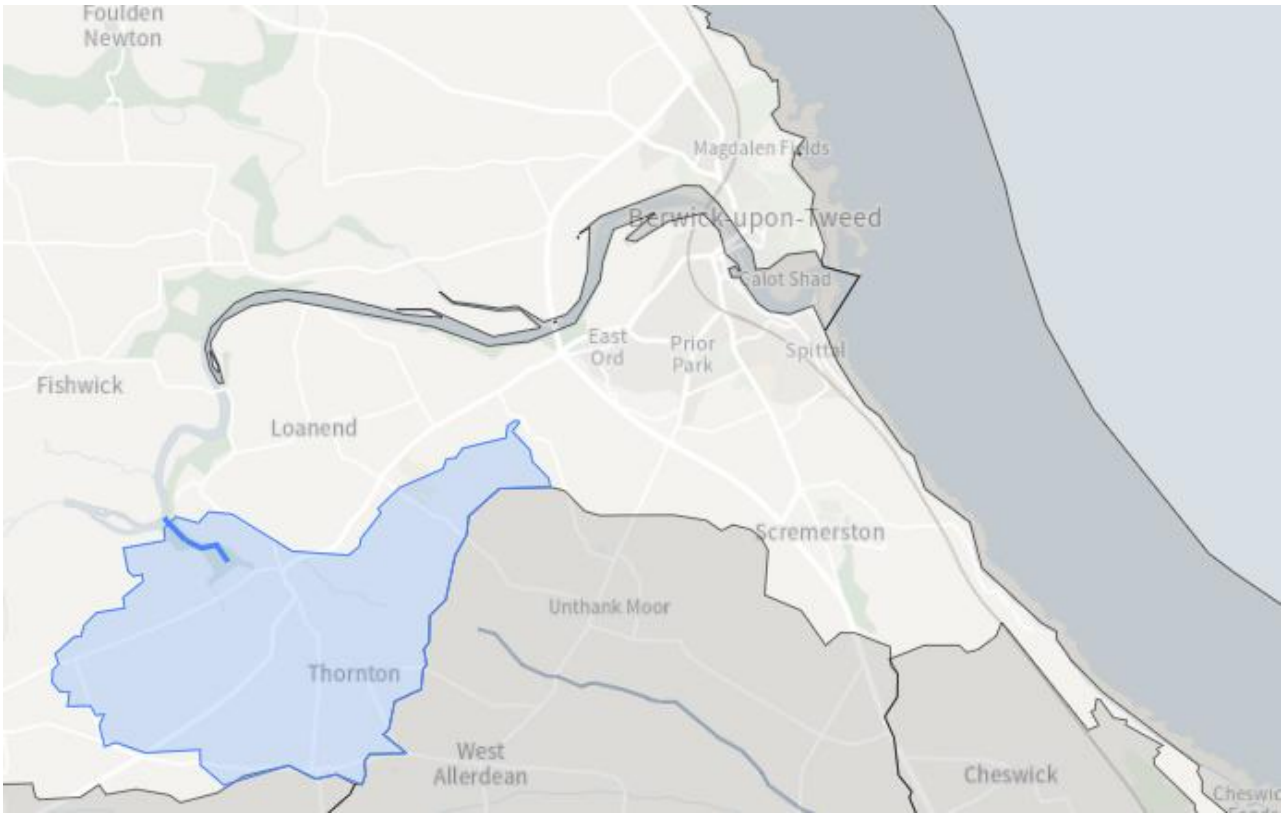
Water Body ID	GB102021073060
Water Body name	Newbiggin Dean Catch (trib of Tweed)
NGR	NT9050946165
Catchment area (ha)	1164.629
Length (km)	2.242
Hydromorphological designation	Not designated Artificial or Heavily Modified
Current Ecological Status	Good
Ecological Status Objective	Good (2015)
Reasons for not achieving good status:	▪ Surface water abstraction by Water Industry – Hydrological Regime ▪ Measures delivered to address reason, awaiting recovery – PBDE, Mercury and Its Compounds

[19] Environment Agency (2026). *Catchment Data Explorer – Newbiggin Dean Catch (tributary of Tweed) Water Body*. Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB102021073060 [Accessed April 2026]

	▪ High to Good deterioration, no action required (RFD only) – Phosphate
Protected area designation and list of protected areas	▪ River Tweed – SAC
Biological quality elements	Good
Physico-chemical quality elements	Good
Hydromorphological Supporting elements	Not high
Chemical Status	Fail (2019) – Does not require assessment

An assessment undertaken in the EAR[20], found that there is no groundwater-surface water connectivity between the underlying aquifer and the Newbiggin Dean Catch (trib of Tweed) Water Body during drought conditions. The headwaters of the Newbiggin Dean Catch (trib of Tweed) Water Body originate on the Till Fell Sandstone outcrop and the Bleak Ridge borehole (though its headworks are located on the Scremerston Coal geological unit), also abstracts from the Till Fell Sandstone. However, while there is a horizontal overlap of mapped waterbody extents, there is a vertical separation and hydrological disconnection between the surface water flows in the headwaters of the Newbiggin Dean Catch (trib of

Tweed) Water Body and the groundwater levels within the drought action Zone of



Influence, as described in the EAR[21]Horncliffe Mill Burn Water Body

Figure 5.3 Horncliffe Mill Burn WFD Water Body[22]

The baseline data for the Horncliffe Mill Burn Water Body are shown in Table 5.3.

