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DOUGLAS KELLEY

VEGETATION MODELLER

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SUMMARY

Academic qualification

2014 PhD Ecology

Macquarie University, Department of Biological Sciences, Ryde, NSW, Australia
Modelling Australian fire regimes
Benchmarking and developing the LPX Dynamic Global Vegetation Model (DGVM) to improve the simulation of fire and fire-vegetation interacting. Using this new version of LPX to simulate fire, vegetation and carbon dynamics in Australia over the 21st century

2008 MSc Earth System Science

University of Bristol, Department of Earth Sciences, UK
Main dissertation: Statistical modelling of global fire regimes.

Other subjects covered: Climate change science and policy; Earth system modelling; Natural hazards; Remote sensing & GIS; Isotopes and other Earth System tracers

2007 BSc (Hons.) Physics

University of Warwick, Department of Physics, UK
Main dissertation: Modelling atmospheric effects on starlight.

Employment History

Apr 2015-present
Postdoctoral Research Assistant

Department of Geography & Environmental Science, University of Reading, UK.

Jun 2014-Mar 2015
Postdoctoral Research Assistant

Department of Biological Sciences, Macquarie University, Ryde, NSW, Australia.

Sep 2008-Sep 2010
Research Assistant

Department of Geographical Sciences, University of Bristol, UK.

Publications

Total Citations: 190 H index: 6 i10 index: 3

Awards

2010-2014
Macquarie

2013
Post

2011
Biology

University Research Excellence Scholarship

Macquarie University, Ryde, NSW, Australia

Graduate Research Fund (PGRF)

Macquarie University, Ryde, NSW, Australia

postgrad conference best presentation

Biological Sciences, Macquarie University, Ryde, NSW, Australia

Current Research Interests

Vegetation-climate dynamics and ecosystem modelling, including:

- Fire dynamics and fire—climate—vegetation interactions.
- Wildfire impacts (on e.g vegetation, carbon-cycle, hydrology)
- Vegetation disturbance resistance and recovery
- Plant resource allocation strategies.

FULL CURRICULUM VITAE

Personal Details

Name: Dr Douglas I Kelley Date of Birth: 06/08/1984 Nationality: British

Work Address

Department of
Geography &
Environmental
Science
University of Reading
Whiteknights
Reading
RG6 6AB
UK

Home Address

Flat 40
18 Oxford Road
Reading
Berkshire
RG1 7LB
UK

Email:
douglas.i.kelley@gmail.com

Phone: +44 (0) 7936 726
819

Web:
http://douglask3.github.io/

Higher Education

PhD Ecology

Macquarie University, Department of Biological Sciences, Ryde, NSW, Australia Modelling Australian fire regimes **2010-2014**

Benchmarking and developing the LPX Dynamic Global Vegetation Model (DGVM) to improve the simulation of fire and fire-vegetation interacting. Using this new version of LPX to simulate fire, vegetation and carbon dynamics in Australia over the 21st century

MSc Earth System Science

University of Bristol, Department of Earth Sciences, UK **2007-2008**

Main dissertation: Statistical modelling of global fire regimes.

Other subjects covered: Climate change science and policy; Earth system modelling; Natural hazards; Remote sensing & GIS; Isotopes and other Earth System tracers

BSc (Hons.) Physics

University of Bristol, Department of Earth Sciences, UK **2002-2007**

Main dissertation: Modelling atmospheric effects on starlight.

Employment History

Postdoctoral Research Assistant

Department of Geography & Environmental Science, University of Reading, UK. **April 2015-present**

Job description

Postdoctoral Research Assistant

Cafe M Research Group, Department of Biological Sciences, Macquarie University, Ryde, NSW, Australia **Oct 2014-Apr 2015**

Testing conceptual phenology and plant carbon allocation models within vegetation process models

Research Assistant

Department of Biological Sciences, Macquarie University, Ryde, NSW, Australia **Jun 2014-Sep 2014**

Modelling past and future fire regime changes and its feedback on vegetation Testing conceptual phenology and plant carbon allocation models within vegetation process models

Research Assistant

Department of Geographical Sciences, University of Bristol, UK **Sep 2008-Sep 2010**

DGVM fire model development. Applying developed model to: test to effectiveness of different fire management techniques in current and future climates; simulate paleo vegetation and carbon stocks.

Department of Earth Sciences, University of Bristol, UK **Apr 2008-Sep 2008**

Publicity; lecture and seminar timetabling; finding and organising guest lectures; general admin.

Widening Participation

Widening Participation Office, University of Bristol **Sep 2007-Sep 2008**

Working with students in primary and secondary education to encourage university attendance from low socio-economic backgrounds: helping organize & run University open days and campus tours; in-school presentations and career evenings.

Current Research Interests

Doug is a Postdoctoral Research Fellow working with the Climate And Forest Ecosystem Modelling and Biosphere and Climate Dynamic groups at Macquarie University. His research focuses on modelling the interactions between wildfire, climate and vegetation. In addition, he is also working on plant resource allocation strategies. He is particularly interested in ways vegetation resist and recover after fire, and the wider implications this has on the carbon cycle and hydrology.

