Circulation

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The newsletter of the British Hydrological Society



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Cover photo: Llyn Celyn tipping gate spillway works (Dŵr Cymru)

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Membership enquiries: Moira Doherty, BHS Secretary, Institution of Civil Engineers, 1-7 Great George Street, London, SW1P 3AA. Tel. 0207 665 2234. Email: moira.doherty@ice.org.uk

Editor: Vicky Shackle: circulation@hydrology.org.uk

Web pages: http://www.hydrology.org.uk/

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In between issues of Circulation, you can keep up with the **British Hydrological Society** on social media:

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Bluesky @britishhydrosoc.bsky.social

President's perspective

Joe Pearce

As hot dry weather continues into August across much of Europe, and drought is announced across Wales and much of England, it is particularly appropriate to be able to reflect on severe droughts from the past. Our national meeting in London on 17 June, Drought Hydrology: 50 Years Since 1976 enabled and encouraged this reflection and discussed implications for current management.

BHS events sub-committee chair Geoff Darch worked with Stuart Allen and the Environment Agency Chief Scientist Group to put together an excellent programme covering experience, latest research and implications for future management. The event brought together a wide range of people involved in hydrology and gained involvement of researchers, regulators and managers.



I had the privilege of attending the first part of the Peter Wolf Symposium, with the theme Hydrology In Service to Society. The event was hosted by BHS trustee Ben Howard at Imperial College London on 29 -30 June. It felt special to me to be at Imperial College, where Peter Wolf pioneered postgraduate hydrology courses in Britain in the 1950s.

Low flow on the River Cuckmere at Cowbeech July 2026 (photo: Adrian Jackson)

I also welcomed the chance to again be in the lecture theatre which has been the venue for many South East section BHS meetings. It was wonderful to see and experience the expertise and professionalism of the diverse group of early career hydrologists who highlighted their work in excellent talks and poster presentations.

Development of hydrologists is seen as a key role for BHS, promoted in the plans and actions of our Education and Careers sub-committee. We see the pressures faced by Universities researching and teaching hydrology and one aspect we have sought to act on is attracting applicants for hydrology MSc courses. We work together with JBA Trust to fund MSc studentship awards providing support to selected applicants annually. For undergraduates we also have our annual competition offering prizes for the best student dissertation. These awards continue successfully, attracting a larger number of submissions this year. We plan to announce the winner at our AGM.

For those interested in professional recognition, although we cannot offer a chartership ourselves, we have explored pathways open to hydrologists with other organisations in our professional development month lead by Emma Cross, chair of our Education and Careers sub-committee in February. Webinar recordings are available on our BHS Youtube. We would be really glad to hear from early careers hydrologists keen to be involved in promoting interests of this group in the Society, supporting Amy Green's role on the committee representing early careers professionals.

We look forward to the Symposium in Leeds at the beginning of September, which provides an excellent opportunity for the hydrology community to come together, share knowledge, exchange ideas, and build new connections.

The programme reflects the breadth of interests across our field, with its diverse themes that promise to stimulate discussion and learning.

It is fantastic to see such strong interest in the symposium and the enthusiasm among hydrologists to collaborate, learn from one another, and develop new perspectives. We are grateful to the organisers, particularly Mark Trigg and the Water@Leeds team, as well as Kevin Tilford for coordinating BHS involvement and helping to make the event possible.

The Symposium includes the AGM where we'll announce changes as some Trustees reach the end of their term. We are hugely grateful to Duncan Faulkner who finishes four years in the presidential roles. Duncan has brought great commitment in implementing the Society's governance changes and his enthusiasm promoting the Society and our activities. We also owe thanks to Victoria Coates our outgoing Honorary Secretary, especially for her part in implementing our governance changes. Liv Burns has chaired the Communications sub-committee and made our new website happen. For the Education and Careers sub-committee, Chris White has overseen the annual dissertation competition and co-ordinated links with international bodies including UK IAHS.

We look forward to welcoming new Trustees to the Committee and thank all who have agreed to be nominated including those willing to serve a second term or take up new roles. We'll give details and introduce new trustees at the AGM in Leeds on 3 September. If you can't be there in person, the meeting is also on line. Please look out for joining details which will be on the website and circulated on the mailbase. The meeting is essential to the governance of the Society and for trustees to be accountable to members so please join if you can.

Llyn Celyn site visit—uncertainty in extreme flood hydrology

Dr Jo Cullen, Strategic Planning Manager, Dŵr Cymru (Welsh Water)

On 29 June 2026, the BHS South West and Wales Area Branch met with members of the British Dam Society at Llyn Celyn in North Wales. Twenty-seven people attended including reservoir undertakers, regulators, consultants, panel engineers and academics. The day combined a visit to the recently completed Celyn Dam Safety Scheme (front cover image) with a discussion on uncertainty in extreme flood estimation and the implications for reservoir safety.

The meeting opened with presentations from Natural Resources Wales (NRW) and Welsh Water. **Rob Bissell** explained how NRW manage releases from Llyn Celyn as part of the wider Dee Regulation Scheme which provides water to over 2.5 million people in England and Wales. **Steve Shakespeare** then described the dam safety works undertaken by Welsh Water following the latest Section 10 inspection under the Reservoirs Act 1975, including construction of a new auxiliary spillway and enhanced drawdown valves. Attendees later visited the site to view the completed works and hear more about the challenges of delivering such a complex scheme whilst managing the releases for water resources, flood risk management and the environment.