Table 5.3 Water Body data for the Horncliffe Mill Burn WFD Water Body (Source: EA Catchment Data Explorer)[22]

Water Body ID	GB102021073070
Water Body name	Horncliffe Mill Burn
NGR	NT9304549168
Catchment area (ha)	1218.56
Length (km)	1.12
Hydromorphological designation	Not designated Artificial or Heavily Modified
Current Ecological Status	Good
Ecological Status Objective	Good (2021)
Reasons for not achieving good status:	▪ Measures delivered to address reason, awaiting recovery – Mercury and Its Compounds, PBDE

[22] Environment Agency (2026). *Catchment Data Explorer – Horncliffe Mill Burn Water Body*. Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB102021073070 [Accessed April 2026]

	▪ Water Industry – Groundwater abstraction – Hydrological Regime
Protected area designation and list of protected areas	▪ River Tweed – SAC
Biological quality elements	Good
Physico-chemical quality elements	Good
Hydromorphological Supporting elements	Not high
Chemical Status	Fail (2019) – Does not require assessment

An assessment undertaken in the EAR[23], found that there is no groundwater-surface water connectivity between the underlying aquifer and the Horncliffe Mill Burn Water Body during drought conditions. The headwaters of the Horncliffe Mill Burn Water Body originate on the Till Fell Sandstone outcrop and the Bleak Ridge borehole (though its headworks are located on the Scremerston Coal geological unit), also abstracts from the Till Fell Sandstone. However, while there is a horizontal overlap of mapped waterbody extents, there is a vertical separation and hydrological disconnection between the surface water flows in the headwaters of the Horncliffe Mill Burn Water Body and the groundwater levels within the drought action Zone of Influence, as described in the EAR[24] . Therefore, the Horncliffe Mill Burn Water Body has been screened out of further assessment.

[23] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*
[24] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

5.3 Northumberland Carboniferous Limestone and Coal Measures Groundwater Body

Figure 5.4 Northumberland Carboniferous Limestone and Coal Measures WFD Groundwater Body[25]

The baseline data for the Northumberland Carboniferous Limestone and Coal Measures Groundwater Body are shown in Table 5.4.

Table 5.4 Water Body Data for the Northumberland Carboniferous Limestone and Coal Measures WFD Water Body[25]

Water Body ID	GB40302G700200
Water Body name	Northumberland Carboniferous Limestone and Coal Measures
NGR	NU1310040912
Groundwater area (ha)	182274.064
Hydromorphological designation	Not applicable
Current overall status	Poor
Status objective (overall)	Poor (2015)
Reasons for not achieving good status:	▪ Point source – Chemical Dependent Surface Water Body Status ▪ Unknown (pending investigation) – General Chemical Test
Protected area designation and list of protected areas	▪ Tweed Estuary – SAC ▪ Berwickshire & North Northumberland Coast – SAC ▪ Lindisfarne NNR

[25] Environment Agency (2026). *Catchment Data Explorer – Northumberland Carboniferous Limestone and Coal Measures Water Body.* Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB40302G700200 [Accessed April 2026]

	▪ Bothal Burn Catchment (trib of Wansbeck) NVZ ▪ Lindisfarne – SPA and Ramsar ▪ Northumbria Coast – SPA and Ramsar ▪ Northumberland Marine – SPA ▪ Holburn Lake & Moss – SPA and Ramsar ▪ Northumberland Carboniferous Limestone and Coal Measures – Drinking Water Protected Area (DWPA) ▪ Berwick Fell – Nitrates Directive ▪ Simonside Hills – SAC ▪ Pont from Small Burn to Blyth NVZ – Nitrates Directive ▪ North Northumberland Dunes – SAC ▪ Newham Fen (SAC)
Quantitative (GW)	Good
Chemical (GW)	Poor

The Northumberland Carboniferous Limestone and Coal Measures Groundwater Body underlying bedrock geology is comprised of Scremerston Coal Member sandstones, siltstones and mudstones in the vicinity of the drought action. While the drought action appears, on the surface, to be occurring within the Northumberland Carboniferous Limestone and Coal Measures Groundwater Body, it is unlikely to impact it directly. This is because the existing borehole has a depth of 155 m, which is deeper than the Scremerston Coal Member secondary A aquifer, and which draws from the underlying Fell Sandstone Formation principal aquifer (which is associated with the Till Fell Sandstone Groundwater Body).

Indirect impacts on the Northumberland Carboniferous Limestone and Coal Measures Groundwater Body as a result of the drawdown from the borehole are also unlikely. The EAR[26] outlines that the mudstone layers consistently dip to the southeast and are thought to act as aquitards, effectively restricting groundwater flow between the permeable sandstone layers and isolating them into discrete aquifer units. This is likely to act as a barrier to drawdown from the borehole and therefore groundwater within the Northumberland Carboniferous Limestone and Coal Measures Groundwater Body will not be impacted by the drought action.

Therefore, due to the above reasoning, the Northumberland Carboniferous Limestone and Coal Measures Groundwater Body has been screened out of further assessment.

