




WildFish.

England is not prepared for Drought

The escalating
demand for water
supply and the
environmental
consequences

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Across the country, current water supply is unable to meet public demand in times of extreme drought. This is due to a failure by water companies to invest in supply solutions, such as reservoirs.

WildFish research shows that water companies intend to take water from already stressed river systems for the foreseeable future to meet this demand.

**This will be an
ecological disaster.**

The problem

Our water supply in England is fully dependent on naturally occurring supplies of water from lakes, rivers, reservoirs and ground water sources.

Water is abstracted from these sites and pumped to our homes and businesses through a network of pipes. Fifteen water companies are responsible for maintaining public water supply, nine of those also manage our wastewater (Figure 1).

The problem is that these natural sources cannot supply enough water to meet our demand and provide enough left over for our rivers and lakes to thrive. This is true in normal conditions. In drought, our waters face ecological disaster.

Our failure to invest sufficiently in water storage, desalination or water recycling plants coupled with insufficient efforts to reduce demand, is the root cause of the problem. As a result, our water supply will struggle to meet demand in drought. The numbers are deeply concerning.

In times of extreme drought, England's current baseline water supply deficit is about 500 million litres-a-day [1]. That is equivalent to the daily water use of over 3 million people. This baseline water supply deficit is expected to reach over a billion litres-a-day by 2030. This is the water used by 10% of the population daily.



Key:

Water & wastewater companies

ANH Anglian Water/WSH Dŵr Cymru/HDD Hafren Dyfrdwy/NES Northumbrian Water/SVE Severn Trent Water/SWB South West Water/SRN Southern Water/TMS Thames Water/UUW United Utilities Water/WSX Wessex Water/YKY Yorkshire Water

Water only companies

AFW Affinity Water/BRL Bristol Water/PRT Portsmouth Water/SEW South East Water/SSC South Staffs Water/SES SES Water

Figure 1. Map showing which water company supplies each area of England and Wales. Source: Ofwat.

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There are three principal drivers behind the projected increase in our water supply deficit:

1. Population change

Average water consumption per person, per day, in England is 142 litres [2]. The UK's population is set to increase by approximately 4 million people by 2045 [3]. The majority of that increase will occur in England – mostly in the already severely water-stressed southeast. This population change represents an increase in demand of 570 million litres of water per day.

2. Climate change

In addition to an overall rise in temperature, England will experience changes to annual rainfall distribution culminating in shorter, wetter spells either side of longer, drier periods. As part of this, England can expect an increase in the frequency of extreme weather events. Both drought and flash floods will have negative impacts on our water resources.

3. Abstraction licence change

It is estimated that 700 million litres of water is currently unsustainably abstracted by water companies, every day [4]. This figure could be set to increase to 2 billion by 2050. The National Framework for Water Resources has set the target for all unsustainable abstraction to be replaced between 2025 and 2050.

**700 million
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**That's about
8.75 million
bathtubs.**

What does this mean for our rivers?

Currently only 16% of rivers are classified as healthy according to the Water Framework Directive, and freshwater species are declining quicker than any other [5]. Wild fish populations continue to decline, with salmon populations failing to meet even the most basic conservation limits. Our rivers and the species which depend upon them are already severely stressed and not resilient to change. This means low flows and drought, exacerbated by abstraction during these naturally very vulnerable times, will have even greater impacts on them.

If England was to experience an extreme drought, demand would outstrip supply even now in 2023 [1]. If this was to occur, water companies would be forced to take extra water from rivers, lakes and groundwater sources to ensure public water supply didn't fail. Many rivers already suffer from over-abstraction and low flows, adding drought conditions and extra abstraction would devastate these freshwater ecosystems.

Our water supply will fail to meet demand in a drought because water companies have failed to invest, over many years, in alternative water supply sources. Additional abstraction, through drought permits,

Less water in rivers means:

- Fish are less able to migrate up and down rivers to complete their life cycles.
- Pollutants in the water become more concentrated because of the lack of dilution.
- Increased sedimentation clogs up rivers because they do not have the energy to remove them.
- Reduced shelter and food availability.
- Water temperatures increase and oxygen levels decrease.

continues to remain the cheapest solution to water companies, with the environment picking up the bill. The last reservoir, built in England, was constructed over 30 years ago. The next reservoir to be built, Havant Thicket in Hampshire, is due to be completed in 2030. We are now in a period of time where our rivers are our only source of additional water, to maintain our water supply, in times of extreme drought.

This next decade is a very scary time for our rivers and wild fish.



What are water resource management plans?

Every five years each water company is required to set out its company’s intended approach for balancing water supply and demand, for at least the next 25 years, in statutory water resources management plans (WRMPs) [6].

The last plans were published in 2019 (WRMP19). Water companies are currently in the process of developing the 2024 plans (WRMP24). For the first time WRMP24 company-level plans will be supplemented by five regional water resource plans that will cover England and part of Wales. The timelines are shown in figure 2.



Figure 2. Current timelines for regional water resource plans and the company-level plans.



Current draft WRMP24 consultation

According to Water Resource Planning Guidance (WRPG), water companies' plans were due to be published in October 2022 [7]. This release date was then delayed by a month till 14 November. On the official release date, only a fraction of the plans were published. Over the next month, plans were gradually released with the plans of Thames Water, United Utilities and Anglian Water not released until early 2023. South West Water's plan is still yet to be released, well over two months after the official release date.

The Environment Agency (EA) has confirmed that the late plans were withheld because they failed to meet the minimum standards set by the EA [1]. This primarily related to inaccuracies in the numbers used by the water companies to quantify their water supply and demand. Some water companies were actually given a preliminary deadline, three months before the official release date, as the EA had anticipated this number-based issue arising. Yet, despite this many plans still failed to make the official deadline.

