Fourteenth National Hydrology Symposium

Programme

Lancaster University 12-13 September 2022
Lake District 14 September 2022

www.lancaster.ac.uk/bhs2022

Lancaster University

British Hydrological Society

Welcome to BHS2022 the Fourteenth National Hydrology Symposium

The timing and location of the parallel sessions contributing to each BHS2022 Theme are given on p2-3:

Theme 1: Future hydrology	**Theme 4: Ecohydrology & water quality**
Theme 2: Floods & droughts	**Theme 5: International hydrology**
Theme 3: Natural flood management & partnership working	

Programme for Monday 12 September 2022

		Parallel session (room LT 18)	*Parallel session (room LT 15)*
09:00-10:00	**Refreshments and setup**		
10:00-10:25	**Welcome & keynote**	Keynote: **Katy Peat**, Head of Adaptation Science (Climate Change), Department for Environment, Food and Rural Affairs	
10:25-11:15	Session 1 & 2	**Session 1: Data science in hydrology** (Chair: Matt Fry) (3)	**Session 2: Community response to flooding** (Chairs: Ann Kretzschmar and Ewan Larcombe) (4)
11:15-11:30	**Break-posters-demos**		
11:30-12:30	Session 3 & 4	**Session 3: Innovative approaches for testing and understanding NFM & nature-based solutions** (Chairs: Kate Heal, Leo Peskett, Josie Geris & Megan Klaar) (5) 1 of 2	**Session 4: Impact of flooding on critical infrastructure & the built (urban) environment** (Chairs: Maria Pregnolato & Lindsay Beevers) (4)
12:30-1:15	**Lunch**		
1:15-3:15	Session 5 & 6	**Session 5: Estimation of extreme floods in a changing environment** (Chair: Thomas Kjeldsen) (10)	**Session 6: International hydrology** (including From hillslopes & wetlands to mega rivers: advances in tropical hydrology and Use of UK-based knowledge overseas e.g., flood forecasting (Chairs: Evangelia Kordomenidi and Rory Walsh) (8)
3:15-3:40	**Break-posters-demos**		
3:40-5:30	Session 7 & 8	**Session 7: Future hydrometry & hydrological monitoring** (Chair: Nick Everard) (10)	**Session 8: Ecohydrology & water quality** (Chairs: Clare Rowland, Sarah Halliday & Sayali Pawar; including Ecohydrology and biogeochemistry open session; Use of UK Land Cover Map data for hydrological applications; Water Futures: surface water quality challenges in a changing climate) (10)
5:30-6:30	**Free social time**		
6:30-7:00	**Reception (with dinner booking)**		
7:00-9:00	**Symposium dinner**		

The main venues for the parallel sessions are the new lecture theatres LT 15 and LT 18 in the new Management School building - see map in forthcoming PDF document *BHS2022 Delegate & Presenter Logistics*

Programme for Tuesday 13 September 2022

		Parallel session (room LT 18)	*Parallel session (room LT 15)*
09:00-10:20	Sessions 9 & 10	**Session 9: Next generation of land-surface and hydrological modelling** (Chair: Simon Dadson) (7)	**Session 10: Risk estimation for droughts, including extreme droughts** (Chairs: Jamie Hannaford, Rob Wilby & Geoff Darch) (7) 1 of 2
10:20-10:50	**Break-posters-demos**		
10:50-11:50	Sessions 11 & 12	**Session 11: How valuable is hydrology in flood warning systems?** (Chair: Linda Speight) (3)	**Session 12: Trees, forestry and NFM** and **Co-producing a monitoring framework for evaluation of Nature-based Solutions for Flood Management** (Chairs: Tom Nisbet and Paul Lunt) (5)
11:50-12:30	**AGM**	With BHS President Prof Hayley Fowler, BHS Hon Secretary Lucy Barker and BHS Hon Treasurer Scott McGrane (in LT 18 and over MS-Teams)	
12:30-1:15	**Lunch**		
1:15-2:25	Sessions 13 & 14	**Session 13: Future of the UK flood warning service – how best to expand & standardise approaches** (Chair: Vicky Shackle) (6)	**Session 14: Rainfall–streamflow modelling at ungauged sites for assisting with UK dam spillway flood safety assessments** (Chair: Ian Littlewood) (6)
2:25-3:30	**Flood and Drought Research Infrastructure (FDRI) panel discussion**	FDRI is a once in a generation investment into UK observational hydrology and associated digital infrastructure that will enable research and innovation.	This panel discussion (chaired by Hayley Fowler) will explore how FDRI can help bring transformational change to UK hydrology.
3:30-4:00	**Break-posters-demos**		
4:00-5:30	Sessions 15 & 16	**Session 15: Innovative approaches for testing and understanding NFM & nature-based solutions** (Chairs: Kate Heal, Leo Peskett, Josie Geris & Megan Klaar) (8) 2 of 2	**Session 16: Risk estimation for droughts, including extreme droughts** (Chairs: Jamie Hannaford, Rob Wilby & Geoff Darch) (7) 2 of 2
5:30-6:30	**Free social time**		
6:30-8:30	**Evening meal**		