[26] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

5.4 Till Fell Sandstone Groundwater Body

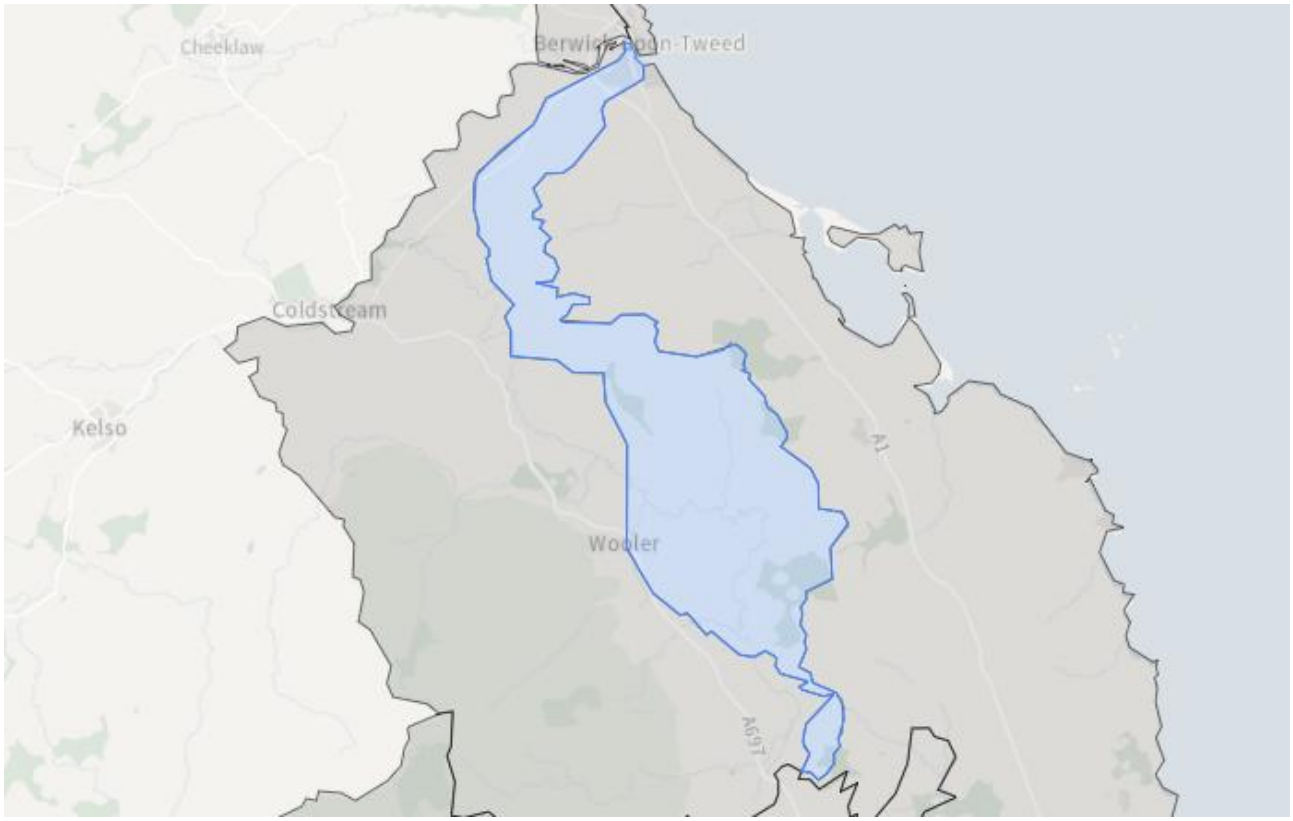


Figure 5.5 Till Fell Sandstone WFD Groundwater Body[27]

The baseline data for the Till Fell Sandstone Groundwater Body are shown in Table 5.5.

Table 5.5 Water Body Data for the Till Fell Sandstone WFD Groundwater Body[27]

Water Body ID	GB40302G703700
Water Body name	Till Fell Sandstone
NGR	NU0089431367
Groundwater area (ha)	19126.578
Hydromorphological designation	Not applicable
Current overall status	Poor
Status objective (overall)	Good (2040)
Reasons for not achieving good status:	▪ Flow – Water Industry – Quantitative Water Balance ▪ Point source – Farm/site infrastructure and Private Sewage treatment – Trend Assessment- Trend Assessment ▪ Diffuse source – Poor nutrient management ▪ Unknown (pending investigation) – Quantitative Dependent Surface Water Body Status and Chemical Dependent Surface Water Body Status
Protected area designation and list of protected areas	▪ Tweed Estuary – SAC ▪ River Tweed – SAC ▪ Lindisfarne – NNR ▪ Holburn Lake & Moss – SPA and Ramsar

[27] Environment Agency (2026). *Catchment Data Explorer – Till Fell Sandstone Water Body*. Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB40302G703700 [Accessed April 2026]

	▪ Berwick Fell – Nitrates Directive ▪ Ford Moss – SAC ▪ Till Fell Sandstone – DWPA ▪ Thornton Bog to Murton – Safeguard Zone
Quantitative (GW)	Poor
Chemical (GW)	Poor

The Till Fell Sandstone Groundwater Body has been screened in for further assessment as the Bleak Ridge borehole, with a depth of 155 m, draws directly from the Fell Sandstone Formation principal aquifer.

5.5 Till Devonian and Lower Carboniferous Groundwater Body

Figure 5.6 Till Devonian and Lower Carboniferous Groundwater Body[28]

The baseline data for the Till Devonian and Lower Carboniferous Groundwater Body are shown in Table 5.6.

