University of Birmingham

Gavin Williams

Doctoral Researcher

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About

Gavin is a freshwater ecologist, investigating the effects of extreme events upon stream and river structure and functioning. Whilst interested in climate change and biotic responses, Gavin's research looks beyond 'mean' climate changes and focuses upon extreme events, specifically drought and heat waves.

This research follows recent IPCC publications outlining the threat from extreme events to aquatic systems. Gavin uses laboratory microcosm and field mesocosm experimental approaches in order to manipulate biotic and abiotic stressors whilst being able to control all other environmental parameters. The research ranges from single species to community responses, and includes multiple stressor impacts.

Gavin is part of a collaborative research project entitled **DriStream (http://www.birmingham.ac.uk/research/activity/water/projects/dristream/index.aspx)**, which encompasses the University of Birmingham, Queen Mary University of London and Imperial College London. The project is funded by the UK National Environment Research Council (NERC) and led by Dr Mark Ledger.

Gavin is also the Freshwater Student Representative for the British Ecological Society (BES) Aquatic Group and has been responsible for organising the group's 2014 conference event. Gavin's role includes helping the group achieve its numerous aims and to support and represent Early Career Researchers.

Qualifications

- BSc Environmental Science (2011) First Class Honours

Biography

Gavin moved from the rural countryside of Herefordshire to study BSc Environmental Science at the University of Birmingham, which he passed with a first class honours. Gavin then worked as an Environmental Technician for a soil and groundwater remediation company where he trained towards becoming a remediation site scientist on a prestigious Longbridge development site, and a pharmaceutical site in Dartford. Gavin then returned to the University of Birmingham to undertake doctoral research and is currently reading for a PhD in freshwater ecology.

Teaching

Gavin demonstrates on a BSc Environmental Science first year field course and a second year aquatic ecology field course. Gavin also undertakes invigilating and marking.

Other responsibilities include co supervision of BSc and MSc dissertation projects.

Research

Gavin's expertise includes:

- Aquatic Ecology and Experimental Ecology
- Freshwater Macroinvertebrate (including Chironomid) Taxonomy
- Disturbance Ecology and Multiple Stressor Research
- Functional Ecology

Gavin's research also focuses upon:

- Freshwater Macroinvertebrate Physiology
- Aquatic Botany and Macrophyte Studies
- Aquatic Physicochemistry

Other activities

- Member of the Freshwater Biological Association (FBA)
- Member of the British Hydrological Society (BHS)
- Member of the British Ecological Society (BES)

- Graduate member of the Chartered Institute of Ecology and Environmental Management (Grad CIEEM)

Publications

Presentations

Matthew O'Callaghan, Hart K., **Williams G. M. D.**, Trimmer M., Woodward G & Ledger M. E. "Habitat change and energy flows in experimental mesocosms" British Ecological Society Aquatic Ecology Group annual meeting. Charles Darwin House, London.

Williams, G. M. D.,O'Callaghan, M. J., Trimmer M., Woodward, G. & Ledger, M. E. "Fragility of stream ecosystem functioning in response to drought: an experimental test."British Hydrological Association's 'Ecohydrology/Hydroecology;' University of Birmingham, April 2013.

Williams, G. M. D.,Hayward, S. A. L., O'Callaghan, M. J., Trimmer M., Woodward, G., Hart, K. M.& Ledger, M. E. "Thermal Tolerances of Freshwater Macroinvertebrates."London Freshwater Group (and Freshwater Biological Association AGM) meeting.Natural History Museum London, November 2014.

Williams, G. M. D., Hayward, S.A. L., O'Callaghan, M. J., Trimmer M., Woodward, G., Hart, K. M. & Ledger,M. E. "Going to extremes: evaluating a technique to rapidly determine thermal tolerance phenotypic traits in stream macroinvertebrates." British Hydrological Association's 'Hydroecology and water abstraction: science, practice and licence reform.' University of Birmingham, December 2014.

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