

CURRICULUM VITAE: PROFESSOR HAYLEY J. FOWLER

School of Engineering, Cassie Building, Newcastle University, Newcastle upon Tyne, NE1 7RU UK.

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EDUCATION

Ph.D. Newcastle University (2000) *Department of Civil Engineering.*

M.Sc. Newcastle University (1997) *Water Resource Systems Engineering, Distinction.*

B.A. University of Cambridge (1996) *Geography, 1st class. Department of Geography, Cambridge*

Awards: *Philip Lake Prize for Top Physical Geographer, University of Cambridge (1996); Cockle Prize, Top Geographer, and 1912 Senior Scholarship, Fitzwilliam College, Cambridge University (1996)*

PROFESSIONAL HISTORY

Professor of Climate Change Impacts, School of Engineering, Newcastle University (70% FTE until 01.08.17) 2012- present

Maternity leave (11 months) 2011 – 2012

Maternity leave (12 months) 2009 – 2010

Reader, CEG, Newcastle University (70% FTE from 01.05.10) 2008 – 2012

NERC Postdoctoral Research Fellow, CEG, Newcastle University 2006 – 2010

Senior Research Associate, CEG, Newcastle University 2003 – 2006

Research Associate, CEG, Newcastle University 2001 – 2003

PROFESSIONAL RECOGNITION AND HONORS

Awards: *Fellowship of American Geophysical Union (2018); Royal Society Wolfson Research Merit Award (2014-2019); ERC Consolidators Grant (2014-2019); British Science Association Joseph Lister Award Lecture (2013); Philip Leverhulme Prize (2011); NERC Postdoctoral Fellowship (2006-2010); Best paper award – Journal of Flood Risk Management (2019).*

Honorary and Advisory Positions: *British Hydrological Society President Elect (2020); Co-Chair of Newcastle's Net Zero Task Force; Environment Agency Expert panel for Boosting Action in Surface Water: Plausible Extremes (2020-); Strategic Advisory Board for RESAS Science (2020-); NERC PRC Panel B Chair (2020-23); Met Office Hadley Centre Climate Programme Science Review Group (2020-); Contributing Author to Chapter 8 (Water Cycle) and Chapter 11 (Extremes) IPCC WGI AR6.*

Visiting Positions: *Visiting Prof, UNSW, Australia (2017), Visiting Fellowship, NCAR, US (2007, 2011)*

MEMBERSHIPS AND PROFESSIONAL ACTIVITIES

Member: *American Geophysical Union (AGU), European Geosciences Union (EGU), British Hydrological Society Hon Sec: 2006–08), AGU Hydrologic Sciences Award Committee (2017-19), Newton International Fellowships Committee: Physical Sciences, Royal Society (2017-19), NERC Peer Review College (2010–); NERC Core Member for Panel B (2014-)*

Editor: *Chief Editor of Frontiers in Interdisciplinary Climate Studies (2017-, Assoc Editor: 2013-17); Academic Editor of PLOS ONE (2014-); Associate Editor of Climate Risk Management (2018-), International Advisory Board of WIRES Water (2013-); Guest Editor SI Hydrology Research (2012); Guest Editor SI International Journal of Climatology (2007, 2009)*

Invited Expert Reviewer: *IPCC 4th and 6th Assessment Report (WGI and WGII) and IPCC Special Report on Global Warming of 1.5C; CH2018 (Swiss) Report and U.S. EPA's Literature Syntheses Describing Climate Change Effects on Water Quality (2016); European Environment Agency report: "Climate change, impacts and vulnerability in Europe 2016"; LWEC Climate Change Impacts report card for Water (2013 and 2015); Newton Prize (2017); Reviewed research proposals for NSF, Canadian CFCAS, NERC, EPSRC, Swiss NSF, Irish EPA, Australian Research Council, RGS, British Council, Royal Society, EU Horizon 2020, ERC, Netherlands NOSR; Reviewer > 30 ISI-cited journals.*

Chair: *Chair of Global Energy and Water Exchanges (GEWEX) Hydroclimatology Panel (GHP) sub-daily precipitation cross-cut (2014-); Co-Chair of IMAGE Theme of the Year summer school, NCAR, August 6th-17th; Co-Chair of NCAR ASP summer colloquium 14th Jul – 1st August; Frequent Session convener at EGU General Assembly and AGU Fall Assembly.*

Knowledge Transfer: *Expert consultations on extreme rainfall and climate change impacts: Environment Agency; Royal Haskoning; NWL; Willis Re; JBA; CH2M Hill; UK Water Industry Research (UKWIR), Northumbrian Water, UK Flood Forecast Centre.*

Outreach: *Engaged with the public on climate change through many lectures and fora (e.g., Café Scientifique, NE Climate Change Conference, British Science Festival, etc.); Frequent media interviews (incl. BBC, National Geographic, national newspapers, radio, etc.)*

Invited Professional Talks: *>70 since 2008 incl. the Ny-Ålesund Symposium (2018): who invite only 45 international policy makers, researchers, senior business executives, & other high-level decision makers.*

FUNDING (UKRI, Defra, ERC/EU, Royal Soc., Leverhulme, British Council, UKWIR (>£14m).