The discussion session focused on the considerable uncertainty associated with estimating the extreme floods used for reservoir safety e.g. the 10,000-year event and the Probable Maximum Flood (PMF). It was acknowledged that the uncertainty increases significantly when extrapolating so

far beyond the observed datasets and that understanding and communicating uncertainty remains a major challenge.

One of the main themes was balancing a precautionary approach to public safety with making better use of modern hydrological science. While nobody questions prioritising safety, automatically adopting the most conservative estimates can sometimes discourage the use of newer datasets and methods. Several attendees suggested there may be scope for greater confidence in modern approaches where these are supported by robust evidence.

Climate change featured strongly throughout the discussion. While changes in runoff volumes remain a key concern for reservoir safety, attendees also raised other factors that may become increasingly important, including stronger winds and wave action, changing antecedent catchment conditions, prolonged droughts and more intense localised rainfall events. There was strong support for further research and clearer guidance on how climate change should be incorporated into reservoir safety assessments, especially as uplifts are only currently available for peak flow and rainfall.



Members of the British Hydrological Society and British Dam Society at the joint meeting held at Llyn Celyn.

The importance of reliable hydrology was also discussed in the context of the costs associated with reservoir safety improvements. Safety schemes can require significant investment, and major interventions may prove to be prohibitively expensive for smaller undertakers, resulting in reservoirs being decommissioned with the associated loss of recreational, environmental and community benefits. Larger undertakers similarly emphasised the need to have confidence in the hydrology so they can be sure major investments are targeted to address their most significant risks. At the same time, attendees generally agreed that schemes should remain robust to future climate change and future updates to guidance.

Participants discussed several opportunities for improving current methods. It was recognised that uncertainty arises from many sources, including data limitations, statistical analysis, model structure, parameter selection and climate change projections. While it may not be possible to eliminate all uncertainty, improvements can still be made. The Environment Agency's Phase 1 report on Improving PMP and PMF Estimation for UK Reservoir Safety (Project SC030240)[1] outlined key improvements needed but these now need to be prioritised e.g. replacing the legacy Flood Studies Report (FSR) rainfall maps from 1975 with contemporary datasets and using gridded temperature information instead of sparse climate stations when estimating snowmelt contributions. Participants also highlighted the value of ongoing extreme rainfall research and noted that lessons could be learned from severe flood events overseas, particularly those associated with atmospheric rivers and intense cloudburst storms.

Questions were raised around where greater confidence might be placed in newer approaches such as ReFH2 and how these compare with existing outdated methodologies in different catchment types.

As Panel Engineers are ultimately responsible for signing off the adequacy of the spillway, they would welcome additional guidance on the strengths and limitations of different hydrological datasets and methods. It was also noted that Floods and Reservoir Safety (4th Edition) is now over a decade old and would benefit from a comprehensive review.

The meeting was a great opportunity to bring together researchers, regulators, practitioners and asset owners to discuss a topic relevant to both the BHS and BDS. While there were no definitive conclusions, there was clear agreement on the need for continued research, updated guidance and greater transparency in how uncertainty is considered within reservoir safety decision-making. It's also great timing to continue these conversations with the Flood Hydrology Roadmap and Reservoir Safety Reform Programme in full swing.

Jo Cullen will be attending a Flood Hydrology Workshop at the BDS Biennial conference in September so please get in touch if you have any comments or bright ideas!

joanne.cullen@dwrcymru.com

[1] https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/improving-probable-maximum-precipitation-pmp-and-probable-maximum-flood-pmf-estimation-for-reservoir-safety

BHS South-East and East Regional Group Events

Clare Waller, Environment Agency National Flood Hydrology

The BHS South-East and East Regional Group covers a wide area from East Anglia southwards, including London and Oxford. Our purpose is to organise online and in person meetings and events that support the BHS mission: to share the latest ideas in hydrology, encourage discussion, and build collaboration across the community.

All events are free and open to BHS members, wherever they live. You do not need to reside in the region to take part.

We are keen to expand the committee to better represent the breadth of the hydrology sector and to gather ideas for future meetings and potential site visits. If you would like to get involved, please contact us at bhs_southeast@outlook.com.

Development planning and groundwater flood risk

On 27th March we hosted an online webinar jointly with the CIWEM South Eastern branch, exploring the challenges of understanding and managing groundwater flood risk within the planning system.

Stephen Buss (Stephen Buss Environmental Consulting Ltd and Terra-IQ Ltd) introduced the characteristics of groundwater flooding, focusing on the chalk aquifers that dominate much of south-east England. He explained the mechanisms that drive groundwater flooding following prolonged periods of winter recharge, highlighted the differences between bedrock and superficial deposit flooding, and discussed lessons from significant events such as the 2014 groundwater floods. Stephen also reviewed the strengths and limitations of current groundwater flood mapping,

emphasising the need for local knowledge and site-specific assessment when interpreting national-scale datasets.

Fola Ogunyoye (TJAY Consultancy Ltd) then examined how groundwater flood risk is considered within the development planning process. Drawing on work undertaken through Project Groundwater, he outlined the challenges posed by limited data, gaps in policy and the absence of statutory consultee responsibilities for groundwater flooding in planning. Fola discussed emerging guidance aimed at improving groundwater risk assessment, promoting a risk-based approach that prioritises avoidance, adaptation and resilience, while raising awareness of groundwater as an often-overlooked source of flood risk.

The webinar highlighted both the complexity of groundwater flooding and the need for greater integration between hydrology, hydrogeology and planning practice. Many thanks to Stephen and Fola for their informative and thought-provoking presentations, and to everyone who attended and contributed questions and discussion. The webinar is now available on the CIWEM YouTube channel.

