

## CURRICULUM VITAE

### SALLY A. KEITH

Date of birth: 22<sup>nd</sup> March 1983

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#### EDUCATION

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- **PhD in Ecology** 2007 – 2010. “Impacts of environmental change on ecological communities”, Bournemouth University
- MSc in Primate Conservation 2004 - 2005. “Vocal diversity of Kloss’s gibbons (*Hylobates klossii*) in the Mentawai Islands, Indonesia”, Oxford Brookes University. Merit, thesis with Distinction
- BSc (Hons) in Zoology 2001 – 2004, University of Southampton. Upper 2<sup>nd</sup> class, 1<sup>st</sup> for honours thesis

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#### RESEARCH FUNDING (total received **£605,795** approx. after exchange rate)

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- **3,962,678 DKK**, VILLUM Foundation Young Investigator Programme, University of Copenhagen. “Revealing the role for species interactions in biogeography”. 2015 – 2018
- **45,300 DKK**, Carlsberg Foundation Conference Grant, “Med-finansiering af den første Internationale Makroøkologiske Konference i Europe”. Grant held jointly with Carsten Rahbek. 2015
- **3 years salary & \$30,000 AUD research expenses**, Postdoctoral Research Fellowship, ARC Center of Excellence for Coral Reef Studies. 2010 - 2013.
- £800, Travel Bursary, UK Resource Center for Women in SET. Apr 2010.
- £500, Travel Grant, Bournemouth University International Research & Conference Award. Mar 2010.
- Competitive Research Studentship. Bournemouth University, UK. 2007-2010.
- License Award, Cornell Lab. of Ornithology Award for Raven Sound Analysis Software. 2005.

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#### EMPLOYMENT

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- **Lecturer**, Lancaster Environment Centre, Lancaster University, UK. March 2017 – current.
- **Assistant Professor**, Center for Macroecology, Evolution & Climate (CMEC), Natural History Museum of Denmark, University of Copenhagen (UCPH), Denmark. Nov 2013 – Feb 2017.
- **Postdoctoral Research Fellow**, ARC Centre of Excellence for Coral Reef Studies, James Cook University, Australia. Jan 2011 – Nov 2013. Independent research fellow within Programme 2: Coral Reef Biodiversity.
- Research Development Officer, Bournemouth University, UK. 2006 – 2007.
- Assistant Manager (Acting Manager: July 2006), Cat Ba Langur Conservation Project (CBLCP), Viet Nam. 2006.

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 LEADERSHIP
 

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- **Editor** for *Global Ecology & Biogeography* (2015 onwards), *PeerJ* (2014-2016), *Ecography* (2013 -2015), Coral Traits database (coraltraits.org, responsible for biogeographic traits, 2014 onwards)
- **Lead Organiser of international conference on macroecology.** Joint between the British Ecological Society (BES), German, Swiss & Austrian Ecological Society (GfO), and CMEC. UCPH, Copenhagen, June 2015. ~125 attendees from 18 different countries.
- **Co-founder of BES Special Interest Group in Macroecology**, 2011 onwards
- Challenges in Science Leadership course, Barefoot Thinking Company, Plymouth University, UK, June 2015
- Young Investigator workshop, VILLUM Foundation, Copenhagen, April 2015
- Co-organiser of inaugural conference for BES Special Interest Group in Macroecology, London, UK, 2012
- **R User Group Leader:** CMEC 2014 onwards; ARC CoE Coral Reef Studies 2010 – 2013

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 TEACHING EXPERIENCE
 

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## Curriculum development &amp; exam design

- Macroecology & Community Ecology MSc course, UCPH, Denmark 2015
- Process-based modelling. Modelling Species Distribution Under Climate Change, intensive international PhD summer course, UCPH, Denmark, 2014-2016; CMEC internal course, Denmark, May 2015
- Introduction to R. CMEC internal course, Denmark, Nov 2014; ARC CoE Coral Reef Studies internal course, May 2012

## Teaching experience

- Global Change Biology LEC.144, BSc course, LEC, UK 2017
- **International Nature Conservation** PhD course, UCPH, Denmark 2016
- **Biodiversity and Climate Change** MSc course, UCPH, Denmark 2016
- **Macroecology & Community Ecology** MSc course, UCPH, Denmark 2014-2016
- **Process-based modelling.** Modelling Species Distribution Under Climate Change, intensive international PhD summer course, UCPH, Denmark, 2014-2016; CMEC internal course, Denmark, May 2015
- **Introduction to R.** CMEC internal course, Denmark, Nov 2014; ARC CoE Coral Reef Studies internal course, May 2012
- Macroecology and Biogeography (Bachelors), James Cook University, Australia, 2011 – 2013
- Conservation and Connectivity (Bachelors), Bournemouth University, UK, 2009 – 2010
- Various practical sessions including protected areas, statistics, geographical information systems (GIS), laboratory exercises & fieldwork (Bachelors), Bournemouth University, UK, 2008-2010