Programme for Wednesday 14 September 2022

For those registered for 3 days – please refer to separate communications regarding your 'Lunch-in-Box' and optional sign-up for one of three coach trips to the Lake District.

Details of the talks in each session and the location of the posters, computer demonstrations, exhibitors and all refreshments are given on p4-12. See also document *BHS2022 Delegate & Presenter Logistics*

Reception desk and Helpdesk

he reception desk will be located by the **main entrance to the BHS2022 venue** (new Management School building) – see map in *BHS2022 Delegate & Presenter Logistics*. Please collect your name badge lanyard as you arrive at the venue. If you first arrive at the Lancaster University campus between 08:00 – 18:00 on Mon 12 or Tues 13 Sep – please collect your **personal B&B accommodation pack** from this desk. If you arrive outside of these times – your personal B&B accommodation pack will be available at the University Reception Building (LA1 4YW). All accommodation booked via the BHS2022 Online Store will be in Alexandra Park less than 10-mins walk from the Symposium venue.

Poster presentations

Up to 60 poster presentations will be located in the **HUB area** (see map in *BHS2022 Delegate & Presenter Logistics*). To find a specific poster listed in the *BHS2022 Book of Abstracts* simply note the 'poster-board number' to find this numbered board in the HUB area. You have a PDF version of *BHS2022 Book of Abstracts* so you may search for key words. The *BHS2022 Book of Abstracts* will be available before the Symposium so you may highlight on your copy which posters you would like to see. Poster presenters will be available in the breaks and at other times that may be advertised on their poster boards. A list of which posters are associated with each session will be available.

Computer demonstrations

There will be up to eight computer demonstrations to see within the **Robinson lecture theatre (LT 16)** adjacent to main venue LT 15 (see map in *BHS2022 Delegate & Presenter Logistics*). Each computer demonstrator has been assigned a Table number in LT 16. They may advertise the times their demonstration will available over 12-13 Sept 2022. Additionally, computer demonstration *Natural Capital and Ecosystem Assessment (NCEA) Hydrological Network Appraisal Demonstrator* by Catherine Sefton and colleagues of the UK Centre for Ecology & Hydrology may be available next door in **tiered LT 17 on the large screen** on Tues 13 Sep 2022 at the following times: 10.20 - 10.50; 10:50 - 11:20; 11.20 - 11.50.

BHS2022 Official Exhibitors

Interactive exhibits by organisations including JBA Consulting, Water Resource Associates LLP, UK Centre for Ecology & Hydrology, Tempcon Instrumentation Limited and British Hydrological Society will be present in the main conference space between LT 15 and 18, and towards the HUB area (see map in *BHS2022 Delegate & Presenter Logistics*).

JBA Consulting

Eleanor Pearson, Ryan Jennings
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https://www.jbaconsulting.com

