



WHERE AND HOW WILL WE GET OUR WATER?

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Friends of the River Cam
22 September 2026

- **Current situation**
- **Climate science**
- **How nature works**
- **State of our water companies**
- **Planning, policy and delivery process**
- **Data centres!**
- **Living within nature's limits**
- **Taking a nature first approach**
- **Greater Cambridge Local Plan – how to respond**



Current situation

- “Severely water stressed” (Environment Agency)
- Driest part of the UK
- Highest per person water consumption (140 L/P/D)
- 30% currently below sea level
- 60% below sea level by 2100
- Up to 1 metre sea level rise by 2100
- 99% of Cambridge’s water from chalk aquifers
- 800 ML/D (20%) shortfall by 2050

[Water Resources East/](#)

[Cambridge Water Scarcity Unit](#)



Climate science: non stationarity

- “The Earth’s **climate system is highly nonlinear**: inputs and outputs are not proportional, **change is often episodic and abrupt**, rather than slow and gradual, and multiple equilibria are the norm.”

[Rial, J.A., Pielke, R.A., Beniston, M. et al. Nonlinearities, Feedbacks and Critical Thresholds within the Earth's Climate System. Climatic Change 65, 11–38 \(2004\)](#)

- “There is a **gap in the scientific literature** around threshold effects”
- “**Adaptation planning must incorporate unpredictability** and sudden shifts in the climate”
- “... there is a **need to address the interdependency** and inequality of risks”
- “... we **must integrate adaptation action into mitigation efforts**.”

Climate Change Risk Assessment (CCRA3), Jan 2022

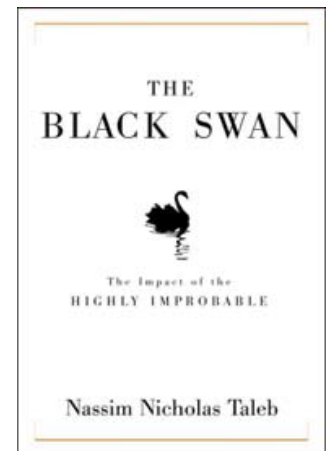
Climatic Change

An Interdisciplinary, International Journal Devoted to the Description, Causes and Implications of Climatic Change

Co-Editors: MICHAEL OPPENHEIMER
GARY YORIE



Springer



Climate science: maladaptation risks

“a process that results in increased vulnerability to climate variability and change, directly or indirectly, and/or significantly undermines capacities or opportunities for present and future adaptation.”

And when:

“... adaptation at one scale creates externalities which adversely impact the adaptive capacity of other areas.”

[UK Climate Risk](#)

Why is a wet country like Scotland facing water scarcity?

5 August 2022 · 37 Comments



Loch katrine

Yorkshire: Drought status declared by Environment Agency

16 August 2022



Concerns over Loch Ness' falling water levels

10 June 2023



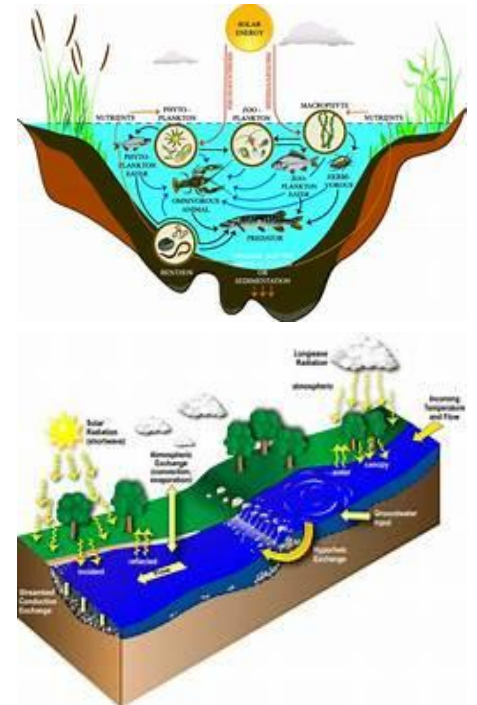
How nature works: river ecology

- Costly, lengthy and resource intensive process
- Transfers alien invasive species to recipient basins
- Mixes waters of varying salinities
- Disrupts fish spawning and migration patterns
- Significant impact on water quality and chemistry

(Water Transfers: What they are and why they need to be better managed
International Institute for Sustainable Development)

“Every species is a masterpiece, exquisitely adapted to the particular environment in which it has survived. Who are we to destroy or even diminish biodiversity?”