## Teaching training

- Introduction to **University Pedagogy course**, UCPH, Denmark. Mar 2015
- **Research Supervisors course**, James Cook University, Australia, June 2011
- Introduction to Learning & Teaching, Bournemouth University. Jan 2009
- Environmental Education module, Oxford Brookes University. 2004-2005

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 MENTORSHIP EXPERIENCE
 

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Supervision of **six Bachelors / Masters** students

- Bachelors students: Eleanor Moore (2016), Imperial College London & UCPH; Magnus Andreassen (2015), UCPH
- Masters students (or equivalent): Elizabeth Dent (upcoming), UCPH; Neil Maginnis (ongoing), UCPH; Theophilus Zhi En Teo (2015), James Cook University; Ida Marie Weldnigh Pedersen (2015), UCPH

Supervision of **four PhD students**

- Jamile de Souza (ongoing), University of São Paulo State & UCPH; Erika Woolsey (completed 2014), James Cook University
- Visiting international PhD students: Alex White, University of Chicago; Ed Roberts, James Cook University & Australian Institute of Marine Science

Examiner on two Bachelors theses, one Masters thesis, and Masters student lab reports

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 INVITED WORKSHOPS
 

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- Synthesising traits across fish, Center for Ocean Life, DTU Aqua, 2016
- Standards for model evaluation, EC COST Action Harmonizing Biodiversity Modelling (HarmBio), Portugal, 2016
- **Unifying marine and terrestrial biodiversity** at the interplay of macroecology, macrophysiology and macroevolution SDiv, Germany, Dec 2014
- **Coral Traits Workshop** MacQuarie University, Sydney, Australia, June 2014

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 INVITED TALKS
 

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- Keynote, Tropical Ecology Group of the BES, Lancaster, UK, March 2017
- Plenary, Association of Tropical Conservation Biology – Asia Pacific, China, March 2017 (declined)
- Symposium on “**Process-based approaches to macroecology**”, International Biogeography Society (IBS) Conference, USA, Jan 2017
- Symposium on “Causes and consequences of non-equilibrium in species distributions”, IBS Conference, USA, Jan 2017
- University of St. Andrews, Scottish Oceans Institute, Feb 2016
- Center for Ocean Life, DTU Aqua, Copenhagen, Denmark, Oct 2015
- Danish National Research Foundation site visit to the Center for Macroecology, Evolution & Climate, Copenhagen, Denmark, May 2015
- **Unifying Ecology Across Scales**, Gordon Research Conference, Maine, US, July 2014
- Public forum, ARC Centre of Excellence for Coral Reef Studies Annual Symposium, Fremantle, Australia. 2011
- International seminar series e.g., ARC Centre of Excellence for Coral Reef Studies, Australia; Centre for Ecology & Hydrology, UK; University of Reading, UK; Aarhus University, Denmark; University of QLD, Australia; University of the Philippines, Philippines

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**PUBLIC OUTREACH**


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## Selected activities

- **BES Science Slam** (invited participant), British Ecological Society, Edinburgh, UK. Dec 2015 (~150 attendees)
- **Science on Wheels**, 140 high school students, Natural History Museum of Denmark, Denmark. Oct 2015
- **Science Night** at the Natural History Museum of Denmark, Denmark. April 2015
- Scientists in Schools, Australia. 2012 – 2013
- Public Forum Invited speaker at ARC CoE Coral Reef Studies Symposium 2011 (~250 attendees, available online at [tinyurl.com/BurstingBiodiv](http://tinyurl.com/BurstingBiodiv))
- Winner of “My research in 3 minutes” competition at ARC CoE Coral Reef Studies 2011

## Formal science communication courses

- **Media Communication**, EConnect, James Cook University, Australia, Oct 2012
- Introduction to the Media, Science Media Centre, London, UK, Nov 2009

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**OTHER PROFESSIONAL ACTIVITIES**


