Matthew Rees

Applied Ecologist

Curriculum Vitae
December 2020

School of Biosciences, University of Melbourne
matthewreesearch.com
+61 412 560 534
matt.wayne.rees@gmail.com
@matt_w_rees
matt-w-rees
matthew-w-rees

Profile

I use quantitative methods to improve conservation monitoring, management and decision-making. I specialise in modelling population dynamics and species interactions, tending to focus on invasive species. I have extensive experience in using hierarchical models (namely occupancy and spatial capture-recapture methods), generalised linear and non-linear models and structured decision-making methods. I have extensive fieldwork experience, leading large teams of works in remote and rugged conditions, which motivates me to consider feasibility as well as socio-economic constraints. I'm particularly passionate about applying newly developed statistical methods to real-world datasets, as well as conducting transparent and collaborative science. I am currently finishing up my PhD with the *Quantitative and Applied Ecology group* while tackling the occasional, related contracting job.

Education

2017-present	**PhD (Conservation Biology)** Interactions between invasive predators and native prey	University of Melbourne
2013-2016	**Bachelor of Environmental Science (1st class Honours)** Prioritising invasive animal management in the Lake Eyre Basin, Australia	Queensland University of Technology

Professional Experience

2019-2020	**Ecologist (private contractor)** Training Indigenous rangers in fauna monitoring protocols and grant writing	Winda-mara Aboriginal Corporation, Treetec
2020-2020	**Research assistant** Designing fox density field surveys	University of Melbourne
2018-2020	**Demonstrator** Conservation Biology, Environmental Risk Assessment subjects	University of Melbourne

Publications

Reports

1. **MW Rees** (2020). Monitoring and managing critical weight range mammals in the indigenous protected areas of the world heritage Budj Bim cultural landscape. *A report prepared for the Victorian Government, Department of Environment, Land, Water and Planning*.

Peer-reviewed

1. **MW Rees**, J Carwardine, A Reeson and J Firn (2020). Rapidly assessing cobenefits to advance threat-management alliances. *Conservation Biology*. https://doi.org/10.1111/cobi.13490
2. **MW Rees**, JH Pascoe, BA Wintle, M Le Pla, EK Birnbaum and BA Hradsky (2019). Unexpectedly high densities of feral cats in a rugged temperate forest. *Biological Conservation*, 239, 108287. https://doi.org/10.1016/j.biocon.2019.108287

In peer-review

1. H Davies, Tiwi Land Rangers, **MW Rees**, D Stokeld, A Miller, G Gillespie and B Murphy. Variation in feral cat density between two large adjacent islands in Australia's monsoon tropics.
2. M Le Pla, EK Birnbaum, **MW Rees**, BA Hradsky, AR Weeks, A Van Rooyen and JH Pascoe. Genetic sampling and an activity index indicate contrasting lethal control outcomes.
3. A Stobo-Wilson… **MW Rees**… Sharing meals: predation on Australian mammals by the introduced European red fox compounds and complements predation by feral cats.
4. A Stobo-Wilson… **MW Rees**… Reptiles as food: predation of Australian reptiles by introduced red foxes compounds and complements predation by cats.
5. A Stobo-Wilson… **MW Rees**… Compounding and complementary carnivores: Australian bird species eaten by the introduced European red fox Vulpes vulpes and domestic cat Felis catus

6. A Stobo-Wilson… **MW Rees**… Counting the bodies: the numbers of, and spatial variation in, Australian reptiles, birds and mammals killed by two introduced predators.

In preparation for peer-review

1. **MW Rees**, JH Pascoe, BA Wintle, A Robley, M Le Pla, EK Birnbaum and BA Hradsky. Invasive mesopredator release: foxes can limit feral cat density.
2. **MW Rees**, A Robley, BA Hradsky, BA Wintle, JH Pascoe and N Golding. Modelling spatio-temporal species interactions using generalised additive models.
3. **MW Rees**, BA Hradsky, BA Wintle, JH Pascoe & A Robley. A dynamic multi-species occupancy model of invasive predators and native prey.
4. J Bourne, A Basu & **MW Rees**. Automating camera-trap study workflows with performance machine learning models: how does accuracy impact ecological inference?