Table 5.6 Water Body Data for the Till Devonian and Lower Carboniferous WFD Groundwater Body[28]

Water Body ID	GB40202G700100
Water Body name	Till Devonian and Lower Carboniferous
NGR	NT9429224669
Groundwater area (ha)	49519.663

[28] Environment Agency (2026). *Catchment Data Explorer – Till Devonian and Lower Carboniferous Water Body.* Online. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB40202G700100 [Accessed April 2026]

Hydromorphological designation	Not applicable
Current overall status	Poor
Status objective (overall)	Good (2040)
Reasons for not achieving good status:	▪ Unknown (pending investigation) – Chemical Dependent Surface Water Body Status
Protected area designation and list of protected areas	▪ Tweed Estuary – SAC ▪ River Tweed – SAC ▪ Berwick Fell – Nitrates Directive ▪ Willow Burn (Tweed) – NVZ ▪ Till Devonian and Lower Carboniferous – DWPA
Quantitative (GW)	Good
Chemical (GW)	Poor

An assessment undertaken in the EAR[29], found that there is a groundwater divide that exists between the Till Fell Sandstone Groundwater Body and the Till Devonian and Lower Carboniferous Groundwater Body coinciding with the boundary between Fell Sandstone and Ballagan Formation outcrops (refer to Figures 5.7 and 5.8). This divide prevents groundwater flow between the two water bodies. Therefore, the Till Devonian and Lower Carboniferous Groundwater Body has been screened out of further assessment.

[29] Northumbrian Water (2026). *Bleak Ridge Environmental Assessment Report (EAR) (incl. monitoring plan and mitigation measures) [Unpublished]. Available on request.*

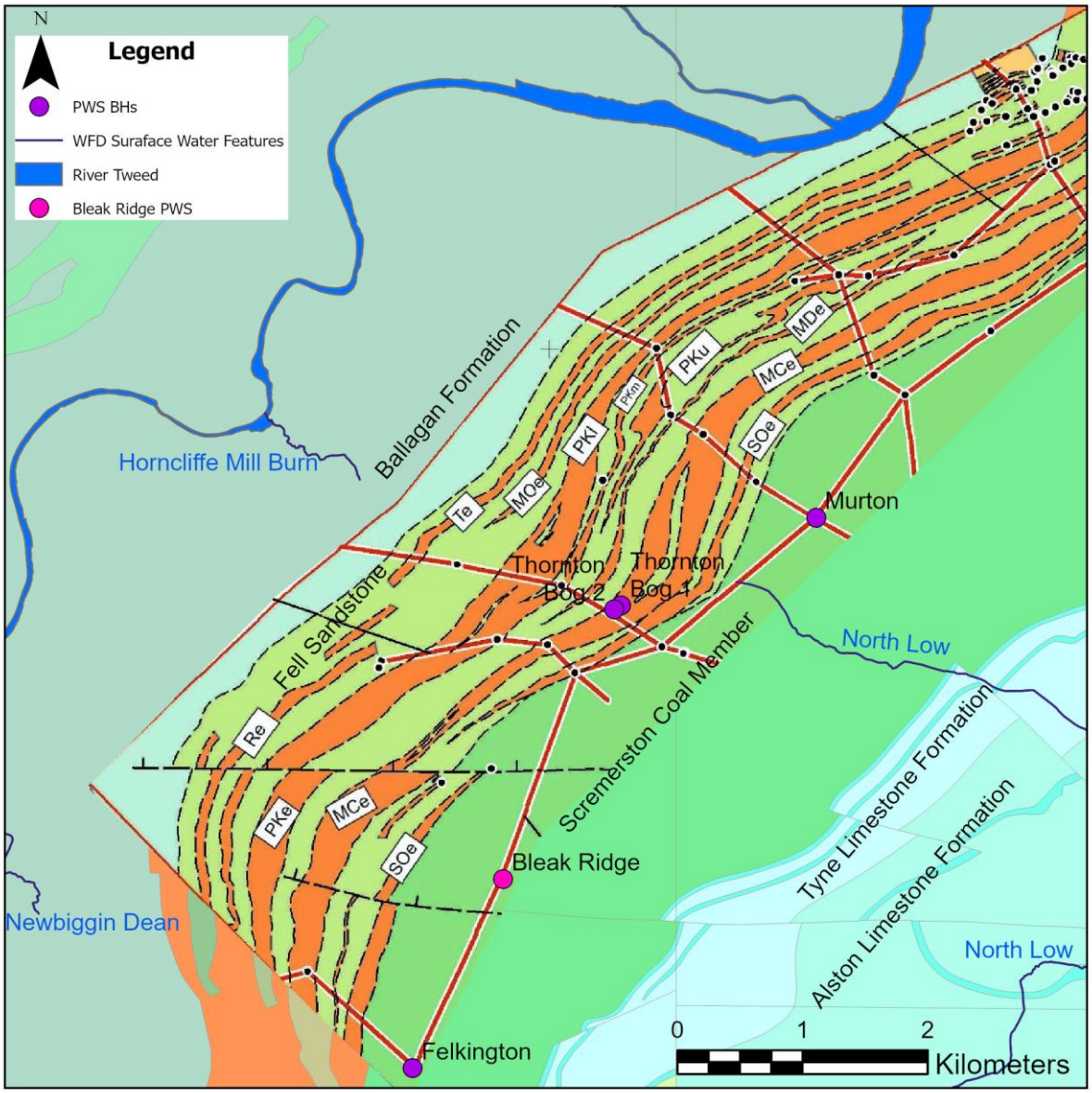


Figure 5.7 Updated geology from Ford (2019)[30] overlain on 1:50,000 BGS geological map shown with abstraction borehole locations and surface water features