Publications

In review

Doug is a Postdoctoral Research Fellow working with the Climate And Forest Ecosystem Modelling and Biosphere and Climate Dynamic groups at Macquarie University. His research focuses on modelling the interactions between wildfire, climate and vegetation. In addition, he is also working on plant resource allocation strategies. He is particularly interested in ways vegetation resist and recover after fire, and the wider implications this has on the carbon cycle and hydrology.

Total Citations: 190 H index: 6 i10 index: 3

IC Prentice, DI Kelley, PN Foster, P Friedlingstein, SP Harrison, ...: Modeling fire and the terrestrial carbon balance, Global Biogeochemical Cycles 25 (3) (2011)

. citations:86

P Ciais, A Tagliabue, M Cuntz, L Bopp, M Scholze, G Hoffmann, ...: Large inert carbon pool in the terrestrial biosphere during the Last Glacial Maximum, Nature Geoscience 5 (1), 74-79 (2012)

. citations:42

DI Kelley, IC Prentice, SP Harrison, H Wang, M Simard, JB Fisher, ...: A comprehensive benchmarking system for evaluating global vegetation models, Biogeosciences 10, 3313-3340 (2013)

. citations:37

DI Kelley, SP Harrison, IC Prentice: Improved simulation of fire-vegetation interactions in the Land surface Processes and eXchanges dynamic global vegetation model (LPX-Mv1), Copernicus Publications (2014)

. citations:8

T Kaminski, W Knorr, G Schürmann, M Scholze, PJ Rayner, S Zaehle, ...: The BETHY/JSBACH carbon cycle data assimilation system: experiences and challenges, Journal of Geophysical Research: Biogeosciences 118 (4), 1414-1426 (2013)

. citations:8

MJB Zeppel, SP Harrison, HD Adams, DI Kelley, G Li, DT Tissue, ...: Drought and resprouting plants, New Phytologist 206 (2), 583-589 (2015)

. citations:6

DI Kelley, SP Harrison: Enhanced Australian carbon sink despite increased wildfire during the 21st century, Environmental Research Letters 9 (10), 104015 (2014)

. citations:2

D Kelley, SP Harrison, IC Prentice: Implications of introducing realistic fire response traits in a Dynamic Global Vegetation Model, AGU Fall Meeting Abstracts 1, 06 (2013)

. citations:0

S Harrison, J Midgley, B Hoffmann, I Radford, C Nano, B Murphy10, ...: Using plant functional traits to predict ecosystem vulnerability to changing fire regimes, (NA)

. citations:0

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and
googleScholarGrab version no. 7332d69 extracted from Douglas Kelley `s google scholar on Mon 18 Jan 2016 16:08:26

Conference Papers

International Conference Presentations

Kelley, D. I., Harrison, S. P. and Prentice, I. C.: Implications of introducing realistic fire response traits in a Dynamic Global Vegetation Model, AGU Fall Meeting Abstracts, 1, p.6. Dec 2013.

Visits and Internal Presentations

Kelley, D. I., Harrison, S. P., Prentice, I. C. and Medlyn, B. E.: Modelling Australian Fire Regimes, Thesis completion seminar, Macquarie University, Ryde, Australia. Mar 2015

Kelley, D. I., Harrison, S. P. and Prentice, I. C.: The LPX fire-enabled Vegetation Model, visit to Centre for Environmental Risk Management of Bushfires, University of Wollongong, NSW, Australia. May 2013.

Kelley, D. I., Harrison, S. P., Prentice, I. C. and Medlyn B. : The effects of climate change on Australian fire regimes, Postgraduate supplementary conference, Macquarie University, Ryde, Australia. Nov 2012.

Kelley, D. I.: Development of lightning ignitions scheme in LPX-DGVM, Biosphere and Climate Dynamics brown bag seminars, Macquarie University, Ryde, Australia. Sep 2012.

Kelley, D. I.: Benchmarking vegetation and fire in LPX-DGVM, Biosphere and Climate Dynamics brown bag seminars, Macquarie University, Ryde, Australia. Mar 2012.

Kelley, D. I., Prentice, I. C., Wang, H., Wills, K. and Harrison, S. P.: A comprehensive benchmarking system for evaluating global vegetation models, Postgraduate supplementary conference, Macquarie University, Ryde, Australia. Nov 2011.

Kelley, D. I., Prentice, I. C., Wang, H., Wills, K. and Harrison, S. P.: A comprehensive benchmarking system for evaluating global vegetation models, Climate Futures Postgraduate Forum, Macquarie University, Ryde, Australia. Nov 2011.

Kelley, D. I.: Benchmark data-sets for assessing DGVM performance, Biosphere and Climate Dynamics brown bag seminars, Macquarie University, Ryde, Australia. Sep 2011.

Kelley, D. I., Harrison, S. P. and Prentice, I. C.: The effects of climate change on Australian fire regimes, Postgraduate supplementary conference, Macquarie University, Ryde, Australia. 17th Nov 2010.

Kelley, D. I.: Transient Biomization Scheme, course seminar for Msc Earth Systems Science, Department of Earth Sciences, University of Bristol, UK. 2 July 2008.