(Edward O Wilson, Sociobiologist)



How nature works: evapotranspiration

- The combined natural process by which water is transferred from the land to the atmosphere by evaporation from: the soil; open water and ice surfaces and by transpiration from plants.

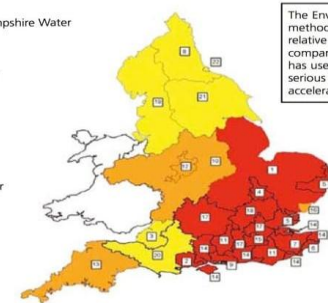
[Oxford Dictionaries](#)

- Plays an important part of the local water cycle and climate, and measurement of it plays a key role in water resource management.

[Water resources - Wikipedia](#)

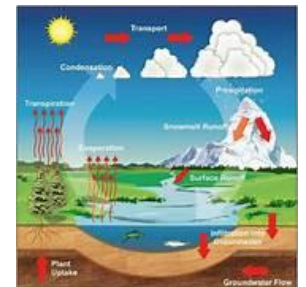
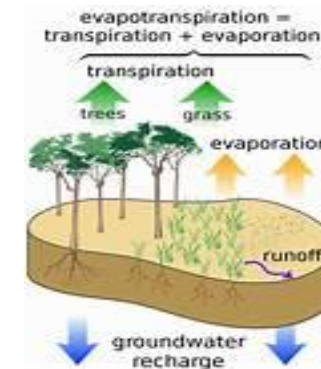
Figure 4: Areas of relative water stress

1. Anglian Water
2. Bournemouth and West Hampshire Water
3. Bristol Water
4. Cambridge Water
5. Essex and Suffolk Water
6. Folkestone and Dover Water
7. Mid Kent Water
8. Northumbrian Water
9. Portsmouth Water
10. Severn Trent Water
11. South East Water
12. South Staffordshire Water
13. South West Water
14. Southern Water
15. Sutton and East Surrey Water
16. Tendring Hundred Water
17. Thames Water
18. Three Valleys Water
19. United Utilities
20. Wessex Water
21. Yorkshire Water
22. Anglian Water (formerly Hartlepool Water)



The Environment Agency has developed a methodology for identifying and classifying relative levels of water stress in water company areas in England. The Government has used this map to designate areas of serious water stress for the purpose of accelerating water metering.

Source: Environment Agency, 2007



State of our water companies

“... the water sector has reached a very unhappy and unsustainable state of affairs.”

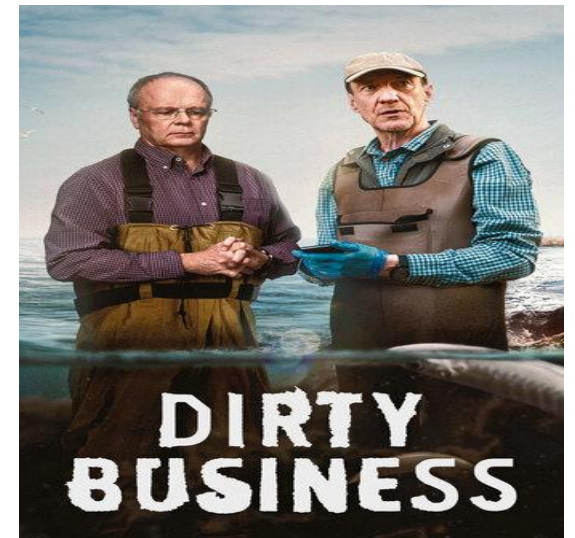
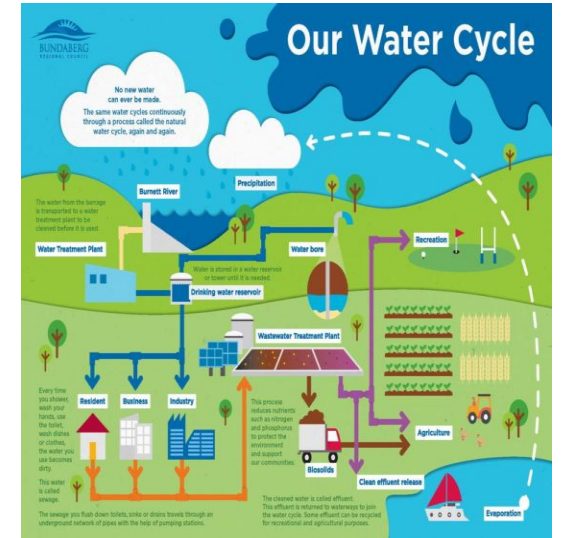
“... the wheels are beginning to fall off the original privatization mode, and ... it is no longer fit for purpose.”