The Drainage of the Fens: Lowland Water Level Management

Our latest webinar on 19th May explored the history and future of water management in the Fens, one of the most heavily modified and managed landscapes in the UK. Covering around 1,500 square miles of eastern England, much of the region depends on a complex network of drains, embankments and pumping stations to manage water levels and flood risk.

Seán Faulkner (Stantec) opened the webinar with a history of Fenland drainage, describing how centuries of engineering transformed extensive wetlands into highly productive agricultural land.

He outlined the development of drainage systems from the seventeenth century onwards and the crucial role they have played in supporting communities and farming

Max Davison (Stantec) then examined the modern drainage network and the challenges of managing water across a low-lying landscape. He highlighted the continuing importance of pumping stations and other infrastructure, as well as the increasing pressures posed by climate change and rising flood risk.

Yvonne Riley (Stantec) concluded by discussing the environmental consequences of drainage, particularly peat loss and land subsidence. She explained how ongoing peat degradation contributes to carbon emissions and increases reliance on engineered water management, before outlining potential approaches to support more sustainable land and water management in the future.

Many thanks to Seán, Max and Yvonne for their engaging presentations. Their contributions were greatly appreciated by the regional group and all those who attended. The webinar is now available to watch on the BHS YouTube channel.

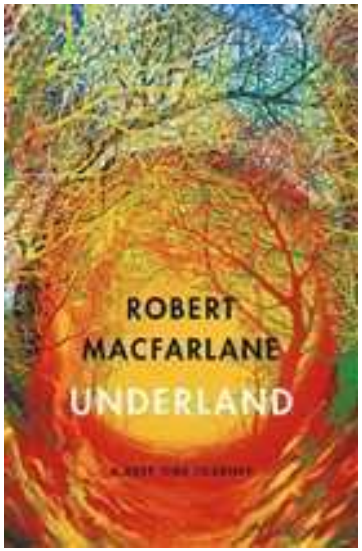
Look out in November's issue (170) for the winners of the BHS Student Dissertation prizes. These will also be announced at our symposium in early September.



More books hydrologists might enjoy

Duncan Faulkner and Vicky Shackle

Following on from the selection in Circulation 167, here are some more books on damp and rivery themes to enjoy over the (very dry) summer.



Underland by Robert Macfarlane (2019)

I am a hydrogeologist, at least as far as my house insurer thinks, since it doesn't include hydrologist in its list of occupations. I'm comfortable with this, since we can't hope to understand water on the surface without some knowledge of the pathways it follows beneath. Underland starts with a caving trip in the Mendips, and two later chapters describe an exploration of the karst rivers on the border of Italy and Slovenia. But this book is far more than a travelogue: it is an exploration of the human experience of the earth as much as the physical underworld, supported by a copious bibliography.

Robert Macfarlane, a protégé of Roger Deakin, has been described as "the great nature writer of this generation". When reading his books I find I have to stop every few pages and re-read, noting down yet another phrase that captures some important idea in beautiful, luminous prose. Writing of the Anthropocene, Macfarlane encourages us to think forwards into deep time and ask whether we are being good ancestors.

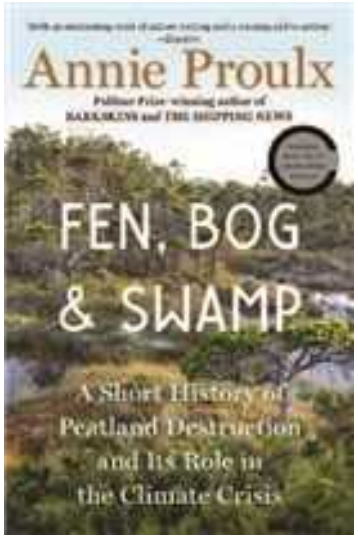
The Alternatives, by Caoilinn Hughes (2024)



With that question in mind, here's a warm and hugely enjoyable celebration of sisterhood set in contemporary Ireland. All four sisters are high achievers; one a geology lecturer who becomes overwhelmed with anxiety about the earth's future. After she vanishes, can the others track her down? And do they really know her? How can we know people when, unlike rocks, we "*can't dig a borewell into them. Find their groundwater*"?

Fen, Bog & Swamp, by Annie Proulx (2023)

A book dedicated to the people of Ecuador, who made their country the first to include legal rights for natural ecosystems in its constitution. This is a very readable introduction to how destroying wetlands increases atmospheric carbon dioxide, bridging the gap between the specialised vocabulary of most climate science and the kind of language most people use day to day. In this respect, an important contribution to the public understanding of hydrology.



Covering 16th century English fens, Hudson Bay lowlands, the Russian Vasyugan Mire and the Okefenokee National Wildlife Refuge, Proulx explains the vital role of wetlands in carbon storage, and why preserving and restoring them is vital. A wide-ranging blend of history, culture and science.

Scottish Hydrological Group meeting report

David Faichney and Claire Robertson

On June 10th the Scottish Hydrological Group (SHG) held an event at The Stirling Smith Art Gallery and Museum on the ongoing review and enhancement of the Peak Flow Dataset in Scotland. This marked the second event in the renewed SHG programme. The evening talk was hosted by Claire Robertson (Scottish Water) who welcomed the speaker, **Grant Kennedy**, Senior Hydrologist at SEPA.