The JBA team brings extensive knowledge and skills in understanding the landscape, in land and soil management, in clear communications, and we have a comprehensive appreciation of the wide range of benefits that Working with Natural Processes (WwNP) and Natural Flood Management (NFM) can bring to the environment and society. Our skills have been developed through research and practice, for example we have made considerable contributions to the NERC NFM Research Programme through the Q-NFM and Landwise-NFM projects. This research was co-designed with project partners Defra, the Environment Agency, Scottish Environmental Protection Agency, the Welsh Government and Natural Resources Wales to improve our understanding of the effectiveness and performance of different Natural Flood Management (NFM) measures implemented across different catchment types and scales, for a range of flood risk scenarios. This and other research is now being incorporated into the York Flood and Coastal Resilience Innovation Programme (FCRIP) project which will deliver a programme of investment in NFM measures to increase the resilience of small communities across four North Yorkshire catchments, namely the Swale, Ure, Nidd, and Ouse. Innovative catchment-scale modelling will show the potential of such distributed NFM measures to cumulatively benefit downstream communities, including the City of York itself. The project will engage with catchment partners and communities to build the capacity to implement NFM and raise awareness of how water connects and affects their communities. Financing models will be investigated with the aim of developing a self-sustaining forward pipeline of NFM investment opportunities that enables a long-term legacy. Innovation is at the core of what we do. Following our involvement with the publication of the Environment Agency's (WwNP) Evidence Directory, we continued to develop tools to improve feasibility assessments, modelling, and monitoring of WwNP and NFM projects. We will showcase our Projection Augmented Relief Model (PARM), which is an innovative and engaging way of displaying spatial information on a physical 3D model of a landscape or town. Using a 3D model makes it easier to convey and understand complex spatial information, especially where it changes over time or in different scenarios, for example the impact of NFM or climate change on flood risk. Our expert trainers in hydrology run foundation and advanced level training courses across the UK covering theoretical and practical aspects of hydrological analysis but are equally able to provide bespoke training courses or modules for any organisation or group based on real case studies and practical examples.

Water Resource Associates LLP

Dr Nick Mandeville
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Water Resource Associates was formed in 1994 by a network of experienced water consultants with world-wide experience of water issues. Our combined international experience spans 120 countries covering Western and Eastern Europe, Africa, Asia the Middle-East and the Caribbean. We provide world-class specialised consulting services in catchment hydrology and hydrochemistry, flood risk assessments, hydrological modelling of water resource systems, groundwater monitoring, water management software, water resource assessment and planning, and water quality modelling and assessment. Our software packages include Aquator, CDIG, Disprin, Hydro, HYSIM, HYSIM-CC, INCA and Quasar. As a commercial data service for clients, we provide the following services: (i) CHIRPS data service, which combines data from real-time observing meteorological stations with infra-red data to estimate precipitation, and (ii) TRMM data service, which provides continuous rainfall time-series and rainfall intensity-duration-frequency [IDF] curves for any point on the globe. Project sheets illustrating some of our recent completed studies will be available to view on our stand, and WRA company trifolds will be available for delegates to take away. There will also be the opportunity to engage interactively with a poster presentation entitled: ' Patterns between different seasons' recession curves held on the UK National River Flow Archive'.

UK Centre for Ecology & Hydrology

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Tempcon Instrumentation Ltd

Chris Leslie
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www.tempcon.co.uk/nfm

Tempcon Instrumentation Ltd – for Research-Grade Water and Weather Monitoring Technology. If you need to monitor changes in the water/air/ground – either remotely, or directly from the data logger, Tempcon have the solution! Trusted by Researchers: Tempcon supply the majority of the universities in the UK & many overseas with research-grade measurement and data logging technology, for a huge range of elements including: 1/ Water (level, flow etc), 2/ Weather (rain, wind, temperature etc), 3/ And most other parameters required for environmental monitoring. Chris Leslie from Tempcon will be at the Tempcon stand to discuss any requirements may have. Feel free to start a discussion with him now – simply email chrisleslie@tempcon.co.uk. Supplier to the NERC / Lancaster University Q-NFM Research Project. The equipment chosen for the project to measure, log and transmit rainfall-streamflow data at 10-minute intervals is the HOBO RX3000 remote data logging station, fitted with 3G cellular communication, rain gauge and water level sensor calibrated to streamflow "…Communications protocols, setup and maintenance of hydrological telemetry systems are normally complex, time consuming and expensive. HOBO RX3000-based telemetry systems for hydrology, by contrast, are very easy to set-up and maintain, while being very cost-effective. The UK distributor Tempcon Instrumentation Ltd provide a very professional and friendly delivery of 'turn-key' systems based on the RX3000 as well as the critical technical support for bespoke applications…" Dr Nick Chappell, Lancaster University. Your Project May be Eligible for Research Sponsorship. Tempcon have for many years run a Research Sponsorship Programme where researchers can apply for donation of equipment, services, or technical support up to a maximum of 20% of the Tempcon order value. Why Tempcon? Our company has thrived because we are very good at working with our customers in developing solutions that deliver to their requirements. Since 1980, we have worked with thousands of organisations throughout the UK, Ireland and beyond; we'd love to help you too! Our offices and warehouse are located on the south coast of England in West Sussex where our knowledgeable staff are available to advise and support. You can be assured of quality from us: our Quality System is accredited to BS EN 9001:2015 by National Quality Audits. Simply call 01243 558287, or email chrisleslie@tempcon.co.uk to discuss your requirements. Find out more www.tempcon.co.uk/nfm