Relevant projects in last 5 years: **STORMY-WEATHER** (NERC 2020-2022) will examine plausible UK rainfall extremes from future winter storms and produce storyline narratives; **PYRAMID** (NERC 2020-2022) will build a new platform for dynamic, hyper-resolution, near-real time flood risk assessment by integrating repurposed and novel data sources; **FUTURE-DRAINAGE** (NERC 2019-2020) will update climate uplifts for urban drainage design based on UKCP18; **FUTURE-STORMS** (NERC, 2018-21) will use outputs from convection-permitting models to (a) develop weather generator tools and time series for practitioners based on UKCP18; (b) produce new allowances for extreme precipitation, hail, lightning and windstorms for use in European climate adaptation; **INTENSE** (INTElligent use of climate models for adaptatioN to non- Stationary hydrological Extremes, ERC Consolidator Grant, 2014-2020) investigates global changes to sub-daily rainfall extremes and flash floods using observations and models; **SINATRA/TENDERLY** (NERC, 2013-19): develops new forecast models for flash floods with the Flood Forecast Centre;

SELECTED RECENT PUBLICATIONS (from >140 REFEREED PUBLICATIONS, H-index = 59)

FOWLER HJ ET AL. 2021. Anthropogenic intensification of short-duration rainfall extremes. *Nature Reviews Earth and Environment*, 2, 107–122, DOI: 10.1038/s43017-020-00128-6.

FOWLER HJ ET AL. 2021. Towards advancing scientific knowledge of climate change impacts on short-duration rainfall extremes. *Phil. Trans. Roy. Soc. A.*, 379, 20190542, DOI: 10.1098/rsta.2019.0542.

LI Y, **FOWLER HJ**, ARGÜESO D, BLENKINSOP S, EVANS JP, LENDERINK G, YAN X, GUERREIRO SB, LEWIS E, LI X-F 2020: Strong intensification of hourly rainfall extremes by urbanization. *Geophysical Research Letters*, 47(14), e2020GL088758, DOI: 10.1029/2020GL088758.

LENGFELD K, KIRSTETTER P-E, **FOWLER HJ**, YU J, BECKER A, FLAMIG Z, GOURLEY J. 2020. Use of radar data for extreme precipitation at fine scales and short durations. *Environmental Research Letters*, 15(8), 085003, DOI: 10.1088/1748-9326/ab98b4.

MING X, LIANG Q, XIA X, LI D, **FOWLER HJ**. 2020. Real-time flood forecasting based on a high-performance 2D hydrodynamic model and numerical weather predictions. *Water Resources Research*, 56(7), DOI: 10.1029/2019WR025583.

GUERREIRO S, **FOWLER HJ**, BARBERO R, WESTRA S, LENDERINK G, BLENKINSOP S, LEWIS E. Detection of continental-scale intensification of hourly rainfall extremes. *Nature Climate Change*, DOI: 10.1038/s41558-018-0245-3, 2018.

ARCHER DR, **FOWLER HJ**. Characterising flash flood response to intense rainfall and impacts using historical information and gauged data in Britain. *J. Flood Risk Management*, 11, S121-S133, 2018.

DALE M, LUCK B, **FOWLER HJ** ET AL. New climate change rainfall estimates for sustainable drainage. *Proceedings of the Institution of Civil Engineers - Engineering Sustainability*, 170(4), 214-224, 2017.

LENDERINK G, **FOWLER HJ**. UNDERSTANDING PRECIPITATION EXTREMES. *Nat. Cl. Ch.*, 7, 391–393, 2017.

CLARK MP, WILBY RL, GUTMANN ED, VANO JA, GANGOPADHYAY S, WOOD AW, **FOWLER HJ**, PRUDHOMME C, ARNOLD JA, BREKKE LD. Characterizing uncertainty of the hydrologic impacts of climate change. *Curr. Climate Change Rep.*, 2, 55, 2016.

CHAN SC, KENDON EJ, ROBERTS NM, **FOWLER HJ**, BLENKINSOP S. Downturn in scaling of UK extreme rainfall with temperature for future hottest days. *Nat. Geosc.*, 9, 24–28, DOI: 10.1038/NGEO2596, 2016.

KENDON EJ, ROBERTS NM, **FOWLER HJ**, ET AL. Heavier summer downpours with climate change revealed by weather forecast resolution model. *Nat. Cl. Ch.*, 4, 570–576, 2014.