

Matthew J Grainger

Researcher

*Wildlife, Uncertainty, Evidence Synthesis, Decision
Models*

About me

I am an ecologist, with research interests in how we use knowledge to better inform decision making in species conservation (i.e. “Evidence-based decision making”). I develop opensource tools (in R and Shiny) that help people gather information robustly in a transparent way, interact with that information and make inference from it.

I am currently working on several projects that are fundamentally about how we make open research approaches (i.e. sharing data, sharing code, sharing best practice) as an integrated part of the workflow for biodiversity researchers and how we can take this open research and use it to help decision-makers find optimal solutions.

Education

1994 - 1997 **BSc (Hons) in Zoology**, Newcastle University, UK.

2004 - 2005 **MSc in Conservation & planning**, University of Pretoria, South Africa.

2008 - 2012 **PhD Zoology**, University of Pretoria, South Africa.

Employment history

2021– **Researcher**, NINA, Trondheim, Norway

2019–2021 **Postdoctoral Fellow**, NINA, Trondheim, Norway

2014–2019 **Postdoctoral Research Associate**, Newcastle University, UK

2013–2014 **Postdoctoral Research Associate-Research Impact**, Newcastle University, UK

2011–2012 **Conservation Research and Support Officer**, World Pheasant Ass., Newcastle, UK

2005–2006 **Research Co-ordinator**, Frontier-Tanzania, Tanzania

R packages

1. Haddaway, N., Grainger, M., & Gray, C. (2021). *Citationchaser: Perform forward and backwards chasing in evidence syntheses*.
2. Haddaway, N., Feierman, A., Grainger, M., Gray, C., Tanriver-Ayder, E., Dhaubanjari, S., & Westgate, M. (2019). *Visualisation and mapping for datasets from systematic reviews and maps*.
3. Gray, C., Grainger, M., & Haddaway, N. (2021). *Sysrevdata: Methods for designing*

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multifunctional, machine readable systematic review and map databases.

R packages in development

1. Haddaway, N., Grainger, M., & Gray, C. (2021). *Citationchaser: Perform forward and backwards chasing in evidence syntheses.*
2. Haddaway, N., Feierman, A., Grainger, M., Gray, C., Tanriver-Ayder, E., Dhaubanjari, S., & Westgate, M. (2019). *Visualisation and mapping for datasets from systematic reviews and maps.*
3. Gray, C., Grainger, M., & Haddaway, N. (2021). *Sysrevdata: Methods for designing multifunctional, machine readable systematic review and map databases.*

Publications

- 2021 **Novel tools and methods for designing and wrangling multifunctional, machine-readable evidence synthesis databases**, NR Haddaway, CT Gray, M Grainger, Environmental Evidence.
- 2021 **What is the evidence available to support our knowledge about threats to the conservation of Galliformes in the Greater Himalaya?**, G Gupta, M Grainger, JC Dunn, R Sanderson, PJK McGowan, bioRxiv.
- 2021 **Training future generations to deliver evidence-based conservation and ecosystem management**, H Downey, T Amano, M Cadotte, CN Cook, SJ Cooke, NR Haddaway, ..., Ecological Solutions and Evidence.
- 2020 **Evidence synthesis for tackling research waste**, MJ Grainger, FC Bolam, GB Stewart, EB Nilsen, Nature ecology & evolution.
- 2020 **Hunters as citizen scientists: Contributions to biodiversity monitoring in Europe**, B Cretois, JDC Linnell, M Grainger, EB Nilsen, JK Rød, Global Ecology and Conservation.
- 2020 **Food waste reduction in supply chains through innovations: a review**, L Aramyan, M Grainger, K Logatcheva, S Piras, M Setti, G Stewart, ..., Measuring Business Excellence.
- 2020 **Occupancy-based monitoring of ungulate prey species in Thailand indicates population stability, but limited recovery**, W Phumanee, R Steinmetz, R Phoonjampa, T Bejraburnin, M Grainger, ..., Ecosphere.
- 2020 **Conservation decision-making under uncertainty: Identifying when to reintroduce tiger *Panthera tigris* to Cambodia**, TNE Gray, MJ Grainger, R Grosu, Conservation Science and Practice.