British Hydrological Society

BHS Main Committee
https://www.hydrology.org.uk/

Refreshments

The welcome refreshments, morning refreshments, lunch and afternoon refreshments will be **replicated in multiple zones of the atrium**. There will be separate zones for those with special dietary requirements (see map in *BHS2022 Delegate & Presenter Logistics*).

Details of each oral presentation session on Monday 12 September 2022

Session 1: Data science in hydrology (Chair: Matt Fry) 10:25-11:15 Mon 12 Sep

10:25 – 10:35	Felipe Fileni	Quality control methods for the 15min flow and levels datasets in the UK
10:35 – 10:45	Thomas Kjeldsen	On the use of NRFA peaks-over-threshold data for design flood modelling
~~10:45 – 10:55~~	~~Georgios Sarailidis~~	~~Integrating Scientific Knowledge into Machine Learning using Interactive Decision Trees~~
10:55 – 11:05	Tess O'Hara	Bringing the Crowd to the Cloud - WOW!
11:05 – 11:15	Discussion	

Session 2: Community response to flooding (Chair: Ann Kretzschmar) 10:25-11:15 Mon 12 Sep

10:25 – 10:35	Ewan Larcombe	The problems with maintenance of land drainage within a complex, urbanised environment at risk of flooding - and associated legislative shortcomings
10:35 – 10:45	Dr Rhian Thomas	Climate extremes: risk perceptions, mitigation drivers, public health impacts and experience
10:45 – 10:55	Ewan Larcombe	The problem of maintaining flow and quality of ordinary watercourses within an urbanised environment.
10:55 – 11:05	Sevilay Topcu	A Comparative Study on Community Risk Perceptions and Infrastructural Measures for Floods
11:05 – 11:15	Discussion	

Session 3: Innovative approaches for testing and understanding NFM & nature-based solutions (Chairs: Kate Heal, Leo Peskett, Josie Geris & Megan Klaar) 1 of 2, 11:30-12:30 Mon 12 Sep

11:30 – 11:40	Elizabeth Follett	Investigation of varying channel and barrier physical properties on outflow from series of barriers using a sparse input 1D model
11:40 – 11:50	Angus Middleton	Low cost optimisation and comparison of NFM options at landscape scale
11:50 – 12:00	Keith Beven	The importance of retention times in Natural Flood Management interventions
12:00 – 12:10	Stephanie Bond	A hillslope flume for measuring surface roughness
12:10 – 12:20	Marianne Piggott	The Natural Flood Management Manual: A framework to use hydrology to deliver effective NFM
12:20 – 12:30	Discussion	

Session 4: Impact of flooding on critical infrastructure & the built (urban) environment (Chairs: Maria Pregnolato & Lindsay Beevers) 11:30-12:30 Mon 12 Sep

11:30 – 11:40	Maria Pregnolato	Identifying flood and droughts hotspots under global change: a worldwide review
~~11:40 – 11:50~~	~~Sarah Johnson~~	~~Global analysis of emergency service provision to vulnerable populations during floods of various magnitude under climate change~~
11:50 – 12:00	Hazel Long	Translating new climate projections into guidance for land use planning in Scotland.
12:00 – 12:10	Sevilay Topcu	Flash Floods and Their Effects on Critical Infrastructure and Urban Areas in Turkey
12:10 – 12:20	Giuseppe T Aronica	Prioritization of Infrastructures' Criticality: A Multi-criteria Decision Analysis vs. Using Vulnerability Curves
12:20 – 12:30	Discussion	

Session 5: Estimation of extreme floods in a changing environment (Chair: Thomas Kjeldsen) 1:15-3:15 Mon 12 Sep

