

# CURRICULUM VITAE

Jeffrey Hanson

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## RESEARCH INTERESTS

My research concerns the challenges involved in conserving biodiversity. I am interested in understanding how areas can be managed to achieve conservation objectives for minimal cost. In particular, I specialize in operationalizing ecological and evolutionary processes to develop plans for protected area systems that maximize the long-term persistence of biodiversity.

## EDUCATION

- 2013–2018 PhD, Biology, The University of Queensland, Australia (Advisors: Richard Fuller and Jonathon Rhodes, thesis: *Conserving evolutionary processes.*)
- 2011–2012 BS (Hons), First Class, The University of Queensland, Australia (Advisors: Steve Salisbury, Craig Franklin, Hamish Campbell, and Ross Dwyer, thesis: *Using stable isotopes to assess the relationship between body-size, habitat use and diet in estuarine crocodiles (Crocodylus porosus)*)
- 2007–2010 BS, Major in Ecology, The University of Queensland, Australia

## PROFESSIONAL POSITIONS

- 2018–present Postdoctoral researcher at CIBIO/InBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos da Universidade do Porto, Vairão, Portugal
- 2018 Freelance software developer contracted by Joe Bennett, University of Carleton
- 2012–2013 Research Assistant to Richard Fuller, The University of Queensland, Australia
- 2012–2013 Research Assistant to Jonathon Rhodes, The University of Queensland, Australia
- 2012 Casual Professional Staff, The School of Biological Sciences, The University of Queensland, Australia

## PUBLICATIONS

### *Journal articles*

- 2019      **Hanson JO**, Schuster R, Strimas-Mackey M, Bennett JR (in press) Optimality in prioritizing conservation projects. *Methods in Ecology & Evolution*, <https://doi.org/10.1111/2041-210X.13264>.
- Hanson JO**, Fuller RA, & Rhodes JR (2019) Conventional methods for enhancing connectivity in conservation planning do not always maintain gene flow. *Journal of Applied Ecology*, 56: 913–922.
- 2018      **Hanson JO**, Rhodes JR, Possingham HP & Fuller RA (2018) raptr: Representative and Adequate Prioritization Toolkit in R. *Methods in Ecology & Evolution*, 9: 320–330.
- 2017      **Hanson JO**, Rhodes JR, Riginos C & Fuller RA (2017) Environmental and geographic variables are effective surrogates for genetic variation in conservation planning. *Proceedings of the National Academy of Sciences of the United States of America*, 114: 12755–12760.
- Mather AT, **Hanson JO**, Pope LC & Riginos C (2017) Comparative phylogeography of two co-distributed but ecologically distinct rainbowfishes of far-northern Australia. *Journal of Biogeography*, 45: 127–141.
- 2016      Dhanjal-Adams KL, **Hanson JO**, Murray NJ, Phinn SR, Wingate VR, Mustin K, Lee JR, Allan JR, Cappadonna JL, Studds CE, Clemens RS, Roelfsema CM & Fuller RA (2016) Distribution and protection of intertidal habitats in Australia. *Emu*, 116: 208–214.
- Dudaniec RY, Worthington Wilmer J, **Hanson JO**, Warren M, Bell S & Rhodes JR (2016) Dealing with uncertainty in landscape genetic resistance models: a case of three co-occurring marsupials. *Molecular Ecology*, 25: 470–486.
- 2015      Auerbach NA, Wilson KA, Tulloch AI, Rhodes JR, **Hanson JO** & Possingham HP (2015) Effects of threat management interactions on conservation priorities. *Conservation Biology*, 29: 1626–1635.
- Bunton JD, Ernst AT, **Hanson JO**, Beyer HL, Hammill E, Runge CA, Venter O, Possingham HP & Rhodes JR (2015) Integrated planning of linear infrastructure and conservation offsets. In Weber, T, McPhee, MJ & Andersson RS (eds) *MODSIM 2015, 21st International Congress on Modelling and Simulation*. Modelling and Simulation Society of Australia and New Zealand, December 2015, pp. 1427–1433.
- Hanson JO**, Salisbury SW, Campbell HA, Dwyer RG, Jardine TD & Franklin CE (2015) Feeding across the food web: the interaction between diet, movement and body size in estuarine crocodiles (*Crocodylus porosus*). *Austral Ecology*, 40: 275–286.