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- 2020 **Discrete event simulation; machine learning; Bayesian networks; agent-based modelling; and mass balance estimation**, *C Kandemir, C Reynolds, M Verma, M Grainger, G Stewart, S Righi, ...*, Routledge Handbook of Food Waste.
- 2020 **On a wing and a prayer: limitations and gaps in global bat wing morphology trait data**, *M Crane, I Silva, MJ Grainger, GA Gale*, bioRxiv.
- 2019 **Using the value of information to improve conservation decision making**, *FC Bolam, MJ Grainger, KL Mengersen, GB Stewart, WJ Sutherland, ...*, Biological Reviews.
- 2019 **Is planting trees the solution to reducing flood risks?**, *J Carrick, MSAB Abdul Rahim, C Adjei, HHH Ashraa Kalee, SJ Banks, ...*, Journal of Flood Risk Management.
- 2019 **EviAtlas: a tool for visualising evidence synthesis databases**, *NR Haddaway, A Feierman, MJ Grainger, CT Gray, E Tanriver-Ayder, ...*, Environmental evidence.
- 2019 **Using remotely sensed and climate data to predict the current and potential future geographic distribution of a bird at multiple scales: the case of *Agelastes meleagrides*, a . . .**, *B Freeman, D Jiménez-García, B Barca, M Grainger*, Avian Research.
- 2019 **Offshore refuges support higher densities and show slower population declines of wintering Ruddy Turnstones *Arenaria interpres***, *MJ Whittingham, AJ McKenzie, RM Francksen, D Feige, T Cadwallender, ...*, Bird Study.
- 2019 **Integrated model of consumer behaviours in relation to food waste: Behavioural economics: D4. 4 Linking Bayesian and agent-based models to assess consumer food waste**, *M Grainger, S Piras, S Righi, M Setti, G Stewart, M Vittuari*, Refresh.
- 2019 **Need for transparent and repeatable conservation frameworks: reply to Child et al. 2019**, *M Grainger, EB Nilsen*.
- 2019 **Lower levels of human disturbance correspond with longer-term persistence of Endangered Green Peafowl *Pavo muticus* populations**, *N SUKUMAL, MJ GRAINGER, T SAVINI*, Bird Conservation International.

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- 2018 **An imperfect vision of indivisibility in the Sustainable Development Goals**, *PJK McGowan, GB Stewart, G Long, MJ Grainger*, Nature Sustainability.
- 2018 **Model selection and averaging in the assessment of the drivers of household food waste to reduce the probability of false positives**, *MJ Grainger, L Aramyan, S Piras, TE Qusted, S Righi, M Setti, M Vittuari, ...*, PloS one.
- 2018 **Drivers of existing and emerging food safety risks: Expert opinion regarding multiple impacts**, *H Kendall, G Kaptan, G Stewart, M Grainger, S Kuznesof, P Naughton, ...*, Food Control.
- 2018 **The use of systems models to identify food waste drivers**, *MJ Grainger, L Aramyan, K Logatcheva, S Piras, S Righi, M Setti, ...*, Global food security.
- 2018 **Conservation status of phasianidae in Southeast Asia**, *MJ Grainger, PJ Garson, SJ Browne, PJK McGowan, T Savini*, Biological conservation.
- 2018 **Socio-economic, technological and environmental drivers of spatio-temporal changes in fishing pressure**, *F Stephenson, AC Mill, CL Scott, GB Stewart, MJ Grainger, NVC Polunin, ...*, Marine Policy.
- 2018 **Spatial distribution of display sites of Grey Peacock-pheasant in relation to micro-habitat and predators during the breeding season**, *S Thunhikorn, MJ Grainger, PJK McGowan, T Savini*, Avian Research.
- 2017 **Informing decisions on an extremely data poor species facing imminent extinction**, *M Grainger, D Ngoprasert, P McGowan, T Savini*, Oryx.
- 2017 **The jury is still out on social media as a tool for reducing food waste a response to Young et al.(2017)**, *MJ Grainger, GB Stewart*, Resources, Conservation and Recycling.
- 2017 **Food Waste Reduction in Supply Chains Through Innovations: What Factors Affect the Decision to Adopt Innovations**, *LH Aramyan, MJ Grainger, K Logatcheva, S Piras, S Righi, M Setti, ...*, The.
- 2017 **D4. 3-Model integration: integrated socio-economic model on food waste**, *M Grainger, G Stewart, S Piras, S Righi, M Setti, M Vittuari, LH Aramyan*, REFRESH.