[30] Ford, J.R., Wakefield, O.J.W. and Kearsey, T. (2019). *Geological characterisation and cross-section study of the Fell Sandstone Formation in the Berwick-upon-Tweed area, Northumberland. British Geological Survey Commissioned Report, CR/18/130.*

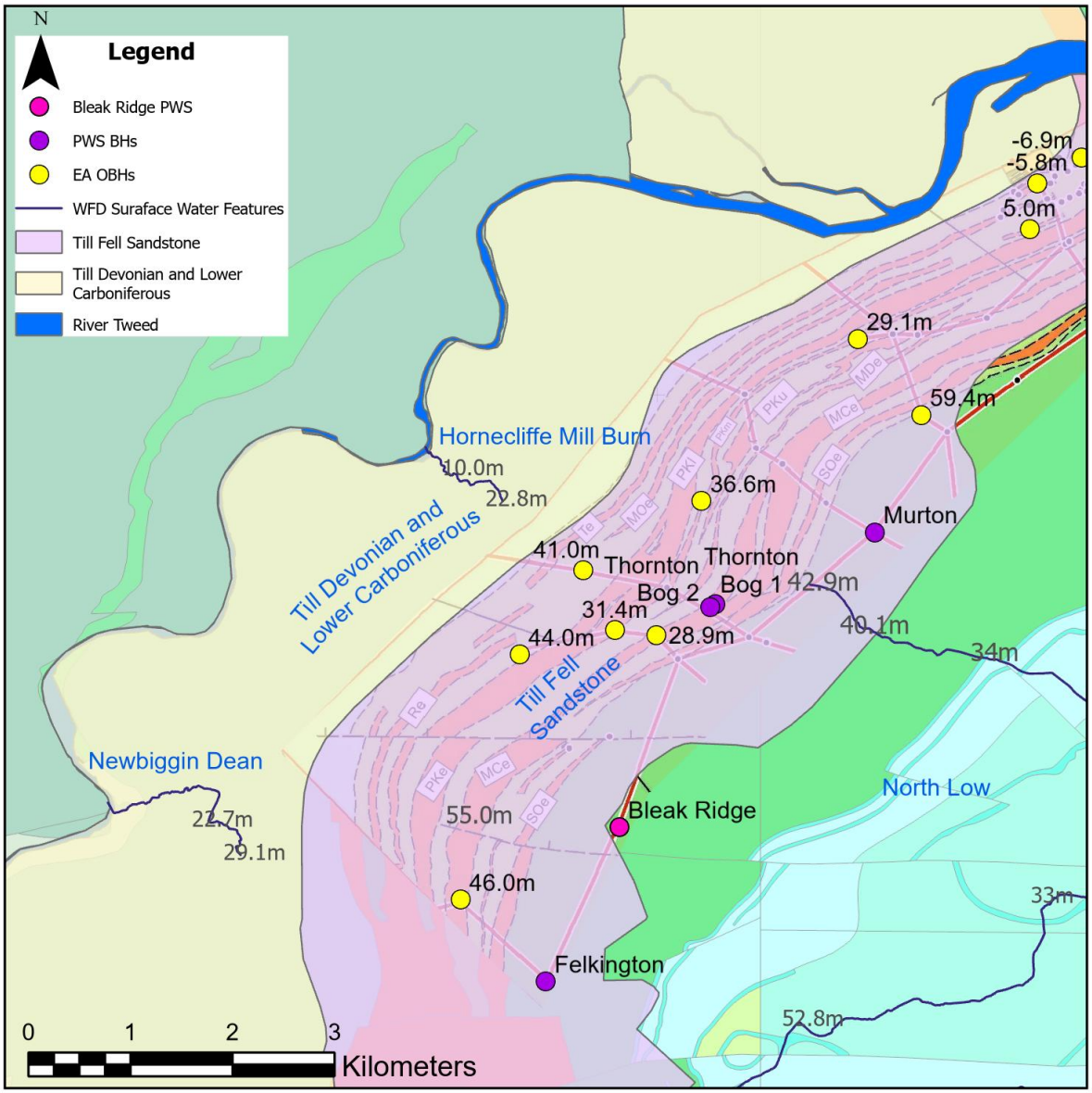


Figure 5.8 Groundwater bodies mapped showing the Groundwater Body divide with surface water features, the average September groundwater level elevations at Environment Agency OBH, and surface elevations of water features

6 SCOPING OF QUALITY ELEMENTS

This section presents the scoping of WFD quality elements for the Till Fell Sandstone Groundwater Body, which was screened in as potentially affected by the Bleak Ridge drought action. The proposed drought action will impact the Groundwater Body directly as the borehole has a depth of 155 m and draws directly from the Fell Sandstone Formation principal aquifer.

The scoping therefore identifies which quantitative and chemical elements may experience pressure from the proposed drought action, which involves increasing abstraction from the existing Bleak Ridge borehole for a maximum of six months by increasing the depth of the submersible pump. This will only occur after other demand-side and supply-side drought actions have been fully implemented and regional groundwater levels fall below critical trigger thresholds. Table 6.1 summarises the outcome of the scoping and rationale for including or excluding each element.