Grant introduced the Peak Flow Dataset (PFD), a key SEPA product available to customers. The PFD represents a curated subset of sites from the National River Flow Archive (NRFA), providing high-quality peak flow data used across the UK. Of the 926 PFD sites nationwide, 178 are in Scotland, with data improvements over the past 11 years resulting in a net increase of 23 Scottish sites. Individual sites are important in their own right, but their cumulative value as a national network is even greater.

The PFD underpins critical flood risk management decisions, infrastructure planning, and development assessments across the UK. Grant referenced PFD data supports flood protection works, and for example in one year represented £1 billion of investment.

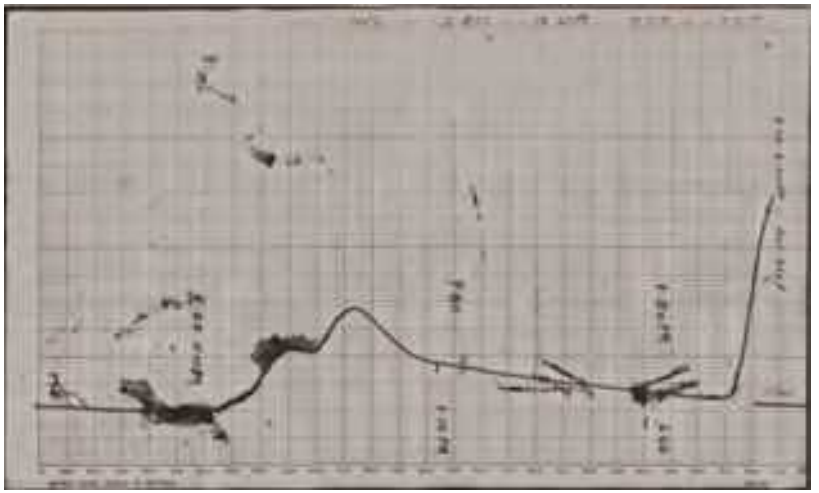
To ensure the best possible calibration across each site's full record, the PFD is currently undergoing a comprehensive review. As new methods, technologies, and data become available, sites are reassessed and recalibrated. This multi-year programme is already well advanced.

Grant explained that as data quality improves and our understanding of flood flows advance, it becomes possible to reassess older measurements and identify discrepancies in historic records.

This is especially relevant where earlier methods had inherent limitations – such as the velocity-area method using meters suspended from cableways. Modern technologies, including acoustic Doppler instruments and remote-controlled survey boats, now allow for more accurate flood measurements, including flows across floodplains that cableway methods could not capture. These advances enable the adaptation of stage-discharge ratings and hindcasting to improve historic data.

Before 1990, much hydrometric data exists only in analogue form. Digitisation has progressed but remains a substantial task: 625 station years have been digitised so far, with 2,862 station years still to process. Many of the records were scanned from the original paper records to microfilm, bringing challenges in the process with varying scan qualities. The digitisation work is essential for unlocking the full value of long-term records. As more data is added, and as recalibrations improve the accuracy of historic records, the dataset becomes increasingly powerful.

Figure 1: Example of a poor-quality scan from Microfilm, December 1982



The case studies of the presentation illustrated the depth of expertise required to interpret hydrometric data correctly. Understanding site history, channel changes, instrumentation, local hydrology, and even the lived experience of people in the catchment is crucial when deciding whether and how to apply improvements. Grant highlighted that metadata is just as important as the outputs themselves.

Future work includes completing the legacy review, bringing long-term sites up to the required standard, and incorporating those that meet the criteria into the PFD. The team will continue expanding and improving datasets and calibrations, strengthening understanding of customer needs through feedback on how the data is used and could be used, and identifying priority sites for further upgrades. The current plan includes targeting around twenty stations for upgrade over the next four years.

The session provided a clear picture of a complex, high-value national project that is already delivering significant benefits. Grant emphasised the enormous effort required to install, maintain, gauge, calibrate, analyse, and continually review these stations. The hydrometry teams across Scotland deserve significant credit for sustaining such a technically demanding network.

Claire closed the session by thanking Grant and everyone who attended.

Please note that BHS committee (and regional group) email addresses are changing—more details in the November issue

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BHS Peter Wolf Early Career Hydrologists Symposium

Amy Green and Ben Howard

This year's Peter Wolf Symposium (Hydrology in Service of Society) took place on 29th and 30th June 2026 at Imperial College London, hosted by the Department of Civil and Environmental Engineering, and brought together 43 early career hydrologists from academia, consultancy, charities and the public sector for presentations, workshops and networking. The programme explored how hydrological research can better address societal challenges through both technical sessions and interactive discussions.

BHS President **Joe Pearce** opened the symposium, reflecting on how his own involvement with the Society began at a previous Peter Wolf Symposium held at Imperial College London. Sharing a photograph of himself in the same lecture theatre, he encouraged attendees to make the most of the opportunities offered by BHS and reminded them that today's early career researchers are the future of the hydrology community. A keynote lecture by **Professor Christophe Cudennec** (Imperial College London and L'Institut Agro) highlighted the IAHS Science for Solutions decade and the Hydrology Engaging Local People IN one Global world



Participants power-walking in the park

(HELPING) initiative, demonstrating how hydrological science can address global sustainability challenges while remaining grounded in local community needs.

A short course on co-production in hydrology, led by **Ben Howard**, introduced deeply collaborative approaches to developing research with knowledge partners in ways that address systematic inequalities and power asymmetries. This was followed by a stakeholder engagement workshop led by **Annie Ockleford**, where real-world case studies highlighted the value of early, meaningful collaboration with communities, practitioners and decision-makers.