Rabeb D, Othman DS, Essilfie AT, Hansbro PM, **Hanson JO**, McEwan AG & Kappler U (2015) Maturation of molybdoenzymes and its influence on the pathogenesis of non-typeable *Haemophilus influenzae*. *Frontiers in Microbiology*, 6: 01219.

Runge CA, Watson JEM, Butchart HM, **Hanson JO**, Possingham HP & Fuller RA (2015) Protected areas and global conservation of migratory birds. *Science*, 350: 1255–1258.

#### *Popular science articles*

2015      Behr J & **Hanson JO** (2015) Welcome to the Mapotron. *Decision Point*, **86**: 10–11.

### PEER REVIEW ACTIVITIES

I have reviewed submissions to following journals: *Austral Ecology*, *Conservation Letters*, *Diversity and Distributions*, *Global Change Biology*, *Journal of Applied Ecology*, and *PLoS ONE*, and *Proceedings of the Royal Society of London B: Biological Sciences*.

### PRESENTATIONS

#### *Conference presentations*

- 2018      **Hanson JO**, Schuster R, Morrell N, Strimas-Mackey M, Watts ME, Arcese P, Bennett JR, Possingham HP (2018) prioritizr: Systematic conservation prioritization in R. Oral presentation to UseR! 2018, Brisbane, Australia.
- 2016      **Hanson JO**, Rhodes JR, Possingham HP, Fuller RA (2016) RAPR: Representative and Adequate Prioritizations in R. Oral presentation to Society for Conservation Biology 4th Oceania Congress, Brisbane, Australia.
- 2014      **Hanson JO**, Rhodes JR, Fuller RA (2014) Conservation planning for intra-specific biodiversity using surrogates. Oral presentation to the Meeting of the Minds mini-conference at The University of Queensland, Brisbane, Australia.

## EDUCATIONAL ACTIVITIES

*Classroom Instruction, The University of Queensland, Australia*

2013–2015 Professional tutor to the “Field Ecology” course, coordinated by Myron Zalucki

*Workshop Instruction*

2017 *Use of Machine Learning in Conservation, Moving beyond just Maxent and SDMs* coordinated by Falk Huettmann at the 28th International Congress for Conservation Biology (ICCB), Cartagena, Colombia.

2015 *Geospatial Analysis in R* coordinated by Hawthorne Beyer, Rebbecca Runting and Jutta Beher at the Student Conference of Conservation Science, Australia.

*Smoothing the Marxan Flow with R* coordinated by Matthew Watts at the Student Conference of Conservation Science, Australia.

2013 *Introduction to Geospatial Analysis* coordinated by Hawthorne Beyer at The University of Queensland, Australia.

*Introduction to Spatial Data Analysis in R* workshop coordinated by Hawthorne Beyer at The University of Queensland, Australia.

2011 *Introducing R* coordinated by Simon Blomberg at The University of Queensland, Australia.

*Seminars*

2017 *Systematic conservation prioritization in R* presented to members of the Center for Biodiversity and Conservation Science at The University of Queensland, Australia.

2016 *Biodiversity processes in reserve-selection* presented to members of the Center for Biodiversity and Conservation Science at The University of Queensland, Australia.

*Scientific meetings and networking events*

2018 rOpenSci Unconference, Melbourne, Australia.

2017 R Unconference hosted by the Brisbane Users of R Group, Brisbane, Australia.

2016 rOpenSci Unconference, Brisbane, Australia.

## SOFTWARE

- oppr            An R package for prioritizing funding for threatened species recovery projects and pest management projects. Available at <https://CRAN.R-project.org/package=oppr>.
- prioritizr     An R package for designing and solving conservation planning problems. Available at <https://CRAN.R-project.org/package=prioritizr>.
- raptr          An R package for generating spatial prioritizations that capture within feature variation (e.g. intra-specific genetic variation). Available at <https://CRAN.R-project.org/package=raptr>.

## SCHOLARSHIPS AND AWARDS

- Compute resource allocation by the National eResearch Collaboration Tools and Resources (NeCTAR) project (2017)
- Postgraduate Travel Award Scholarship, The School of Biological Sciences, The University of Queensland, Australia (2016)
- Australian Postgraduate Award (APA) Scholarship (2013)