Grants and awards

2020	University of Melbourne, School of Biosciences, Jasper Loftus-Hills award	$2.25K
2020	University of Melbourne, School of Biosciences, travel grant	$2K
2020	Ecological Society of Australia, Hoslworth research endowment	$7.5K
2019	Ecological Society of Australia, Hoslworth research endowment	$6.75K
2018	Conservation Ecology Centre student scholarship	$5K
2017	Victorian Environmental Assesment Council, Bill Borthwick scholarship	$2K
2017	Victorian Government, Parks Victoria research partners program (co-investigator)	$20K
2017	Victorian Government, Department of Land, Environment, Land, Water and Planning research grant	$15K
2017	Victorian Government, Department of Land, Environment, Land, Water and Planning, PhD top-up scholarship	$15K
2017	Australian federal government, RTP PhD scholarship	$98K
2016	Commonwealth Scientific and Industrial Research Organisation, honours top-up scholarship	$10K
2015	University of Wollongong, undergraduate research scholarship	$7.2K

Presentations

- Australian Wildlife Management Society (virtual), December 2020. *Drivers of feral cat density and spatio-temporal behaviour*.
- Ecological Society of Australia (virtual), December 2020. *Drivers of feral cat density and spatio-temporal behaviour*.
- Australian Mammal Society (virtual), November 2020. *Drivers of feral cat density and spatio-temporal behaviour*.
- International Statistical Ecology Conference (virtual), June 2020. *Using spatial mark-resight and GAMs to infer predator interactions*.
- Guest lecture, University of Melbourne, Australian Wildlife Biology, May 2020, *Invasive mammals in Australia*.
- Ecological Society of Australia, Launceston, November 2019, *Does fox control increase feral cat population density?*
- Wimmera Biodiversity Seminar, Rupanyup, September 2019, *Monitoring predators and prey in south-west VIC*.
- Otway Threatened Species Forum, Geelong, August 2019, *Monitoring predators and prey in the Otways* .
- Victorian Biodiversity Conference, Melbourne, February 2019, *Prioritising invasive animal management in the Lake Eyre Basin to benefit both threatened species and agriculture*.
- Ecological Society of Australia, Brisbane, November 2018, *Modelling invasive predator density in mesic forests*.
- Otway Threatened Species Forum, Geelong, August 2018, *How many feral cats are in the Otway Ranges?*
- Mathematics of Biological Systems Symposium, Melbourne, April 2018, *Integrating co-benefits into the cost-effective prioritisation of conservation strategies*.
- Victorian Biodiversity Conference, Melbourne, February 2018, *How many cats are in the Otways?*
- Environmental Institute of Australia & New Zealand conference, Brisbane, August 2017, *Building alliances between the agriculture and conservation sectors*.

Media

09/12/2019	Radio interview	ABC Melbourne	Invasive predators interactions
20/09/2019	Television segment feature	TF1 French National News	Invasive animals in Australia
08/08/2019	Radio interview	3AW	Invasive predators in south-west VIC
08/08/2019	Newspaper article (front page)	Geelong Advertiser	Invasive predators in south-west VIC
07/08/2019	Radio interview	ABC South West Victoria	Invasive predators in south-west VIC
13/03/2019	Newspaper article	Colac Herald	Feral cat density in the Otway Ranges
11/03/2019	Radio interview	ABC Melbourne	Feral cat density in the Otway Ranges
11/03/2019	Live TV interview	ABC news	Feral cat density in the Otway Ranges
10/03/2019	Online news article	ABC news	Feral cat density in the Otway Ranges
10/03/2019	Radio interview	ABC Ballarat	Feral cat density in the Otway Ranges