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- Peer reviewer for journals including: *Nature*, *Science*, *Ecology*, *Global Ecology & Biogeography*, *Proceedings of the Royal Society B*, *Oikos*, *Methods in Ecology & Evolution*
- **Oral presentations** at scientific conferences including the Annual Meeting of the BES (2007 - 2015), International Biogeography Society (2015), International Coral Reef Society (2012, 2016), BES Macroecology Group conference (2012, 2014, 2015), European Ecological Federation (2012)
- CMEC **Outreach Committee**
- **Member of professional societies**: International Society for Reef Studies, International Biogeography Society, British Ecological Society
- CMEC Twitter account administrator 2015 - 2017
- Seminar series organiser for ARC CoE Coral Reef Studies Weekly 2012
- Postdoc committee to organise “Postdoc Day” at 2012 ARC CoE Symposium
- Board member Copenhagen ITF Taekwondo Club

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**KEY RESEARCH SKILLS**


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- **Analytical**: spatially-explicit statistical analysis, mixed effects modelling, process-based simulation modelling, model confrontation with empirical data, geographical information systems, network analysis and graph theory, hydrodynamic modelling with particle tracking, spectrographic analysis
- **Programming**: R software for statistical computing, MATLAB
- **Software**: R software for statistical computing, MATLAB, ArcGIS, IDRISI, MIKE (hydrodynamic modelling), Raven (acoustic analysis), Primer, Community Analysis Package, SPSS, Fragstats
- **Fieldwork & museum**: coral reef surveys (PADI Divemaster); intertidal rocky shore surveys; collection and processing of marine soft sediment samples; temperate water sub-tidal surveys (Seasearch observer); temperate vascular plant field surveys; electrofishing survey; bat box survey; tropical vegetation sampling; orang-utan nest surveys; primate vocalisation recording; behavioural observation and tracking of primates; curation of bird sterna and primate skin collections

## PUBLICATION LIST

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### PEER REVIEWED JOURNALS

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\* = student; citations from Google Scholar 22<sup>nd</sup> July 2016

#### Submitted

22. Baird, A.H., **Keith S.A.**, Woolsey, E.S., Yoshida, R., & Naruse, T. (submitted) Rapid high coral mortality in response to the doldrums on Iriomote, Japan. *Coral Reefs*
21. Queiroz, J.\*, **Keith, S.A.**, David, G.S., Brandão, H., Nobile, A.B., Paes, J.K., Souto, A.C., Lima, F.P., Silva, R.J., Henry, R. & Richardson, K.R. (submitted) Community structure of freshwater fish in relation to environmental variables in a dammed Brazilian waterway. *Fish & Fisheries*

#### In press

20. **Keith, S.A.** & Bull, J.W. (in press) Non-human culture affects species' capacity to respond to climate change driven range shifts. *Ecography* 10.1111/ecog.02481 [This paper is in the final stage of competition for the *Ecography Excellence in Ecology and Evolution Award (E4 Award)*]

#### Published

19. **Keith, S.A.**, Maynard, J.A., Edwards, A.J., Guest, J.R., Bauman, A.G., van Hooidek, R., Heron, S.F., Berumen, M., Bouwmeester, J., Piromvaragorn, S., Rahbek, C. & Baird, A.H. (2016) Coral spawning predicted by rapid seasonal rise in ocean temperature. *Proceedings of the Royal Society B* **283**:20160011 [citations 1]
18. Madin, J.S., Hoogenboom, M.O., Connolly, S.R., Darling, E., Falster, D., Huang, D., **Keith, S.A.**, Mizerek, T., Pandolfi, J.M., Putnam, H., & Baird, A.H. (2016) A trait-based approach to advance coral reef science. *Trends in Ecology & Evolution* **31**:419-428 [citations 1]
17. Madin, J.S., Andreasen, M.H.\*, Bridge, T., Connolly, S.R., Darling, E., Diaz, M., Falster, D., Franklin, E.C., Gates, R.D., Hoogenboom, M.O., Huang, D., **Keith, S.A.**, Kosnik, M.A., Kuo, C-Y., Lovelock, C.E., Luiz, O., Martinelli, J., Mizerek, T., Pandolfi, J.M., Pochon, X., Putnam, H., Roberts, T.E., Stat, M., & Baird, A.H. (2016) The Coral Trait Database. *Scientific Data* **3**:160017 [citations 1]
16. Jønsson, K.A., Tøttrup, A.P., Borregaard, M.K., **Keith, S.A.**, Rahbek, C., & Thorup, K. (2016) Tracking dispersal: from individual movement to community assembly and global range dynamics. *Trends in Ecology & Evolution* **31**:204-214 [citations 0]
15. Baird, A.H., Cumbo, V.R., Gudge, S., **Keith, S.A.**, Maynard, J.A., Tan, C-H. & Woolsey, E.S.\* (2015) Coral reproduction on the world's southern-most reef at Lord Howe Island, Australia. *Aquatic Biology* **23**:275-284 [citations 3]
14. **Keith, S.A.**, Woolsey, E.S.\* Madin, J.S., Byrne, M. & Baird, A.H. (2015) Differential establishment potential of species predicts a shift in coral assemblage structure across a biogeographic barrier. *Ecography* **38**(12):1225-1234 [Cover Article] [citations 9]
13. Woolsey, E.S.\*, **Keith, S.A.**, Byrne, M., Baird, A.H. (2015) Latitudinal variation in thermal tolerance breadth of early life stages of corals. *Coral Reefs* **34**(2):471-478 [citations 9]
12. **Keith, S.A.**, Kerswell, A., Bellwood, D.R & Connolly, S.R. (2014) Global diversity of marine macroalgae: environmental conditions explain less variation in the tropics. *Global Ecology & Biogeography* **23**(5):517-529 [Cover Article] [citations 17]