“Rising costs of debt ... will most likely bring the whole edifice crumbling down, in the meantime, biodiversity and other natural capitals will continue their downward paths.”

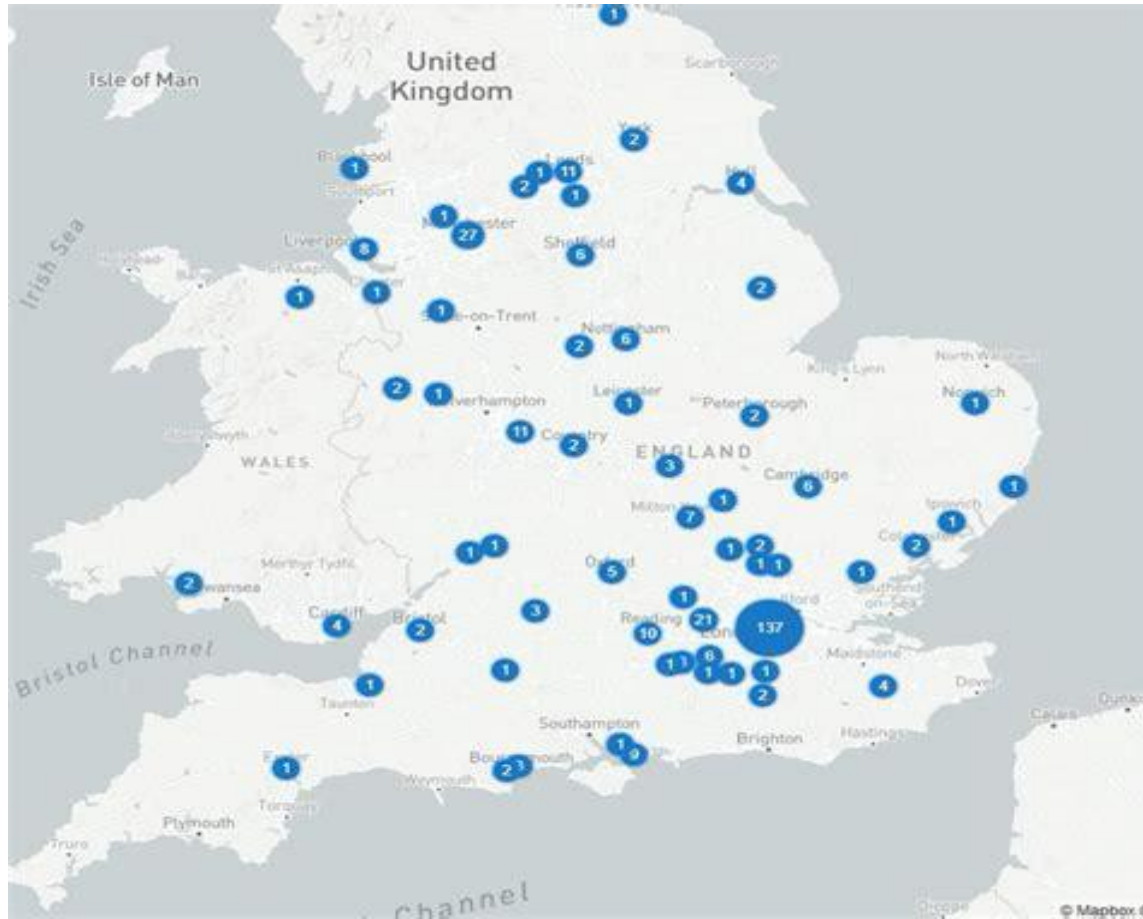


[Water – a new start - Dieter Helm](#)

Planning, policy and delivery process



Data centres



Living within nature's limits

We're looking down the wrong end of the telescope!