1:15 – 1:25	David Cameron	Evaluation of the FEH Rainfall Runoff and ReFH2 methods for a gauged catchment in north east Scotland
1:25 – 1:35	Sam Watkiss	The characteristics of 'Walls of water' floods on Pennine catchments and their transmission downstream
1:35 – 1:45	Duncan Faulkner	Non-stationary flood frequency with physical covariates: bridging the gap between theory & practice
1:45 – 1:55	Anthony Hammond	A region of influence approach to estimating flood frequencies for climate change scenarios
1:55 – 2:05	Zijie Wang	Temporal scaling properties of extreme rainfall and intensity-duration-frequency curves in the UK
2:05 – 2:15	Adam Griffin	How do you model or generate 1000 1000-year events?
2:15 – 2:25	Catherine Sefton	Recent hydrological extremes in the UK: the 2018/2019 drought and 2019/2020 floods
2:25 – 2:35	Gemma Coxon	Using UKCP Local for Pluvial and Fluvial Flood Hazard Estimation Under Climate Change
2:35 – 2:45	Gianni Vesuviano	The FEH22 rainfall depth-duration-frequency model
~~2:45 – 2:55~~	~~Simon Moulds~~	~~Skillful decadal flood prediction using a mode-matching approach~~
2:55 – 3:15	Discussion	

Session 6: International hydrology (including From hillslopes & wetlands to mega rivers: advances in tropical hydrology; Use of UK-based knowledge overseas e.g., flood forecasting (Chairs: Evangelia Kordomenidi and Rory Walsh) 1:15-3:15 Mon 12 Sep

1:15 – 1:25	Mike Law	Pragmatic hydrology in data-poor environments for Pacific islands infrastructure projects
~~1:25 – 1:35~~	~~Fazir Khan~~	~~A novel framework for the application of this NOAA hydrological data with for use in the Caribbean.~~
1:35 – 1:45	Daryl Hughes	Improving hydrological predictions in the data-sparse Essequibo River basin, northern Amazonia
1:45 – 1:55	Eva Kordomenidi	Multi-objective optimisation for reservoir management -A case study in tropical South East Asia
1:55 – 2:05	Paul Wass	Real time reservoir control on the River Lee using a forecasting system
2:05 – 2:15	Linda Speight	Using global flood forecasts to support international humanitarian operations for tropical cyclones
2:15 – 2:25	Tom Beskeen	The Black Drin basin: A panoply of hydrological modelling challenges in the Balkans
2:25 – 2:35	Eva Kordomenidi	Multi-objective optimisation for reservoir management -an industry perspective
2:35 – 2:45	Rory Walsh	Hydrological implications of changes in rainstorm size-frequency in Sabah (Malaysian Borneo)
2:45 – 3:15	Discussion	

Session 7: Future hydrometry & hydrological monitoring (Chair: Nick Everard) 3:40-5:30 Mon 12 Sep

3:40 – 3:50	Robert Wilby	How hard can it really be to sustain a national water temperature indicator?
3:50 – 4:00	Richard Dallison	Future water availability for run-of-river hydropower in the UK and Ireland under climate change
4:00 – 4:10	Nick Everard	What if we could measure streamflow from space...?
4:10 – 4:20	Matt Fry	A hydrological data commons for research
4:20 – 4:30	Mike Summers	Exploring the current and future user requirements for water

		quantity data
4:30 – 4:40	Dr Gareth Old	Floods and droughts research infrastructure (FDRI): enabling the hydrological research community
4:40 – 4:50	David Fadipe	Developing new pluvial flood maps for Scotland
4:50 – 5:00	Dr Annie Ockelford	Get HIP! - the EA's Flood Hydrology Improvements Programme (FHIP)
5:00 – 5:10	Dr Jonathan G Evans	COSMOS-UK: The National Soil Moisture Observation Network – Available Data and Applications
5:10 – 5:20	Harley Dixey	Investigating the effectiveness of image enhancement for improving tracer detection in LSPTV
5:20 – 5:30	Discussion	

Session 8: Ecohydrology & water quality (Chairs: Clare Rowland, Sarah Halliday & Sayali Pawar; including Water Futures: surface water quality challenges in a changing climate; Ecohydrology and biogeochemistry open session; Use of UK Land Cover Map data for hydrological applications) 3:40-5:30 Mon 11 Sep

