Mike Spencer

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EDUCATION

UNIVERSITY OF EDINBURGH
PhD in snow hydrology
Expected Q1 2016

LANCASTER UNIVERSITY
BSc in Environmental Science
June 2004

MEMBERSHIP

British Hydrological Society
Royal Meteorological Society
Royal Statistical Society

LINKS

Blog: **scottishsnow**
Twitter: **@MikeRSpencer**
LinkedIn: **mikerspencer**
StackExchange: **mikerspencer**

ARTICLES

PEER REVIEWED

Spencer, M. & Essery, R., *Exceedence magnitude snowmelt estimates in a temperate changing climate*, in draft.

Spencer, M. & Essery, R., *Scottish Snow Cover Dependence on the North Atlantic Oscillation Index*, Hydrological Research, in review.

Reid, T., Spencer, M., Huntley, B., Hancock, S., Essery, R., Carle, J., Holden, R., Baxter, R. & Rutter, N., *Spatial quantification of leafless canopy structure in a boreal birch forest*, Agricultural and Forest Meteorology , **2014**, 188, 1-12

Spencer, M., Essery, R., Chambers, L. & Hogg, S., *The Historical Snow Survey of Great Britain: Digitised Data for Scotland*, Scottish Geographical Journal, **2014**, 130, p252-265

OTHER

Hollebrandse, F., Spencer, M. & Nutt, N., *Open Hydrology launches open-source flood estimation software*, British Hydrological Society Circulation No. 125, **2015**.

RESEARCH

INTERESTS

- Hydrological hazard frequency; particularly how we can understand and communicate spatial variability and integrate often discounted hazards, e.g. snowmelt.

- Combining disparate big data sources to answer real world research questions, e.g. citizen science data, official sources, model outputs.

PHD Snow hydrology
Sep 2011 - Q1 2016 | University of Edinburgh, Scotland

- Data mined historic Snow Survey of Great Britain dataset.
- Consideration of satellite snow observations veracity for Scotland.
- Snow cover dependence on large scale atmospheric circulation indicators (NAO).
- Degree day snow modelling to establish frequency of snow cover and melt.
- Funded by the Natural Environment Research Council (NERC).

FIELD ASSISTANT | Griffin forest field site
Oct 2013 - May 2015 | University of Edinburgh, Scotland

- Fortnightly fieldwork including sampling and site maintenance.
- Lab work preparing samples for analysis.
- Data management of irregular disparate time series field and lab data.
- Employed part time alongside PhD.

FIELD CAMPAIGN | Abisko, Sweden
Mar 2012 | University of Edinburgh, Scotland

- Lead month long field work in sub-Arctic Sweden, undertaking density sampling of Boreal forest canopy.
- GIS analysis and figure preparation with input to Reid *et al* (2014) paper.
- Funded by INTERACT.

EXPERIENCE

HONORARY OFFICE | GradSchool Chair
Feb 2012 - Jan 2013 | Edinburgh, Scotland

- Committee chair representing 200 GeoScience PhD students.
- Ran 3 day residential conference with 120 delegates from university and industry and other events through the academic year.
- Responsible for £25'000 of budget with £15'000 raised through industry sponsorship.

HALCROW GROUP LTD | Senior hydrologist
Sep 2008 - July 2011 | Edinburgh, Scotland

- Hydrological lead for Halcrow flood risk projects in Scotland.
- Training and supervision of staff working on hydrology projects.
- Project and package management.
- Flood forecasting model design and build.
- Flood risk assessments.
- Flood protection scheme hydrological assessment.
- Designing river realignment.

CONFERENCES

TALKS

QGIS user group, Edinburgh, Oct 2014
BHS symposium, Birmingham, Sep 2014
Contemporary climate seminar, Edinburgh, Jul 2014
EuRuCAS summer school, St Petersburg, Jul 2014
Scottish hydrological group, Stirling, Oct 2013
BHS symposium, Birmingham, Jul 2014
Northern rivers institute seminar, Aberdeen, Apr 2012
Postgraduate student research conference, Edinburgh Feb 2012
GradSchool conference, Pitlochry, Jan 2012

POSTERS

QGIS user group, Edinburgh, May 2015
SNIFFER, Edinburgh, Feb 2015
GradSchool conference, Peebles, Jan 2015
BHS symposium, Birmingham, Sep 2014
EuRuCAS summer school, St Petersburg, Jul 2014
Upland hydrology in the UK, Leeds, Mar 2014
International Glaciaological Society British branch, Loughborough, Sep 2013
Postgraduate student research conference, Edinburgh, Mar 2013

SKILLS

COMPUTING

Operating systems:
Linux (Debian based) • Microsoft Windows
Programming and databases:
R • SQLite • LaTeX • Git • Bash
Spatial:
QGIS • GRASS • ArcGIS • MapInfo Pro
Other:
Microsoft/Libre Office • Most hydrological and hydraulic modelling software, e.g. ISIS, HEC, FEH

EXPERIENCE CONTINUED

ENVIRONMENT AGENCY WALES | Hydrologist

Dec 2005 - Sep 2008 | Haverfordwest, Wales

- Flood magnitude estimation.
- Catchment wide and detailed site specific 1D and 2D hydrodynamic hydraulic modelling.
- Scrutiny of flood consequence assessments against TAN15 (Welsh Government) guidance.
- GIS mapping coastal flooding in S.W. Wales, including estuary surge.
- Data management of flood risk assessments, hydraulic models and GIS output.
- Flood Warning Duty Officer; as a forecaster and disseminator for Floodline.
- Public and business communication of how and why flood risk maps are created.

TEACHING

STUDENT SUPERVISION

2012 - 2014 | University of Edinburgh

- MSc GIS: *The development of a regression based Soil Moisture equation for the Hydrological Assessment of Natural Flood Management in Scotland*, 2013.
- BSc Geophysics and Meteorology: *Remote snowline measurement in the Scottish Highlands - a scoping exercise*, 2012.

LECTURES

2013 - ongoing | University of Edinburgh

- MSc Water Resources lecture (Annual frequency)
- PhD student inductions (fieldwork, web presence, data science)

DEMONSTRATING

2011 - ongoing | University of Edinburgh

Meteorology: atmosphere and environment • Geomorphology • Quantitative methods in geography • Water resources field course • Geology and landscapes • Land use and water resources

OTHER

JOURNAL REVIEWER

Climate Change
Geoscientific model development

FUNDING AWARDS

Year	Funder	Award
2014	EuRuCAS	All costs for Arctic hydrology summer school St Petersburg, Russia
2014	NERC	All costs for introduction to scientific computer course York, England
2013	NERC	All costs for environmental statistics course Glasgow, Scotland
2012	INTERACT	Travel and accommodation for Boreal forest research Abisko, Sweden
2011	NERC	Fully funded PhD

REFERENCES

Available on request