Table 6.1 WFD elements in Till Fell Sandstone Groundwater Body (✓ = Scoped In; ✗ = Scoped Out)

Quality Element	Description of Element	Scoped In / Out	Justification
Quantitative	Dependent surface water body status	✗	Dependent surface water body status has been scoped out due to the fact that the EAR concluded that there are no surface-groundwater interactions exist within the vicinity of the proposed drought action.
	Groundwater Dependent Terrestrial Ecosystem (GWDTEs) test	✗	GWDTEs test has been scoped out as there are no GWDTEs located within 2 km of the proposed drought action. The nearest GWDTE is Ford Moss SSSI, which is located approximately 8 km south east of the proposed drought action. The nearest priority habitat with potential to be a GWDTE is an area of lowland fens, which is located approximately 3 km north east.
	Saline intrusion	✗	The Till Fell Sandstone Groundwater Body is not located in a coastal area and the proposed drought action will occur a considerable distance from the coastline (>8 km as the crow flies).
	Water balance	✓	Water balance has been scoped in due to the requirement for increased abstraction from the Till Fell Sandstone Groundwater Body.
Chemical (GW)	Dependent surface water body status	✗	Dependent surface water body status has been scoped out due to the fact that the EAR concluded that no surface-groundwater interactions exist within the vicinity of the proposed drought action.

Quality Element	Description of Element	Scoped In / Out	Justification
	Drinking water protected area	✓	Drinking water protected areas have been scoped in as the proposed drought action is located within a Drinking Water Safeguard Zone (SgZs) for groundwater. This zone covers a large area of the Till Fell Sandstone Groundwater Body.
	GWDTEs test	X	GWDTEs test has been scoped out as there are no GWDTEs located within 2 km of the proposed drought action. The nearest GWDTE is Ford Moss SSSI, which is located approximately 8 km south east of the proposed drought action. The nearest priority habitat with potential to be a GWDTE is an area of lowland fens, which is located approximately 3 km north east.
	Saline intrusion	X	The Till Fell Sandstone Groundwater Body is not located in a coastal area and the proposed drought action will occur a considerable distance from the coastline (>8km as the crow flies).
	General chemical quality	✓	General chemical quality has been scoped in due to the existing Poor chemical status of the Till Fell Sandstone Groundwater Body.

7 ASSESSMENT OF IMPACTS

This section evaluates the potential environmental impacts associated with the Bleak Ridge drought action. The impacts are assessed in terms of the drought action's effects on qualitative and quantitative status elements, as well as implications for drinking water supply and groundwater body resilience.

The impact of the drought action on the Till Fell Sandstone Groundwater Body is assessed in Table 7.1. This assessment uses RBMP Cycle 3 data from the Catchment Data Explorer website as well as findings of the EAR. The assessment considers the impacts in terms of the individual quality elements scoped into the assessment in Table 6.1.

Table 7.1 Impact assessment for Till Fell Sandstone WFD Groundwater Body

Quality Element	Quality Element Impact	Mitigation / Control
Quantitative	**Water balance:** The EAR hydrogeological analysis indicates that the drought action abstraction increase could influence groundwater levels near receptors. Horizontal propagation of drawdown along bedding planes is classified as having a low magnitude of impact because, although minor drawdown could occur, nearby OBH suggest that water depth to water table is sufficiently below land surface such that groundwater is not accessible to shallow-rooted vegetation. Vertical propagation and propagation through superficial deposits are classified as negligible magnitude of impact because there will be little to no impact through these pathways within the duration of drought action.	Mitigation will include monitoring of groundwater levels and habitat condition. Decline of groundwater level is compared against trigger thresholds which include the following adaptive management measures outlined in EAR: ▪ Yellow Trigger (Investigate) – Decline of groundwater level 0.3 - 0.5 m below baseline for two weeks ▪ Orange Trigger (Review) – Decline of groundwater level 0.5 - 0.7 m below baseline for two weeks ▪ Red Trigger (Withdraw) – Decline >0.7 m of groundwater level below baseline OR below historical minimum Simultaneously, the cause of falling groundwater tables will be investigated (drought action vs. natural drought vs. other abstractions). Habitat condition monitoring will be reviewed and if habitat stress is also evident, a staged reduction in abstraction (3.0 → 2.5 → 2.0 Ml/d) or early withdrawal to 1.55 Ml/d WFD no deterioration cap.

Quality Element	Quality Element Impact	Mitigation / Control
	Groundwater level drawdown in the Till Fell Sandstone aquifer is constrained by geological barriers and limited to the immediate zone of influence, with recovery expected within six to 12 months. Overall, the EAR found negligible impacts on Till Fell Sandstone Groundwater Body Quantitative quality elements. Therefore, no impacts are likely on this quality element as a result of the proposed drought action.	
Chemical (GW)	**Drinking water protected area:** The EAR found that the proposed drought action has the potential to increase concentrations of water quality parameters in the Till Fell Sandstone Groundwater Body. While the groundwater body is currently classified as Poor, the assessment indicates that the proposed activity is unlikely to result in any measurable deterioration in status. Overall, the EAR found that the drought action would result in low impacts on Till Fell Sandstone Groundwater Body Chemical quality elements. Therefore, no impacts are	Mitigation will include monitoring of water quality (nitrate) concentrations. Increases in nitrate concentrations will be compared against trigger thresholds which include the following adaptive management measures outlined in EAR: ▪ Yellow Trigger (Investigate) – Increase to 40-50 mg/l; ▪ Orange Trigger (Review) – Increase to >50 mg/l with rising trend; and ▪ Red Trigger (Withdraw) – Sustained >50 mg/l + environmental evidence of impact. Simultaneously, the cause of rising nitrate levels will be investigated (new pollution source vs. drought action-induced concentration). We will liaise with the Environment Agency and increase sampling frequency to weekly. If rising nitrate levels are attributable to the drought action, consider abstraction reduction.