Kelley, D. I., Elena Counce: Forest Fire simulator, course seminar for Msc Earth Systems Science, Department of Earth Sciences, University of Bristol, UK. 19 Nov 2007.

Kelley, D I., Harrison, S. P.: Comparison of simulated fire regimes at the Last Glacial Maximum and for the Mid-Holocene with charcoal data, QUEST: Quantifying and Understanding the Earth System Open Science Conference and Annual Science Meeting, Mar 2008

Workshops and Consultancy Visits

University of Queensland, Brisbane, QL, Australia **Oct 2013**

Data Synthesis workshop for fire resilience and response traits}{Australian Centre for Ecological Analysis and Synthesis ACEAS

Fire response traits database

Macquarie University, Ryde, Australia **May 2013**

Workshop on construction of database on distribution of different resprouting traits in climate space, as part of the Australian Centre for Ecological Analysis and Synthesis (ACEAS) Working group ‘’.

Technical Assistance for Climate Change

Royal Society for the Conservation of Nature, Jordan **Oct 2009**

Report on Impacts of Future Climate Change on Vegetation, Fire, and Runoff in Jordan

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Training

Courses

Software Carpentry
Feb 2013

Programming philosophy, code structure and version control

Genses2Geoscience: Writing for journals
Aug 2012

Drafting and writing journal articles and research proposals

Genses2Geoscience: sql
Sep 2011

Database Construction using sql

Genses2Geoscience: Teaching in small groups
Aug 2011

Effective questioning, encouraging equal participation, and managing student behaviour.

Planning and writing journal articles
Nov 2009

Planning articles to fit journals

Awards

International Macquarie University Research Excellence Scholarship (iMQRES)

Macquarie University, Ryde, Australia **2010-2014**

Postgraduate award for completion of PhD

Post Graduate Research Fund (PGRF)

Macquarie University, Ryde, Australia **2013**

Competitive award to enhance postgraduate research experience. Funded attendance at the 2013 AGU fall conference in order to present DGVM development and future projection of fire regimes and terrestrial carbon stocks under climate change

Postgraduate conference - best presentation

Biological Sciences, Macquarie University, Ryde, Australia

Best presentation out of the departments 78 postgraduate students at the annual post-graduate conference. Awarded for presentation on a vegetation model benchmarking system}

Skills

Need to replace

Web Design

Assertively exploit wireless initiatives rather than synergistic core competencies.

Interface Design

Credibly streamline mission-critical value with multifunctional functionalities.

Project Direction

Proven ability to lead and manage a wide variety of design and development projects in team and independent situations.

My Cool Side Project

For items which don't have a clear time ordering, a definition list can be used to have named items.

These items can also contain lists, but you need to mind the indentation levels in the markdown source.

Second item.

Open Source

List open source contributions here, perhaps placing emphasis on the project names, for example **Linux Kernel** the , where you implemented multithreading over a long **node.js** weekend, or (with link) which was actually totally your idea...

Web Design

Assertively exploit wireless initiatives rather than synergistic core competencies.

Technical {#technical}

Expand on main

Programming

Fortran

C

C++

R

python

Matlab

VB

sql

Publishing

XHTML

CSS

PHP

Latex

Markdown

Software

GIMP

Scribus

Photoshop/Illustrator

Standard office/Open office

Other stuff

OS X

Windows XP/Vista

Linux

CVS / Subversion

git

Collaborations

Doug is a Postdoctoral Research Fellow working with the Climate And Forest Ecosystem Modelling and Biosphere and Climate Dynamic groups at Macquarie University. His research focuses on modelling the interactions between wildfire, climate and vegetation. In addition, he is also working on plant resource allocation strategies. He is particularly interested in ways vegetation resist and recover after fire, and the wider implications this has on the carbon cycle and hydrology.

Relevant Extra-Circular activity

Committee member responsible for Web-design, Communications, and social runners

Epping and District Athletics Clubs North Epping, Hornsby, NSW, Australia **Feb 2011-May 2015**

Website development www.eppingdac.com.au; designing, producing and distributing newsletter and e-publicity for local community running and athletics club

Student Union involvement Web-design, Communications, and social runners

University and Warwick and Bristol University **2002-2008**

Sabbatical year sitting on board of directors of Warwick Students Union responsible for the Student Advice and Welfare department; 3 years as charity trustee and 6 years on student council responsible for Science Faculty representation; committee posts on various student run sports clubs and societies including People and Planet, Student TV station, Student Support Groups, and running clubs

Digital Photography and Art

Open Univesity, UK **2002-2008**

Open University undergrad course in digital photography and image manipulation. See www.flickr.com/photos/doug_from_the_uk

Referees

Doug is a Postdoctoral Research Fellow working with the Climate And Forest Ecosystem Modelling and Biosphere and Climate Dynamic groups at Macquarie University. His research focuses on modelling the interactions between wildfire, climate and vegetation. In addition, he is also working on plant resource allocation strategies. He is particularly interested in ways vegetation resist and recover after fire, and the wider implications this has on the carbon cycle and hydrology.