- 2016 **D4. 2-Model development and data protocol**, *M Grainger, G Stewart, S Piras, S Righi, M Setti, M Vittuari, LH Aramyan*, REFRESH.
- 2016 **Assessing the population of grey peacock-pheasant (*Polyplectron bicalcaratum*) in a Southeast Asian conservation landscape**, *S Thunhikorn, MJ Grainger, PJK McGowan, T Savini*, RAFFLES BULLETIN OF ZOOLOGY.
- 2016 **Methods used to survey avian species and their potential for surveying ground-dwelling birds in Asia**, *S Thunhikorn, MJ Grainger, PJK McGowan, T Savini*, Forktail.
- 2016 **A review of methods used to survey avian species and their potential for surveying ground-dwelling birds in Asia**, *S Thunhikorn, M Grainger, P McGowan*, Newcastle University.
- 2016 **Assessing the population status of Grey Peacock-pheasant (*Polyplectron bicalcaratum*) in Huai Kha Khaeng, a key conservation landscape in Southeast Asia**, *S Thunhikorn, MJ Grainger, PJK McGowan, T Savini*, Raffles Bulletin of Zoology.
- 2015 **An IUCN situation analysis of terrestrial and freshwater fauna in West and Central Africa**, *DP Mallon, M Hoffmann, MJ Grainger, F Hibert, N Van Vliet, ...*, Occasional paper of the IUCN species survival commission.
- 2015 **Analyse de situation de l’UICN concernant la faune terrestre et d’eau douce en Afrique centrale et de l’Ouest**, *FHA Aalen, MJ Grainger, F Hibert, M Hoffmann, DP Mallon, ...*, IUCN.
- 2015 **Can Non-Native Species Explain Patterns of Convergence and Deviation in Regenerating Coastal Dune Forest?**, *M Grainger, R van Aarde*, Ecological Restoration.
- 2013 **The role of canopy gaps in the regeneration of coastal dune forest**, *MJ Grainger, RJ Van Aarde*, African Journal of Ecology.
- 2013 **METHOD FOR THE ASSESSMENT OF PRIORITIES FOR INTERNATIONAL SPECIES CONSERVATION (MAPISCO)**, *M Grainger, P McGowan, A McKenzie, J Minderman, JP Rodriguez, ...*
- 2012 **Is succession-based management of coastal dune forest restoration valid?**, *MJ Grainger, RJ Van Aarde*, Ecological Restoration.

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- 2012 **Galliformes science and species extinctions: what we know and what we need to know**, *PJK McGowan, LL Owens, MJ Grainger*, Animal Biodiversity and Conservation.
- 2012 **Where is the Evidence for Assessing Evidence-Based Restoration? Comments on Ntshotsho et al.(2010)**, *RAR Guldemon, MJ Grainger, MJ Trimble*, Restoration Ecology.
- 2011 **Landscape composition influences the restoration of subtropical coastal dune forest**, *MJ Grainger, RJ van Aarde, TD Wassenaar*, Restoration Ecology.
- 2011 **An evaluation of coastal dune forest restoration in northern KwaZulu-Natal, South Africa**, *MJ Grainger*, University of Pretoria.
- 2011 **Resilience of the medicinal plant community of rehabilitating coastal dune forests, KwaZulu-Natal, South Africa**, *MJ Grainger, RJ Van Aarde*, Wiley-Blackwell.
- 2010 **The influence of electric fences on large mammal movements in the Kilombero Valley, Tanzania**, *C Bonnington, M Grainger, S Dangerfield, E Fanning*, African Journal of Ecology.
- 2010 **Evidence for local declines in Tanzania's puku antelope (*Kobus vardonii* Livingstone, 1857) population between 1999 and 2003**, *C Bonnington, MD Steer, J Lamontagne-Godwin, N Owen, M Grainger*, African Journal of Ecology.
- 2005 **Landscape heterogeneity and the use of space by elephants in the Kruger National Park, South Africa**, *M Grainger, R Van Aarde, I Whyte*, African Journal of Ecology.