11. Diaz, A, **Keith, S.A.**, Newton, A.C., Bullock, J.M. (2013) Conservation implications of long-term change detected in the flora of lowland heaths. *Biological Conservation* **167**:325-333 [citations 9]
10. Hughes, T.P., Connolly, S.R. & **Keith, S.A.** (2013) Geographic range extents for Indo-Pacific scleractinian coral species. *Ecology* **94**(7):1659 [Data Paper] [citations 10]
9. **Keith, S.A.**, Baird, A.H., Madin, J.S., Hughes, T.P. & Connolly, S.R. (2013) Faunal breaks and species composition of Indo-Pacific corals: potential influence of plate tectonics, environment, and habitat distribution. *Proceedings of the Royal Society B: Biological Sciences* **280**(1763):20130818 [citations 35]
8. **Keith, S.A.** & Connolly (2013) Effects of diversity-dependent colonization-extinction dynamics on mid-domain effects. *Global Ecology and Biogeography*. **22**(7):773-783 [Cover Article] [citations 0]
7. **Keith, S.A.** Webb, T.J., Böhning-Gaese, K., Connolly, S.R., Dulvy, N.K., Eigenbrod, F., Jones, K.E., Price, T., Redding, D.W., Owens, I.P.F. & Isaac, N.J.B. (2012) What is macroecology? *Biology Letters* **8**:904-906 [citations 25]
6. Newton, A.C., Walls, R.M., Golicher, D., **Keith, S.A.**, Diaz, A. & Bullock, J.M. (2012) Structure, composition and dynamics of a calcareous grassland metacommunity over a 70-year interval. *Journal of Ecology* **100**(1):196-209 [citations 27]
5. **Keith S.A.**, Herbert, R.J.H., Norton, P, Hawkins, S.J. & Newton A.C. (2011) Individualistic species limitations of climate-induced range expansions generated by meso-scale dispersal barriers. *Diversity and Distributions* **17**(2):275-286 [citations 29]
4. **Keith, S.A.**, Newton, A.C., Morecroft, M.D., Golicher, D.J. & Bullock, J.M. (2011) Plant metacommunity structure remains unchanged during biodiversity loss in English woodlands. *Oikos* **120**:302-310 [citations 29]
3. **Keith, S.A.**, Newton, A.C., Morecroft, M.D., Bealey, C.E. & Bullock, J.M. (2009) Taxonomic Homogenization of Woodland Plant Communities over 70 Years. *Proceedings of the Royal Society B*. **276**(1672):3539-3544 [citations 79]
2. **Keith, S.A.** Newton, A.C., Herbert, R.J.H., Morecroft, M.D., & Bealey, C.E. (2009) Non-Analogous Community Formation in Response to Climate Change. *Journal for Nature Conservation* **17**:228-235 [citations 22]
1. Diaz, A., Green, I. & **Keith, S.A.** (2009) Restoration in the Face of Climate Change: A Case Study from the Dorset Heaths. *Ecological Restoration* **27**(3) [citations 2]

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 BOOK CHAPTERS
 

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2. Morecroft, M.D. & **Keith, S.A.** (2015) *Plant ecology as an indicator of climate and global change*. In: Climate change: Observed impacts on planet Earth 2<sup>nd</sup> Edition (ed. Letcher, T.). Elsevier. pp.297-306 [citations 5]
1. **Keith, S.A.**, Waller, M. S., & Geissmann, T. (2009). *Vocal diversity of Kloss's gibbons (Hylobates klossii) in the Mentawai Islands, Indonesia*. In Lappan, S. M. and Whittacker, D. (eds.), *The Gibbons: New Perspectives on Small Ape Socioecology and Population Biology (Developments in Primatology: Progress and Prospects)*. Springer, New York. p.51-72 [citations 7]