The symposium concluded with an engaging "Power Walk" activity, facilitated by **Luke Tumelty**, in which participants adopted the roles of catchment stakeholders to explore the power dynamics that shape co-design and environmental decision-making.



Participants also enjoyed a thought-provoking session from artist **Raman Uppal**, who shared his journey from mechanical engineering to art and demonstrated how creative practice can offer fresh perspectives on science. Showcasing Common Ground (left) —an artwork inspired by community-based hydrology research in Ecuador and presented at the Great Exhibition Road Festival—he illustrated how art can communicate environmental challenges in accessible ways while strengthening connections between researchers and communities.

Drought hydrology: 50 years since 1976

Geoff Darch

1976 and all that. Rather like that other anniversary we were reminded of this year, England's 1966 football world cup win, the 1976 drought is often seen as the defining drought, the record-breaker, the one older hydrologists knowingly refer to as a formative experience. As such it was appropriate that the British Hydrological Society should mark 50 years since this landmark drought, but also reflect on droughts since 1976, and what is to come in our changing climate.

More than 100 delegates in a full capacity lecture theatre at the ICE in London were welcomed by Dr Robert Bradburne (Chief Scientist, Environment Agency). He introduced keynote speaker **Philip Duffy** (CEO, Environment Agency) who reflected how 1976 had shaped perceptions (even for those like Philip who weren't yet born). Philip mapped out the water management response, the 1973 Water Act having introduced ten regional water authorities, and discussed changing expectations and the need to be more resilient.

The first session focussed on the 1976 drought itself, the first half by **Glenn Watts** (UKCEH) who described impacts on river flows and water resource systems, and the introduction of rota cuts (the last time this occurred). The second half by **Anna Murgatroyd** (Newcastle University) noted that 1976 would have minimal impact with today's water supply system, but that alternatives (as revealed by stochastically generated weather sequences) could cause worse situations.

The second session explored water resources management, starting with an overview from Helen Wakeham (Environment Agency) who discussed the (false) perception of England being a wet country and described the twin-track approach of new supplies and demand management.

Dr Geoff Darch (Anglian Water) discussed the meteorological drivers of drought and how climate change is and will alter the nature and impact of drought (including on water quality); he advocated for the use of physical storylines to explore the future. **Jamie Hannaford** (UKCEH) described the monitoring and early warning of drought including the future direction for observations, drought forecasting and climate change impacts, before outlining new UKCEH research programmes.

Before lunch, delegates were treated to a live conversation between **Dr Robert Bradburne** and **Professor Dame Angela McLean** (Government Chief Scientific Adviser) which covered topics including the drought role of Defra (lead) and GO-Science (involved if Cobra called), the role of CSAs (noting that John Ashworth, CSA in 1976, first introduced climate change to PM Margaret Thatcher), trust (and the difference between trustworthy and trusted, the former being more important than the latter), and the need to incorporate social science into adaptation and disaster preparedness.



Cover of the 2011 report on 1976's drought by John Rodda and Terry Marsh

The third session considered whether drought is a socio-environmental problem. **Professor David Hannah** (University of Birmingham) discussed the impact of drought and 'riverine heatwaves' on freshwater ecosystems, demonstrating an urgent need for a process-informed framework to strengthen prediction, attribution and management of extremes. **Professor Rachel Stubbington** (Nottingham Trent University) examined ecological drought and noted that ecological recovery can be long, and for example has led to shifts in aquatic invertebrate communities; the characteristics of drought, along with human interactions, are important. **Andy Ball** (HR Wallingford on behalf of UK Water Industry Research) introduced the role of Temporary Use Bans (TUBs) and summarised research on recent deployment, concluding that they can be effective but that this varies depending on socio-demographic factors and that a single percentage saving is too simplistic. **Dr Kevin Collins** (Open University) gave a talk entitled *1976 and All This: changing social attitudes and expectations to drought in England and Wales*, which explored changes in trust and legitimacy of water resources management stakeholders, the role of the media, and how current issues could be addressed, perhaps by re-imagining the role of the public as water managers, co-governors of the water system.

The fourth and final session began with reflections of a career in water resources from **Jean Spencer**, former water company executive director and outgoing independent chair of the National Framework for Water Resources. Jean provided a fascinating and personal journey covering the 1995 'Tanker drought' which saw 600 tankers per day moving water from Kielder Water to Scammonden Water in Yorkshire, the perceived failure of needing to introduce TUBs in 2012, the introduction of multi-sector approaches (including establishing Water Resources East) and the focus on resilience

including the work of Water UK and the National Framework. Jean noted that delivery is now key, including government action on water labelling, with a need for a coherent national narrative on the value of water.

The 1976 drought wasn't just an issue for Britain – it extended across NW Europe. We invited a French hydrologist to speak, but by coincidence, the French were hosting an event on the 1976 drought in Paris on the very same day! However, thanks to **Stuart Allen** and **Jamie Hannaford** (and **Giovanni Bernadi** (UKCEH) for editing), delegates were able to watch a brilliant pre-recorded interview with **Yves Tramblay** (IRD France), **Karin van der Viel** (KNMI, Netherlands) and **Kerstin Stahl** (U. Freiburg, Germany).

The event was held on 17 June, with the driest spring on record for parts of the country giving way to some welcome rain. However, some areas have seen no rain since mid-June, temperature records from 1976 have been broken, and at the time of writing an official drought has been declared in England, whilst wildfires rage in France and Spain. It looks very much like 2026 will become as etched in time as 1976, albeit as part of an emerging trend, rather than a rare event. How we now adapt to the changed and changing climate will perhaps be even more memorable.

