# Matthew Rees

Quantitative Ecologist

**Curriculum Vitae**
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## Profile

I use quantitative methods to improve the monitoring and management of threatened and invasive species. My expertise lies in predator ecology, as well as modelling population dynamics and animal interactions using hierarchical models (namely spatial capture-recapture, occupancy-detection and generalised additive models). I apply advanced statistical models to real-world datasets, at spatial scales relevant to managers. My extensive fieldwork experience motivates me to explicitly account for landscape context, feasibility and socio-economic constraints in my research. Currently, I am nearing completion of a PhD with the *Quantitative and Applied Ecology group*. My PhD thesis details the interactions between invasive red foxes and feral cats in mesic environments, set against a backdrop of intensive fox control.

## Education

2017-present **PhD (Conservation Biology)** — University of Melbourne
Interactions between invasive predators and native prey.

2013-2016 **Bachelor of Environmental Science (1st class Honours)** — Queensland University of Technology
Prioritising invasive animal management for conservation and agriculture.

## Professional Experience

2019-2020 **Ecologist (private contractor)** — Winda-mara Aboriginal Corporation
Training Indigenous Rangers in wildlife survey methods

2020-2020 **Research assistant** — University of Melbourne, Treetec
Designing predator field surveys and grant writing.

2018-2020 **Teaching assistant** — University of Melbourne
Conservation Biology, Australian Wildlife Biology and Environmental Risk Assessment subjects.

## Publications

### Peer-reviewed

1. A Stobo-Wilson… **MW Rees**…(in press). Reptiles as food: predation of Australian reptiles by introduced red foxes compounds and complements predation by cats. *Wildlife Research*.
2. H Davies, Tiwi Land Rangers, **MW Rees**, D Stokeld, A Miller, G Gillespie and B Murphy (in press). Variation in feral cat density between two large adjacent islands in Australia's monsoon tropics. *Pacific Conservation Biology*.
3. **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
4. **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. 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.
2. A Stobo-Wilson… **MW Rees**… Sharing meals: predation on Australian mammals by the introduced European red fox compounds and complements predation by feral cats.
3. 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.
4. 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.

### 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*.

## Grants and awards

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| 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

- Evans River K-12 Community School, March 2021. *My experience in conservation science*.
- 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

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|---|---|---|---|
| 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 |

## Service

- Peer-reviewer (*Conservation Biology*, *Wildlife Research*, *Austral Ecology*, *Australian Mammalogy*)
- Treasurer, BioSciences Postgraduate Society (2019-2020)
- Coding club and social media contributor with QAECO lab group
- Ecological Society of Australia award judging panel (2020)

## References

**Prof. Brendan Wintle** (PhD supervisor)
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**Dr Bronwyn Hradsky** (PhD supervisor)
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**Dr Alan Robley** (PhD supervisor)
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