3:40 – 3:50	Nadeem Shah	The effects of land use, and particularly forestry, on aquatic carbon transport
3:50 – 4:00	Rosie Hampson	Hydrology for intertidal habitat restoration
4:00 – 4:10	Tamsin Lockwood	The role and impact of Community Flood Groups for effective NFM management and maintenance
4:10 – 4:20	Dr James Miller	FEH and land cover map – improving and exploring new methods for estimating floods
4:20 – 4:30	Clare Rowland	An introduction to the UK Land Cover Map
4:30 – 4:40	Shaini Naha	Modelling climate change impacts on water quality at catchment scale using HYPE
4:40 – 4:50	Karolina Krupska	Forecasting of bathing waters quality in England – improving the present by looking ahead.
4:50 – 5:00	Ben C Howard	Restoring the liver of the river: instream wood as a nature-based solution to nutrient pollution
5:00 – 5:10	Muyeol Jung	The impact of the construction of eight barrages on water quality and diatom assemblages in the Nakdong River, South Korea
5:10 – 5:20	Benjamin Exton	An overdue revisiting of sewage fungus: Hydrological, water quality and microbial controls on growth
5:20 – 5:30	Discussion	

Details of each oral presentation session on Tuesday 13 September 2022

Session 9: Next generation of land-surface and hydrological modelling (Chair: Simon Dadson) 09:00-10:20 Tue 13 Sep

9:00 – 9:10	Simon Dadson	Hydro-JULES: Next generation land-surface and hydrological predictions
9:10 – 9:20	Piotr Morawiecki	A mathematical framework for the unification of rainfall-runoff models
9:20 – 9:30	Keith Beven	When might a model be considered as fit-for-purpose (or not)?
9:30 – 9:40	Michael Eastman	Assimilating observed flows to improve rainfall-runoff simulation
9:40 – 9:50	John Wallbank	X-band radar precipitation estimates assessed using a hydrological model for mountainous catchments
9:50 – 10:00	Ben Smith	National-Scale Physically-Based Hydrological Modelling with UKCP18 Climate Projections
10:00 – 10:20	Rhiannon Bryan	Grand Union Canal Strategic Resource Option Modelling
10:20 – 10:30	Discussion	

Session 10: Risk estimation for droughts, including extreme droughts (Chairs: Jamie Hannaford, Rob Wilby & Geoff Darch) 1 of 2, 09:00-10:20 Tues 13 Sep

9:00 – 9:10	Mike Law	Climate Change Adjustment of Long Time Series Rainfall
9:10 – 9:20	Amulya Chevuturi	Drivers of extreme UK droughts
9:20 – 9:30	Adam Griffin	Generating widespread drought event sets for present and future using empirical copulas
9:30 – 9:40	Ali Rudd	Hydrological drought characteristics at different levels of warming
9:40 – 9:50	Maliko Tanguy	How will climate change affect spatial coherence of droughts?
9:50 – 10:00	Ellie Willmott	Drought risk assessment tool – DRAT – hydrological data use in regulatory decision making
10:00 – 10:20	Tom Beskeen	Development of a rainfall-runoff model based drought forecasting tool applied in the Anglian region
10:20 – 10:30	Discussion	

Session 11: How valuable is hydrology in flood warning systems? (Chair: Linda Speight) 10:50-11:50 Tues 13 Sep

10:50 – 11:00	Charlie Pilling	Surface Water Flooding: Identifying and warning for extreme events now and in the future
11:00 – 11:10	Rob Millington	Forecasting to support reservoir infrastructure repair and development
11:10 – 11:20	Paul Wass	Real time reservoir control on the River Lee using a forecasting system
~~11:20 – 11:30~~	~~Dr. Helen Griffith~~	~~The role of land surface in enhancing or suppressing Atmospheric River driven floods~~
11:30 – 11:50	Discussion	

Session 12: Trees, forestry and NFM and Co-producing a monitoring framework for evaluation of Nature-based Solutions for Flood Management (Chair: Tom Nisbet and Paul Lunt) 10:50-11:50 Tues 13 Sep

10:50 – 11:00	Dr Paul Lunt	Benefits of partnership working to co-produce a county flood management monitoring strategy
11:00 – 11:10	Sarah Collins	Modelling the impact of land use change on floods and drought in a large, permeable catchment
11:10 – 11:20	Tom Nisbet	An evaluation of the flood regulation service of GB woodlands
11:20 – 11:30	Steve Birkinshaw	The effect of forest on river flows over a 55-year growth cycle in the

		Coalburn catchment
11:30 – 11:40	Thomas Myerscough	Working Title - Wyre Catchment NFM - the development of the UK's first green investment NFM project
11:40 – 11:50	Discussion	