Thanks to the organising committee, chaired by **Stuart Allen** (EA) who brought the day together, and to **Moira Doherty**, **Jayne de Ville** and colleagues at the ICE for all their help before, during and after the event.

The summary above is very brief, so it is recommended to review the slides and posters at https://www.ice.org.uk/events/previous-events/drought-hydrology-50-years-since-1976-bhs-jun-2026 or https://hydrology.org.uk/event/drought-hydrology-50-years-since-1976/

Circulation

UNESCO's Intergovernmental Hydrological Programme: Advancing Water Science for a Resilient Future

Joanna Savage & Harry Dixon, UK National Committee for the IHP of UNESCO (both UKCEH)

"*The true measure of progress lies in our capacity to ensure that science reaches all peoples.*" With these words, **Cristiane Collet Battiston**, the first woman to chair the Council of UNESCO's Intergovernmental Hydrological Programme (IHP), opened the 27th Session of the IHP Council in Paris on 1st June 2026. Her remarks set the tone for the five-day meeting, as water experts and government representatives from around the world gathered to consider how hydrological science can help societies respond to increasingly complex water challenges.

Established in 1975, UNESCO's Intergovernmental Hydrological Programme is the United Nations' flagship programme for water science, water resources management, education and capacity development. With 194 Member States, it provides a vital platform through which scientists, governments, and communities collaborate to advance hydrological knowledge and address shared water challenges.

The Council - comprised of representatives from 36 Member States - is the IHP's highest decision-making body. It assembles every two years to review the Programme's progress and shape its future direction. This year's session took place midway through the IHP's ninth phase: IHP-IX: Science for a Water Secure World in a Changing Environment (2022-2029), attracting more than 300 participants, including

observers from nations not currently on the Council, representatives of UN organisations, scientific associations, NGOs and UNESCO's Water Family. The UK was represented by members of the UK National Committee for IHP, coordinated by UKCEH, contributing expertise and participating actively in discussions as observers.

Central to the meeting were updates and discussions on the wide range of activities supporting IHP-IX. Alongside established areas of hydrological research, increased attention was given to ecohydrology, cryosphere science, urban water management and the role of citizen science in addressing knowledge gaps. Together, these activities reflect the evolving priorities of the Programme and the growing need for integrated approaches to water management. These, along with many other IHP initiatives, are open for UK hydrologists to contribute to and benefit from.

Working through the 14 agenda items, many containing multiple reports, proposals and decisions, it quickly became clear that the challenge facing IHP is not a lack of ambition or ideas, but how best to prioritise them and support them long-term. Deliberations often ran late into the evening, as delegates discussed the future of the Programme, and how it could remain effective, relevant, and impactful in an increasingly complex world.



Right: the UK's delegation to IHP Council, 2026

A major outcome of these discussions was the launch of the Megacities Alliance for Water and Climate Change (MAWAC), a new international platform supporting collaboration between the world's largest cities to address urban water challenges and enhance climate resilience.

Particularly encouraging was the strong support for youth engagement, with the approval of the Youth4Water initiative ensuring young professionals play an active role in shaping the future of the water sector.

While not currently serving on the Council, the UK (represented by UKCEH) remains actively engaged through its leadership of the IHP Finance Committee, contributions to the Mid-Term Evaluation of IHP-IX, long-standing involvement in Flagship Initiatives, its UNESCO-designated ecohydrology demonstration sites, and participation through its UNESCO Chair in Water Sciences, Category 2 Centre and UK National Committee. Together, these roles ensure that UK expertise continues to help shape the Programme's scientific direction and long-term development, while supporting wider international efforts to address water-related challenges.

Looking ahead, the outcomes from this session will help shape preparations for the next UN Water Conference in December 2026, the post-2030 Agenda, and the development of IHP's next phase, IHP-X (2030-2037). One message emerged clearly from the week: while technologies, priorities, and challenges may evolve, the need for international cooperation on water remains essential. Through its globally coordinated networks, partnerships, and initiatives, the IHP continues to provide an important framework for knowledge generation and exchange, capacity development, and collaboration. Sustained engagement will be critical to delivering sustainable and inclusive water solutions for all.

Forthcoming events

16th National Hydrology Symposium: Re-imagining hydrology for a changing world. To be held at University of Leeds, **2-4th September**. Registration closed on 22nd May.

British Dam Society, 23rd biennial conference. To be held at Keele University, **9-12th September**. More details to follow.

CIWEM West Midlands and East Midlands branches are hosting their annual **Dr Jenkins best technical paper competition** on **23rd September 2026**. This is an in-person event at Arcadis Consulting offices, Birmingham, 5-8pm. All are welcome, and booking is at https://www.ciwem.org/events/dr-jenkins-competition-2026-west-midlands-and-east-midlands-birmingham-in-person

British Dam Society: technical site visit to Slaithwaite Reservoir, with Canal & Rivers Trust. **16th September 2026**, Slaithwaite, Huddersfield. To register, please email Kamila.Etienne@canalrivertrust.org.uk

CIWEM Early Career Professionals Conference, 22nd September 2026. An in-person event held at WSP offices, London, 9am to 7pm. Build confidence, sharpen presenting skills, and connect with like-minded peers across industries. Book at https://www.ciwemevents.com/event/ecp/summary?RefId=Ciwemwebsite