Quality Element	Quality Element Impact	Mitigation / Control
	likely to arise from the proposed drought action on the Drinking Water Safeguard Zone that covers a part of the Till Fell Sandstone Groundwater Body.	
	General chemical quality: The EAR found that the proposed drought action has the potential to increase concentrations of water quality parameters in the Till Fell Sandstone Groundwater Body. However, any change in water quality would be expected to be small, temporary, and reversible following cessation of the drought action. Consequently, no measurable deterioration in the status of the Till Fell Sandstone Groundwater Body is anticipated. Overall, the EAR found that the drought action would result in low impacts on Till Fell Sandstone Groundwater Body Chemical quality elements. Therefore, no impacts are likely on this quality element as a result of the proposed drought action.	Mitigation will include monitoring of water quality (nitrate) concentrations. Increases in nitrate concentrations will be compared against trigger thresholds which include the following adaptive management measures outlined in EAR: ▪ Yellow Trigger (Investigate) – Increase to 40-50mg/l; ▪ Orange Trigger (Review) – Increase to >50mg/l with rising trend; and ▪ Red Trigger (Withdraw) – Sustained >50mg/l + environmental evidence of impact. Simultaneously, the cause of rising nitrate levels will be investigated (new pollution source vs. drought action-induced concentration). We will liaise with the Environment Agency and increase sampling frequency to weekly. If rising nitrate levels are attributable to the drought action, consider abstraction reduction.

7.1 Protected Areas

There are several designated sites within 2 km of the Study Area with potential hydrological or functional connectivity to the drought action. These sites and a description of the reasons for designation are included in Table 7.2.

Table 7.2 Designated sites within or with hydrological/functional connection to the Study Area

Site Name	Reason(s) for Designation
River Tweed SAC	Watercourses of plain to montane levels with important aquatic vegetation also supporting river, brook and sea lamprey. The site also supports important communities of Atlantic salmon and common otter.
Berwickshire and North Northumberland Coast SAC	Designated for mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, reefs, submerged or partially submerged sea caves and grey seal.
North Northumberland Dunes SAC	Designated for embryonic shifting dunes, shifting dunes along the shoreline with marram grass, dunes with creeping willow, humid dune slacks, fixed dunes with herbaceous vegetation and petalwort.
Lindisfarne SSSI	Comprises a wide range of coastal habitats including extensive intertidal sand and mudflats which support internationally important wintering populations of waders and wildfowl, as well as coastal features and rock exposures of physiographical and geological importance. The site supports a number of rare plants and invertebrates and important breeding populations of seabirds.
Lindisfarne Ramsar	Designated for Bar-tailed godwit, graylag goose, light-bellied brent goose, redshank and ringed plover. It has significant populations of wintering waterbirds and wigeons.
Lindisfarne NNR	This site is characterised by wide expansive sandy beaches. There are a range of summer dune flowers and significant populations of migratory birds every autumn and winter, including light bellied Brent geese. This site is the only regular wintering site for this species, accommodating 40% of the world population.
Northumbria Coast Ramsar	This site regularly supports nationally important numbers of purple sandpipers and high concentrations of turnstone. Also includes an area of sandy beach at Low Newton, which supports a nationally important breeding colony of little tern, and parts of three artificial pier structures which form important roost sites for purple sandpiper.
Tweed Estuary SAC	Designated for estuaries, sandflats not covered by seawater at low tide. There are also significant numbers of sea and river lamprey inhabiting the site.
Till Fell Sandstone Drinking Water Protected Area	Drinking Water Groundwater SgZs are established around public water supplies where additional pollution control measures are needed. The Water Framework Directive requires that Drinking Water Protected Areas are identified (WFD Article 7.1) and that they are given the necessary protection (WFD Article 7.3) with the aim of avoiding deterioration in their quality in order to reduce the level of purification treatment required in the production of drinking water.

Site Name	Reason(s) for Designation
Ford Moss SSSI	Lowland peat bog within a shallow basin in undulating country. It is underlain by Carboniferous Limestone and the peat is largely dependent on rainfall for its supply of water and nutrients. It contains large areas of heather, hare's tail cottongrass and cross-leaved heath. Also contains sundew, cranberry, white sedge, Sphagnum mosses, bog myrtle, stands of mature oak, Scot's pine and birch
Berwick Fell NVZ	Designated as being at risk from agricultural nitrate pollution.
Holburn Lake & Moss SSSI	Holburn Lake and Moss is important for two main features: habitat and wild bird interest.
Holburn Lake & Moss Ramsar	The Holburn Lake and Moss site is important for its wet mire habitat and the associated bird interest. The site is an important winter roost site for greylag geese, of which the entire Icelandic race winters in Britain. Regularly visited by large flocks of mallard Anas platyrhynchos, wigeon and teal, provides an inland roost for coastal wildfowl during unfavourable weather conditions. A few pairs of shelduck, shoveler and tufted duck regularly breed here.

