

## 2022 water levels and river flow rates (England) in the context of the last 21 years

### Wildlife and Countryside Link – August 2022

#### Context

A drought has been declared across much of England this August, including parts of the southwest, central, southern and eastern regions. Analysis by Wildlife and Countryside Link of water level and river flow data for the last 21 years shows that 2022 has had the worst July since 2002 for low water levels and river flows.

In addition to temporary use restrictions now in place for consumers in many regions of the country, this will have [severe consequences for our wildlife](#). Low flows concentrate pollutants in the water environment, increasing their potency, and less dissolved oxygen results in the death of fish and invertebrates. As waterbodies dry up, this reduces the available habitat for wildlife living in and around the watercourse. This particularly threatens sensitive wildlife sites such as our vulnerable and internationally valued chalk streams.

Crucially, the data suggests that if 2022 is the start of an extended drought cycle, water levels and river flow rates could be worse next year, further exacerbating the impact on nature and people.

#### Summary of data

- Considering all three indicators, July 2022 is the worst July since 2002.
- **Reservoir water levels** (average of 64%) at the end of July 2022 is already significantly worse than previous years (the other years are average 71% or more).
  - Example: Farmoor reservoir was on average 97% full from 2002-2021. This July it is 89% full (the previous record low was 89% in 1990).
  - For 19/34 sites in England, the level in 2022 is the lowest since 2002.
  - For 4/20 sites with data, 2022 is equal to or lower than the previous record low.
- 88% of **rivers** had **flow rates** lower than normal and 60% were extremely low.
  - Values for the previous worst (2018) were 67% and 33%.
- 67% of sites had lower than normal **groundwater levels**, with 21% extremely low.
  - The fourth worst since 2002 (2011 was the worst).
- The previous three drought cycles have lasted 3 years (2004-2006; 2010-2012; 2017-2019).
- In each of those cycles, at least 2 of the three indicators were lower in the second year.
- This suggests that **if 2022 is the start of an extended drought cycle**, which previous data shows is very possible, water levels and river flow rates may well be worse next year.

*Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.*

[www.wcl.org.uk](http://www.wcl.org.uk)

## Action needed to build resilience to drought

Our relationship with water is not sustainable, and we do not have sufficient industry or environmental resilience to drought conditions. Most of England is currently [classified as water stressed](#), with demand expected to exceed supply in parts of the country [within the next 20 years](#). [Nearly a quarter](#) of English rivers are already at serious risk from unsustainable water abstraction, responsible for unnaturally low flows that harm wildlife and increase the potency of pollutants.

We need ambitious, holistic action to build that resilience, and to secure a clean and plentiful water supply for nature and for people.

1. [PR24 must be transformational](#) for the water environment, **driving more investment in water resources infrastructure and removing barriers to the uptake of nature-based solutions.**

Investment in water resources infrastructure has failed to keep pace with rising demand, and poor maintenance means that we currently lose nearly 20% of water supply to leaks – equivalent [to 2.4 billion litres per day](#) across England's nine major water companies. There have been no new reservoirs built in southern England since 1976. Concurrently, water companies have paid nearly £2 billion per year in dividends since privatisation, and water company bosses have received £58 million in pay and benefits in the last 5 years alone. It should not be profitable for water resources infrastructure to be unfit for purpose, and consumers should not have to foot the bill for historic failures to invest. PR24, which sets wholesale price controls for water and sewerage companies for 2025 to 2030, must drive the necessary investment in water resources infrastructure to build industry resilience, and Ofwat must limit the payment of dividends and bonuses where companies do not deliver their environmental and societal obligations.

Ofwat and Defra must also address the barriers to the uptake of catchment and nature-based solutions (C&NBS) through the current Price Review, to incentivise and allow their use by water companies and other stakeholders. This would allow us to unlock their full potential to restore soil health and wetland habitats, 'building back wetter' to store more water within the environment, as well as delivering a range of [wider benefits](#) for nature and for society. Ofwat must ensure that environmental resilience is at the heart of PR24, enabling C&NBS through the introduction of natural capital accounting and clear appraisal guidance in the PR24 methodology.

2. Current Government **restrictions on water meter rollout must be removed.**

A lack of water efficiency technology in homes means that consumers are often not aware of or engaged with their water usage. For example, [46% of people](#) think their entire household uses less than 20 litres of water a day, when the real figure is around [150 litres per person](#).

Water meters help consumers to be aware of their water use, and to encourage behaviour change. They can also help consumers to save money on their water and heating bills. Smart meters are proven to be particularly effective; fitting 1 million smart water meters in the UK each year for the next 15 years could save at least [1 billion litres of water a day](#) by the mid-2030s. However, current

*Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.*

[www.wcl.org.uk](http://www.wcl.org.uk)

approaches to meter rollout are piecemeal, slow, and cost-inefficient. Government must remove restrictions limiting water meter rollout, to enable universal metering across England.

**3. Water efficiency requirements in building regulations must be tightened, and water saving measures included in future net zero retrofit programmes.**

We face a potential water [deficit of 4 billion litres per day](#) by 2050. To address this, both businesses and domestic water use must be reduced. England currently has one of the [highest rates of water usage](#) in Europe.

Water demand must be driven down through tighter efficiency requirements for new developments, and through future net zero retrofit programmes incorporating water efficiency alongside energy efficiency. Tighter efficiency standards should be driven by an ambitious Government water efficiency roadmap, including actions such as mandatory water efficiency labelling for devices and fittings. The feasibility of new developments being ‘water neutral’ should also be explored.