Circulation

CIWEM **Property Flood Resilience industry training** and specialist register for professionals. A two-day residential training course on **12-13th October 2026**—you will need to have already completed the relevant e-learning and the Foundation training. More details at https://www.ciwem.org/training/pfr-industry-training

Cumbrian Lakes Research Forum will hold a hybrid event (in-person at UKCEH Lancaster (now fully booked) and online via Teams), on **3rd November 2026**. Promises interest to anyone with an interest in the research and management of lakes and their catchments. Details at https://www.ceh.ac.uk/cumbrian-lakes-research-forum-2026

Royal Meterological Society: Energy and insurance future climate resilience event. In-person, all-day workshop, **10th November 2026** at ARUP offices, London. Register at https://www.rmets.org/event/energy-and-insurance-future-climate-resilience-event

National Environment Monitoring Conference will be held on **14 December 2026** at the International Conference Centre, Birmingham. The theme is "Building Momentum—Strengthening the UK's Environmental Monitoring Community. Submissions for presentations and posters can be made until **13th November 2026,** on one of the four themes. More details at https://www.ceh.ac.uk/nemc2026

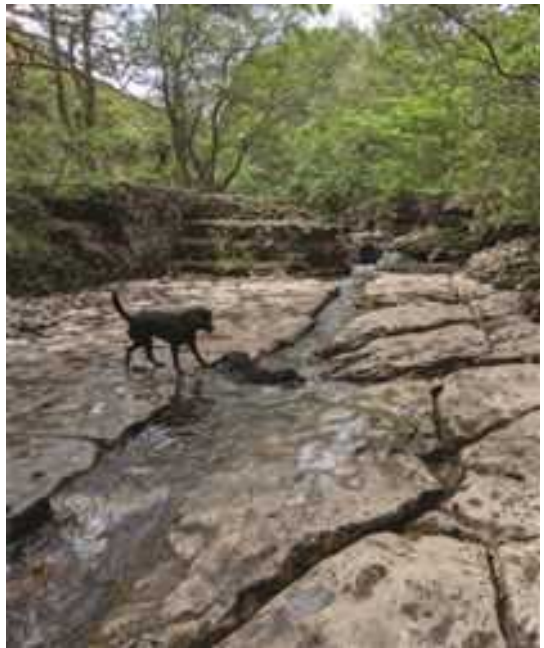
UK Hydrological Bulletin, May-July 2026

Compiled from UKCEH summaries

May was showery and changeable through its first three weeks but was ultimately defined by an exceptional period of heat in the last 10 days. It was the joint seventh warmest May in the Central England Temperature series (from 1659) and a new May and spring temperature record was set at Kew Gardens on the 26th (35.1°C).

The first three weeks of May saw alternating fronts, ridges and showery troughs bringing predominantly sunny spells and showers, with occasional thunder and hail, though there were few notable rainfall totals. Total May rainfall for the UK was 78% of average, with both England and Scotland recording below average rainfall (74% and 78%, respectively).

Soil Moisture Deficits (SMDs) climbed across almost all regions, and soils were the fourth driest May on record for England & Wales (in a series from 1961). Correspondingly, river flows were in the normal range to exceptionally low across most of the UK. Groundwater levels generally continued to decline with levels in the normal range to below.



Limestone bedding, exposed by low flows, in Bollihope Burn, North Pennines (V.Shackle)

Circulation

Reservoir stocks for England & Wales remained near-average, though stocks in some impoundments and groups dropped almost 10% relative to average, including Loch Katrine, Northern Command Zone and Wimbleball. May concluded another notably dry spring across large parts of England and Wales, demonstrating once again the pivotal role that the season can have for water resource prospects – although deficits were far less acute or widespread than in 2025, and current reservoir stocks and groundwater levels contribute to a healthier water resource position.

A wet start to June ameliorated immediate drought concerns at the start of the summer, but June was in the end a month of two halves. It began with unsettled and relatively cool conditions, with a westerly Atlantic flow bringing frequent low pressure systems, weather fronts, and spells of rain; 123mm was recorded at Honister Pass (Cumbria) on the 3rd. Many areas received substantial rainfall during the first half of June, with Northern Ireland, south-east and south-west England accumulating their full June average rainfall by the 16th.

Temperatures rose in the middle of June as a heatwave developed across continental Europe. Rare red warnings for extreme heat were issued on three consecutive days, and a new provisional UK June temperature record of 37.7°C was set on the 26th at Lingwood (Norfolk).

June rainfall was above average across the UK overall (117% of average), although there were marked regional contrasts. Totals exceeded 170% of average across parts of Northern Ireland, north-west Britain and isolated areas of south-east England, the latter reflecting localised thunderstorm activity. In contrast, rainfall was below average across eastern Britain, with parts of eastern England, eastern Scotland and north Wales receiving less than 50% of average rainfall.

River flows were above normal in north-west UK and south Wales but elsewhere were generally normal or below, with notably low flows in eastern Scotland and East Anglia. Reservoir stocks for England & Wales remained close to average overall, although some impoundments registered more than 10% below average, including Wimbleball, Clatworthy and East Lothian (16%, 13% and 12% below average, respectively).

Groundwater levels continued their seasonal recession during June and were predominantly in the normal range or below across major aquifers by month-end. By late June, parts of the EA's Anglian Area had moved into Prolonged Dry Weather status, while the Scottish Tyne was classified as experiencing Moderate Scarcity by SEPA and much of eastern Scotland was under Alert or Early Warning conditions. While the water resources position at month-end remained broadly favourable at the national scale, the sustained hot, dry weather in late June (and early July) increased water demand and accelerated declines in river flows and soil moisture across much of the country.