This staggered release has made things very challenging to WildFish and other consultees – particularly when looking at the national picture. Given the interconnectivity of water resources, plans should not be viewed in isolation. Accordingly, if one plan is delayed it will have an impact on your ability to review a separate neighbouring plan. Unfortunately, there have been no consequences for the water companies who released their plans late, despite the severe disadvantages for the consultee.

WRPG also states that plans need to be transparent and understandable in order for customers and stakeholders to be able to effectively comment [7]. The basis of these plans revolve around water supply and demand and how water companies will ensure a supply surplus even in times of extreme drought. Frustratingly, none of the

plans present this information in a clear and transparent format.

Using Southern Water's plan as an example, we are still unable to reach this basic level of understanding. This is after reading their technical report, 1,900 pages of annexes, restricted documents (only available to view in person) and two formal meetings with Southern Water staff. Consequently, an interested member of the public will not be properly informed, of the water resource issues facing their region, even after reading through all the documents available to them. Keeping fundamental information inaccessible benefits water companies by allowing their plans to progress through the consultation period relatively unchallenged.

One of the main catalysts driving this transparency issue is a requirement on water companies to have no water supply deficits in their final plan [6]. We understand that the Government has told water companies that by 2025/26, when the WRMP24 period begins, their plans must show no water supply deficits [7]. This is a challenge for water companies as in several areas the water deficit is over 10 million litres-per-day, during extreme drought, with no additional supply sources [1]. In order to remove the deficit, water companies are proposing to take extra water from the rivers as 'drought measures' and presenting that as "no deficit". This approach does not accord with the published guidance.

Water companies have published plans that make it incredibly difficult to identify individual supply-side solutions, in terms of location and supply benefit, as well as how these supply-side solutions stack up to cancel-out an areas overall water supply deficit. This information is fundamental and should be clearly displayed in the technical report for every year across the planning period.

Case study

Southern Water

In March 2019, following a Public Inquiry, stricter limits were placed on the amount of water Southern Water can abstract from rivers Test, Itchen and Candover during periods of low flows [8]. These cuts in permitted abstraction are to protect the ecology in these internationally important and highly protected chalkstreams.

A water resource management scheme was entered into by the parties pursuant to section 20 of the 1991 Water Industry Act. This section 20 agreement implements the abstraction reductions and included an objective: “not to require the Itchen and Candover Drought orders after 2027 and only to require the Test Surface Water Drought Order or Permit after 2027 in extreme drought events (1 in 500-year drought severity) [8].” Accordingly, Southern Water committed to having new sources of water available, in particular Havant Thicket reservoir, by 2027. However, as we enter 2023 progress towards establishing the new supply solutions has been glacially slow.

Southern Water is responsible for maintaining the water supply to an area designated as Southampton East. This area is highly dependent on the section 20 rivers. In times of extreme drought this area has a water supply deficit of approximately 80 million litres-per-day [1]. Our meeting with Southern Water uncovered that **around 90% of the water needed in this area, during periods of extreme drought, will come from the Itchen and Candover**. Southern Water will achieve this using drought permits, which allows them to increase their abstraction above ecologically-safe limits.

Southern Water’s dependency on the section 20 rivers will remain in place up until Havant Thicket reservoir and associated projects are completed. We understand, from our meeting with Southern Water, that the earliest the full Havant Thicket supplies could come online is now 2031 – though it may take until the mid 2030s. This means the rivers will bear the brunt of the drought deficit – with huge potential environmental costs – for far longer than was envisaged in the section 20 agreement. This is not presented in a transparent way in Southern Water’s dWRMP consultation documents.

Customers and stakeholders with an interest in the Test, Itchen and Candover would be appalled knowing these rivers are the only supply source, to a number of Southern Water’s supply areas, during an extreme drought. Thus, concealing this information minimises the criticism Southern Water could expect to receive on their plan.



What needs to change?

Water Companies must give transparency on the figures so consultees can make informed decisions.

Water supply solutions must be developed urgently.

Nationally, we are in this severe water supply deficit due to years of underinvestment in supply solutions (reservoirs, water recycling and desalination plants) by the water industry. We must fast track the timelines for supply solutions if we are serious about protecting our rivers and wildlife.

Government must act now.

We need political commitment to water neutrality zones in water deficit areas – where no additional development can occur unless at least it is water neutral – until new supply solutions are developed.

Every plan should include a simple, clear table providing:

1. Figures for demand, baseline supply, and the resulting baseline.
2. The contributions of individual sources to baseline supply.
3. Where the water will come from to meet the deficits, identifying sources and quantum.
4. The uncertainty associated with those sources and the contingency plan to deal with that uncertainty.
5. The level of abstraction by source and quantum at each stage (identifying where under drought permit).

This table should cover all years of the planning period. Separate tables should also be included that display this information under various drought scenarios.

References

- [1] Environment Agency personal communications
- [2] Waterwise. (2021). save water.
- [3] Office for National Statistics. (2020). National population projections: 2020-based interim.
- [4] Environment Agency. (2020). Meeting our Future Water Needs: a National Framework for Water Resources.
- [5] Government. (2022). State of the water environment indicator B3: supporting evidence.
- [6] The duty to prepare and maintain a WRMP is set out in sections 37A to 37D of the Water Industry Act 1991.
- [7] Government. (2022). Water resources planning guideline.
- [8] Agreement under Section 20 of the Water Resources Act 1991 between Southern Water Services Limited and The Environment Agency.



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