These designated sites were considered as part of the assessment. No statutory or non-statutory designated sites occur within the Zone of Influence of the drought action and no groundwater–surface water pathways have been identified between the Bleak Ridge abstraction and designated site features. Consequently, no impacts on designated sites are anticipated and no further assessment is required.

7.2 Invasive Non-Native Species

No impacts relating to Invasive Non-Native Species (INNS) are expected. The proposed drought action utilises the existing licensed borehole at Bleak Ridge and existing water treatment infrastructure, with no requirement for new borehole drilling or surface construction. In addition, as no groundwater–surface water connectivity has been identified between the abstraction and nearby watercourses, the drought action is not expected to affect surface water flows or hydraulic conditions. Consequently, no changes are anticipated that could facilitate the introduction, establishment or spread of INNS.

7.3 Assessment of the Drought Action Against the WFD Mitigation Measures

As part of the WFD compliance assessment, it is necessary to consider whether the drought action could support the delivery of relevant mitigation measures or, conversely, hinder their implementation. No waterbody specific mitigation measures have been identified for the Till Fell Sandstone Groundwater Body or the water bodies within the Study Area. However, the Solway Tweed RBMP provides a summary of measures applicable across the management units (Table 7.3).

Table 7.3 Mitigation measures in the Solway Tweed RBMP and potential impacts of the Bleak Ridge drought action

Mitigation Measure	Description	Potential Impact on Mitigation Measure
Partnerships working with farmers and land-managers	Partnership working with farmers, land managers, advisory services and water companies has improved compliance with the relevant legislation and adoption of good practices to reduce pollution and environmental impacts. Focused approach in diffuse pollution priority catchments, ensuring compliance with environmental legislation to help achieve water quality objectives. This work also promotes a circular economy by minimising nutrient and soil loss and saving farmers money. Sustainable Farming Incentive, rewarding the delivery of environmental benefits. Spatial prioritisation of public goods to determine which public goods might be best delivered, how those public goods could be delivered through individual land management plans and how to best encourage collaboration of land managers to deliver public goods across multiple land holdings. The Environment Agency is leading a study into the issues in both the Solway and Tweed Estuaries to better understand the causes of elevated nutrient levels and how best to manage them.	The drought action is unlikely to have any impact, positive or negative, on this mitigation measure.
Sustainable management of water resources	Encouraging irrigators to work together to manage the available water resources in an equitable manner. On the River Till, the Environment Agency is currently in the process of incorporating previously exempt surface water abstractions into the regulatory regime, ensuring the demand for water is within sustainable limits.	The drought action is unlikely to have any impact, positive or negative, on this mitigation measure.
Restoring rivers and removing	While some of physical changes to water bodies are essential (e.g., providing flood protection, supporting drinking water	The drought action is unlikely to have any impact, positive or

Mitigation Measure	Description	Potential Impact on Mitigation Measure
man-made barriers to fish migration	supplies and food production), other changes have damaged the environment, meaning that many rivers and waterways do not provide healthy habitats for wildlife.	negative, on this mitigation measure.
Controlling INNS	While not all non-native species are damaging, INNS have negative effects on the environment. Partners such as the Solway Firth Partnership and Tweed Forum have set out objectives for the sites that they oversee. The best practice manual developed by the Tweed Forum[31] has been published and shared across all fishery trusts.	The drought action is unlikely to have any impact, positive or negative, on this mitigation measure.

[31] Tweed Forum (2026). *The Tweed Invasives Project.* Online. Available at: https://tweedforum.org/wp-content/uploads/2020/05/TF_invasives_manual_web-FINAL.pdf [Accessed April 2026]

8 CONCLUSION

This WFD assessment has been undertaken to support Northumbrian Water's Drought Plan (DP27) and evaluates the potential effects of the Bleak Ridge drought action on the status and objectives of potentially affected WFD water bodies, including both surface water and groundwater bodies. The Compliance with the key objectives against which the impacts of the Bleak Ridge drought action were assessed against in this assessment, have been summarised as part of concluding compliance with WFD Regulation, see Table 8.1.

The screening of water bodies 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.

Compliance with the key objectives against which the impacts of proposed drought actions were assessed are outlined below in Table 8.1.

Table 8.1 Compliance of the Bleak Ridge drought action with the environmental objectives of the WFD

Environmental Objective	Summary of Assessment for the Drought Action	Compliance with the WFD Directive
No changes affecting high status sites	No high-status features are present in the Till Fell Sandstone Groundwater Body.	Yes
No changes that will cause failure to meet surface water GES or Potential or result in a deterioration of surface water Ecological Status or Potential	Due to the lack of surface-groundwater interactions, the assessment has determined that the proposals will not cause deterioration in the status of any surface water body or prevent any implementation of water body mitigation measures in the future.	Yes
No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies	There are limited pathways by which the proposals could affect other water bodies within the River Basin District. Impacts have been assessed to be low, minor or negligible. Therefore, it is not considered likely that drought action will compromise the achievement of the Environmental Objectives of any other water bodies.	Yes
No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status	While there is the potential for impacts on the Till Fell Sandstone Groundwater Body, impacts have been assessed to be low, minor or negligible. Therefore, it is not considered likely that drought action will cause a failure to meet good status or result in a deterioration in status.	Yes
No changes that will progressively reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances.	The assessment has determined that there is no output from the drought action that will prevent this objective from being met.	Yes