Session 13: Future of the UK flood warning service – how best to expand & standardise approaches (Chair: Vicky Shackle) 1:15-2:25 Tues 13 Sep

1:15 – 1:25	Neil Ryan	Developing the future flood forecasting and warning service in England
1:25 – 1:35	Rob Lamb	The UK Flood Hydrology Roadmap: a 25-year plan of action.
1:35 – 1:45	Jo Cullen	The EA Flood Hydrology Improvements Programme's pathway to reducing uncertainty in flood hydrology
1:45 – 1:55	Paul Smith	Build your own flood forecasting system
1:55 – 2:05	Lucile Verrot	Evaluating operational flood forecasts and alerting systems: methods, challenges and opportunities
2:05 – 2:15	Hayley Fowler	UK design storms are flawed and need updating
2:15 – 2:25	Discussion	

Session 14: Rainfall–streamflow modelling at ungauged sites for assisting with UK dam spillway flood safety assessments (Chair: Ian Littlewood) 1:15-2:25 Tues 13 Sep

1:15 – 1:25	Ian Littlewood	Unit Hydrographs and UK reservoir spillway flood hydrology
1:25 – 1:35	Tracey Haxton	Exploring the estimation of the PMF using ReFH2
1:35 – 1:45	Dr Nick Mandeville	Reversing the traditional sequence of the two main modules in quickflow rainfall-runoff models
1:45 – 1:55	Amy Green	PYRAMID: Platform for dYnamic, hyper-resolution, near-real time flood Risk AssessMent Integrating repurposed and novel Data sources
1:55 – 2:05	Andrew Black	Rain gauge under-catch and catchment water balance in the mountainous hydrometric wilderness
2:05 – 2:15	Duncan Faulkner	Options for improving probable maximum flood estimates for UK reservoir safety
2:15 – 2:25	Discussion	

Session 15: Innovative approaches for testing and understanding NFM & nature-based solutions (Chairs: Kate Heal, Leo Peskett, Josie Geris & Megan Klaar) 2 of 2, 4:00-5:30 Tues 13 Sep

4:00 – 4:10	Nick Chappell	Cumbrian NFM effectiveness monitoring network
4:10 – 4:20	Chris Skinner	Modelling the efficacy of leaky dams using a Landscape Evolution Model
4:20 – 4:30	Tim Howson	The evolution of stone and timber dams, as part of peatland restoration, in eroded gully systems
4:30 – 4:40	Emma Shuttleworth	A ten-year trajectory of hydrological recovery in a restored blanket peatland: implications for NFM
4:40 – 4:50	Tim Allott	Peatland gully blocking and natural flood management: a micro-catchment study
4:50 – 5:00	Salim Goudarzi	Natural Flood Management through Peatland Restoration: Scenario Modelling in the Glossop catchment
5:00 – 5:10	Wouter Buytaert	Innovation in hydrology: from low cost sensor prototypes to FDRI
5:10 – 5:20	Imogen Barnsley	Testing the application of Natural Flood Management in a groundwater-dominated catchment and its resilience to future climate changes using the SHETRAN model.
5:20 – 5:30	Discussion	

Session 16: Risk estimation for droughts, including extreme droughts (Chairs: Jamie Hannaford, Rob Wilby & Geoff Darch) 2 of 2, 4:00-5:30 Tues 13 Sep

4:00 – 4:10	Steven Wade	Regional Climate Data Tools: Using stochastic data and UKCP18 to understand drought risks
4:10 – 4:20	Simon Parry	The future of UK drought: Contrasting fortunes projected for low river flows and groundwater levels
4:20 – 4:30	Wilson Chan	Current and future extreme UK droughts
4:30 – 4:40	Rob Wilby	UNSEEN approaches to generating extreme droughts for resilience planning
4:40 – 4:50	Lucy Barker	Making sense of drought risk: current and future approaches to communications in England and Wales
4:50 – 5:00	Robert Moore	Recent developments of the PDM rainfall-runoff model for flood and drought management
5:00 – 5:10	Gordon Aitken	Partitioning Model Uncertainty in Multi-model Ensemble River Flow Climate Change Projections
5:10 – 5:20	Sayali Kunal Pawar	What does the future hold? Using Standardised Precipitation and Evapotranspiration Index (SPEI) to project drought in Scotland.
5:20 – 5:30	Discussion	

British Hydrological Society

NAC 20/08/2022