We're **A part** of nature, **not Apart** from nature (exemptionalism / economic subsidiarity)
(Edward O Wilson, *Tainter*)

"It's not what we do to nature that's the problem, **it's what nature can do to us**"
(Lovelock)

We need to:

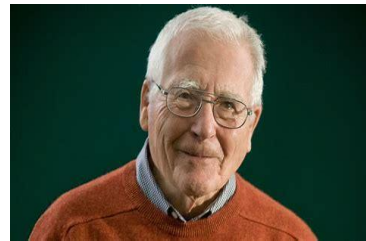
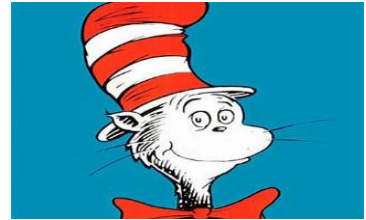
Rethink our highly centralised 'drinking-water-for-everything approach'

adopt a nature positive, localised (catchment based) approach

(Helm)

"Delivering a **nature positive future** requires integrating the natural environment ... into our economic and financial decision-making"

[Dasgupta Review, 2021](#)



Taking a nature first approach

“The UK’s reliance on ‘virtual’ water, in imported food and other supplies, is exacerbating water shortages in other countries”

“The UK’s future development could be threatened if we do not address the escalating global water crisis with urgency”

“Two thirds of the UK’s water footprint is now effectively imported”

“Water is one of the most undervalued natural commodities”

[UK's 'virtual water' reliance leaves international footprint | Department of Engineering](#)

2025 was among driest years on record for world’s rivers, study finds

Analysis of global resources reveals depletion in world’s water savings bank to 42% below normal levels last year



“We are depleting that savings account. Global terrestrial water storage has shown a declining trend since 2014–16 – a persistent, decade-long signal.”
(*Celeste Saulo, secretary general, WMO*)

<https://www.theguardian.com/environment/2026/sep/17/2025-driest-years-worlds-rivers-study-finds>

Greater Cambridge Local Plan – how to respond

Proposed submission consultation key questions

Consultation must focus on whether the plan is...

- ‘sound’:

- Positively prepared – providing a strategy which, as a minimum, seeks to meet the area’s objectively assessed needs; and is informed by agreements with other authorities, so that unmet need from neighbouring areas is accommodated where it is practical to do so and is consistent with achieving sustainable development;
- Justified – an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence;
- Effective – deliverable over the plan period, and based on effective joint working on cross-boundary strategic matters that have been dealt with rather than deferred, as evidenced by the Statement of Common Ground; and
- Consistent with national policy – enabling the delivery of sustainable development in accordance with the policies in this Framework and other statements of national planning policy, where relevant.

- Legally compliant



Friends of the River Cam Declaration of River Rights

- To flow freely and not be over abstracted;
- To perform essential functions of flooding, moving sediment, recharging groundwater and sustaining biodiversity;
- To be free from pollution;
- To feed and be fed from sustainable aquifers;
- To sustain native biodiversity;
- To restoration;
- To maintain connections with other streams and rivers.

Selected extracts:

- **“The days when we could take our environment for granted are long gone. We must now seek out every opportunity we can to protect and enhance what we have left.”**
- **“Working to address existing water resource, water quality and flood management issues and through an integrated approach across the water agenda ensure future issues and risks are managed, including in the context of climate change, with a focus on nature-based interventions.”**
- **“Conserving and enhancing the natural environment** is at the heart of Government’s ambitions for the Arc.”
- **“... to ensure that the protection and enhancement of the environment is at the heart of decision-making and any actions are based on a clear and agreed evidence base.”**
- “Invest in projects that deliver natural capital and environmental benefits, such as carbon sequestration, pollinator habitats, soil improvement, flood alleviation and water resource resilience.”
- **“Understanding the Arc’s environmental capacity to accommodate different levels of growth and development in different locations and ensuring that planned growth and development remains well within environmental capacity limits.”**

Shared regional principles for
protecting, restoring and enhancing
the environment in the
Oxford-Cambridge Arc



https://mycouncil.oxfordshire.gov.uk/documents/s62859/CA_NO_V1522R08%20Appendix%201%20Arc%20Environment%20Principles.pdf



Nature's Arc – new principles to protect and restore nature, and set ambitious environmental standards, must be at the heart of any new housing developments

Monday 15 June 2020

A group of the UK's leading nature conservation charities have produced a set of principles called Nature's Arc for putting nature first if the Government is determined to press ahead with development in the Ox-Cam Growth Arc.

<https://www.bbowt.org.uk/news/natures-arc-new-principles-protect-and-restore-nature-and-set-ambitious-environmental>

Questions?