**4. The upcoming regional and water company resources management plans must be stronger and more ambitious to strategically manage water resources at catchment scale.**

The upcoming Regional Water Resources Plans and company Water Resources Management Plans [must prioritise meeting the needs of the environment first](#), setting out how current and future need will be met before then addressing demand in a sustainable way.

The plans should achieve this through actions including prioritising the delivery of multiple benefits through C&NBS, increasing resilience through reduced abstraction around protected areas, and ensuring all abstractors play their part in reducing water demand by securing commitments from non-public water supply abstractors.

For further information, please contact Wildlife and Countryside Link:

Bruce Winney

Policy Officer

E: [bruce@wcl.org.uk](mailto:bruce@wcl.org.uk)

Ellie Ward

Policy and Information Coordinator

E: [eleanor@wcl.org.uk](mailto:eleanor@wcl.org.uk)

*Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.*

[www.wcl.org.uk](http://www.wcl.org.uk)

Wildlife and  
Countryside

LINK



*Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.*

[www.wcl.org.uk](http://www.wcl.org.uk)

	Ground water levels						Reservoir levels		River flow rates				OVERALL RANK
	% sites LOWER than normal groundwater	% sites HIGHER than normal groundwater	Mean score (from 1-7)	% sites EXTREME LOW (1&2)	% sites EXTREME HIGH (6&7)	Rank	Average % level reservoirs	Rank	% rivers LOWER than normal flow rate	% rivers HIGHER than normal flow rate	Mean score (from 1-7)	Rank	
<a href="#">2022</a>	67%	0%	3.1	21%	0%	4	64%	<b>1</b>	88%	0%	2.2	<b>1</b>	<b>1</b>
<a href="#">2021</a>	0%	38%	4.7	0%	17%	20	82%	13	10%	40%	4.5	15	17
<a href="#">2020</a>	25%	17%	4.0	4%	13%	10	78%	10	19%	19%	4.2	13	12
<a href="#">2019</a>	58%	4%	3.1	29%	0%	<b>3</b>	82%	14	39%	18%	3.6	6	8
<a href="#">2018</a>	13%	25%	4.3	0%	4%	13	71%	<b>2</b>	67%	0%	2.9	<b>3</b>	5
<a href="#">2017</a>	58%	0%	3.0	33%	0%	<b>2</b>	77%	7	27%	27%	4.0	10	6
<a href="#">2016</a>	4%	38%	4.4	0%	4%	15	85%	16	2%	51%	4.7	17	17
<a href="#">2015</a>	50%	0%	3.4	8%	0%	7	80%	12	27%	7%	3.8	8	9
<a href="#">2014</a>	0%	38%	4.6	0%	13%	18	83%	15	20%	29%	4.2	14	15
<a href="#">2013</a>	4%	21%	4.3	0%	4%	14	78%	11	24%	12%	3.8	9	13
<a href="#">2012</a>	29%	42%	4.7	13%	38%	19	95%	21	0%	98%	6.8	21	21
<a href="#">2011</a>	76%	5%	3.0	33%	5%	<b>1</b>	75%	5	50%	13%	3.4	5	<b>2</b>
<a href="#">2010</a>	24%	19%	4.1	0%	10%	11	74%	4	41%	8%	3.6	7	7
<a href="#">2009</a>	43%	14%	3.8	14%	14%	8	88%	17	8%	56%	5.1	18	14
<a href="#">2008</a>	0%	29%	4.5	0%	24%	17	91%	19	3%	75%	5.4	19	19
<a href="#">2007</a>	5%	38%	4.8	0%	29%	21	94%	20	0%	97%	6.7	20	21
<a href="#">2006</a>	55%	9%	3.3	32%	5%	5	88%	6	76%	3%	2.8	<b>2</b>	<b>3=</b>
<a href="#">2005</a>	63%	5%	3.4	21%	5%	6	74%	<b>3</b>	41%	14%	3.4	4	<b>3=</b>
<a href="#">2004</a>	22%	6%	3.8	6%	6%	9	77%	8	9%	9%	4.0	11	10

Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.

[www.wcl.org.uk](http://www.wcl.org.uk)

<b>2003</b>	21%	21%	4.1	5%	11%	12	77%	9	6%	16%	4.1	12	12
<b>2002</b>	11%	26%	4.5	0%	21%	16	90%	18	3%	59%	4.7	16	18

**Water level and River flow rates since 2002.** 2003, 2010 and 2021 were the three years with the lowest rainfall. Periods marked in peach are drought years (2004-2006; 2010-2012; 2017-2019). **Data is from the monthly Water Situation Reports at the end of July of each year**<sup>1</sup>. Data for **groundwater levels** and **river flow** used the Environment Agency's coding of sites from Exceptionally Low (which I scored as 1) to Exceptionally high (scored as 7). For **reservoir levels**, I used the percentage fullness. River flow rates and reservoir levels were ranked by the mean score across sites and the average level. Groundwater was ranked using a combination of the mean score across sites, percentage of sites lower than normal and percentage of sites with extreme (ie. scored 1 & 2 or 6 & 7). Note, for some reason the 2019 reports were withdrawn but are still available on the archive.

<sup>1</sup> Data from <https://nora.nerc.ac.uk/> pre-2012, [https://webarchive.nationalarchives.gov.uk/ukgwa/20121104054745/http://www.environment-agency.gov.uk/static/documents/Research/WSR\\_July\\_2012.pdf](https://webarchive.nationalarchives.gov.uk/ukgwa/20121104054745/http://www.environment-agency.gov.uk/static/documents/Research/WSR_July_2012.pdf) and <https://www.gov.uk/government/collections/water-situation-reports-for-england> and the archive post 2012.

*Wildlife and Countryside Link is a coalition of 65 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.*  
[www.wcl.org.uk](http://www.wcl.org.uk)