As in May, heavy precipitation and unsettled weather in early June allowed many sites to recover soil moisture. However, another record-breaking heatwave towards the end of the month



Soil moisture, 30th June 2026 (COSMOS-UK data)

resulted in sites reverting to end-of-May soil moisture levels, or becoming drier.

At the start of July, unseasonably wet conditions would have been needed to prevent further declines and increased pressure on water resources through the rest of summer. As it turned out, for much of the country, July was unprecedented in terms of aridity. It was the driest July and the fifth driest of any month in the England & Wales rainfall series extending from 1766. It was also the second hottest July on record for England and the hottest (in records from 1884) in the Thames, Southern and Wessex regions, with two major heatwaves affecting southern England during which maximum temperatures exceeded 35°C.

Exceptionally dry soils led to agricultural impacts (with reports of early harvests and substantially diminished yields) and widespread wildfires, some designated major incidents (e.g. a persistent moorland fire in the Cairngorms). Widespread notably or exceptionally low river flows led to pervasive abstraction restrictions, impacts on the canal network and extensive reports of ecological stress. Reservoir stocks fell steeply compared to the end of June and at the end of July were 7% below average for England & Wales, but significantly lower in some impoundments.

July was dominated by persistent anticyclonic conditions, with a significantly weakened jet stream displaced to the north of the UK. While there were some frontal incursions, mainly in the first and last week, these brought very modest rainfall, largely confined to upland areas of the north and west. Across most of England and Wales, the exceptionally hot and dry weather established in late June persisted through July, and eastern Scotland also saw continued notably dry weather. Large areas of southern England received little or no rainfall through the month.

Temporary use bans affecting 20 million people were in place by mid-month, and in the closing week drought status was declared across Wales and half of England, while much of eastern Scotland was classified as 'moderate scarcity' with some catchments in the highest 'significant scarcity' designation.

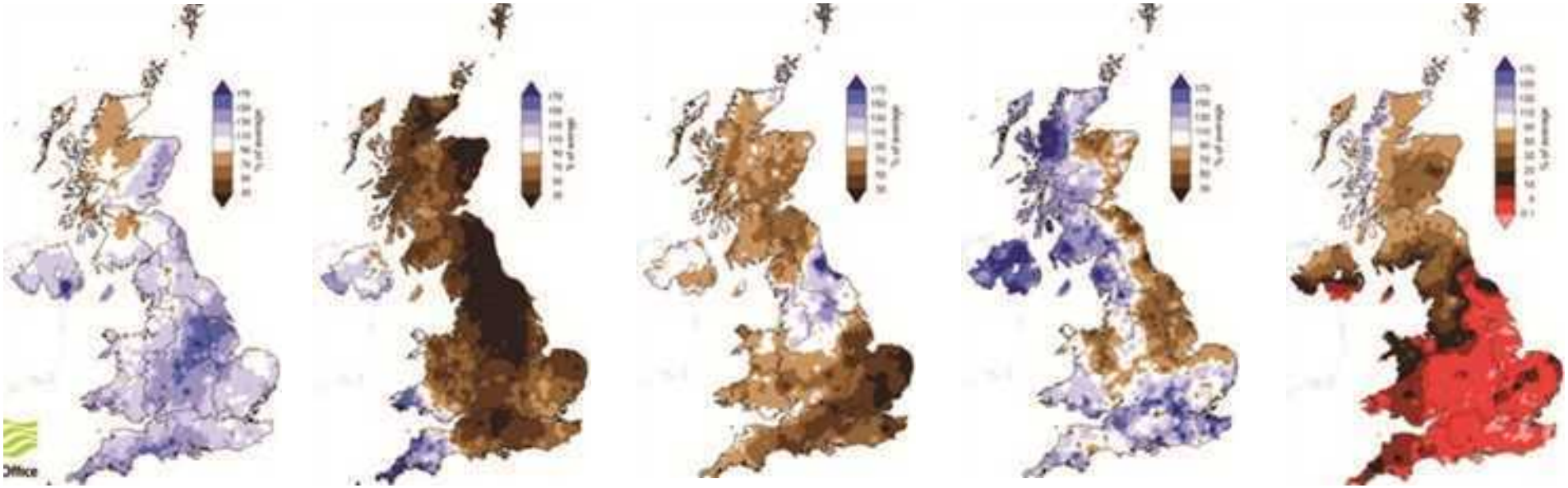
For the third year in the last five, drought impacts have escalated remarkably quickly in the face of exceptional spring -summer aridity.

Water resources were healthy in early spring, but the situation deteriorated rapidly under intense 'flash drought' episodes, where high temperatures accelerate evaporation, compounding the sustained rainfall deficits.

Nevertheless, the wet winter has moderated the public water supply position somewhat (compared to last year and other major droughts like 1976) as declines in groundwater levels and reservoir stocks began from an elevated baseline. Further deterioration is likely as August begins, with more hot weather and no sign of rainfall in the most affected areas. The latest Hydrological Outlook indicates widespread below normal to exceptionally low flows are likely to persist well into autumn.

The Hydrological Bulletins draw primarily on data and information from the UK Met Office and the CEH/BGS National Hydrological Monitoring Programme—the latter comprising data supplied by the Environment Agency, SEPA, NRW and Northern Ireland Environment Agency, as well as the UK water companies.

UK rainfall as % of 1991-2020 average, for (left to right) October-March, April, May, June and July





British Hydrological Society