Deon **Roos**

SENIOR STATISTICAL ECOLOGIST

Animal & Plant Health Agency, York

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I am a statistical biologist with experience and passion in teaching statistics, statistical consulting and developing statistical methodology for research. I have worked on a variety of research questions and data ranging from observational to experimental, empirical to theoretical, field based to lab-based. I am a proponent about scientific integrity, open data and code, and version control; This CV is version controlled and compiled with code.

Employment

Senior Statistical Ecologist
Sand Hutton, England

ANIMAL & PLANT HEALTH AGENCY
May 2022 –> Present

- Consulting on study design, data prepration, analysis (and its limitations) and interpretation from a range of fields (e.g. sociology, fertility control) with teams of varying quantitative ability.
- Conveying analysis and results to colleagues to ensure robust understanding of the approach and limitations. Commended by both management and colleagues for my ability to do so.
- Analysis of data intended to directly inform policy, including the creation of collaborations to extend bespoke statistical methods for new applications.
- Statistical supervision/consulting for two postgraduate students.
- Experienced and comfortable in prioritising amongst multiple tasks and working to short deadlines.

Teaching Fellow
Aberdeen, Scotland

UNIVERSITY OF ABERDEEN
December 2021 –> May 2022

- Course coordinator for 'ZO4541: Wildlife Conservation and Management' teaching complex statistical methods.
- Reappointed following the success of the course in the previous year.
- The course was highly commended by both students and staff. There was a particularly pronounced increase in positive student evaluations.
- E.g. 92% of students returned 'Totally' and the remaining 8% scoring 4 out of 5 when asked if 'Teaching was effective'.
- A representative comment in the student evaluation read: 'I wish ever[y] lecturer I had was as dedicated to their students as Deon is'
- The course was delivered fully online with every attempt made to ensure the student experience was not hindered.

Research Fellow
Aberdeen, Scotland

UNIVERSITY OF ABERDEEN
June 2021 –> February 2022

- Postdoc researcher as part of an international collaboration addressing the management of species in South America.
- Involved in multiple projects, ranging from study design for genetic sampling, abundance estimation of species using novel methods, developing simulations to test control strategies.
- Commended by colleagues for effective communication of complex matters.

Teaching Fellow
Aberdeen, Scotland

UNIVERSITY OF ABERDEEN
December 2020 –> May 2021

- As above.

Operating Department Support Worker
Elgin, Scotland

NHS GRAMPIAN
2008 –> 2012

- Non-sterile assistant in surgical procedures.

Education

University of Aberdeen

PhD ECOLOGY: POPULATION DYNAMCIS OF A CYCLICAL RODENT CROP PEST
2016 –> 2021

- Chapter 1: Characterizing the crop damage to pest density relationship with a fluctuating rodent population in NW Spain.
- Chapter 2: Roos et al., (2019).
- Chapter 3: Roos et al., (2022).
- Chapter 4: Does density, in addition to dispersal, influence the speed at which growth rate synchronises across space?

University of Aberdeen

BSc (HONS) FIRST CLASS IN ZOOLOGY
2012 –> 2016

Awards & Funding

Best Student Presentation *University of Aberdeen*

Title: Travelling waves as a form of spatio-temporal asynchrony *2019*

Best Presentation *Iberian Vole Workshop, Porto*

Title: Spatio temporal asynchrony in a cyclic vole species *2019*

Sir Maitland Mackie Scholarship *University of Aberdeen*

Awarded funds for research activities in agricultural setting *2017*

Zoology Award *University of Aberdeen*

Awarded the 'Outstanding BSc Zoology student' prize *2016*

People's Trust for Endangered Species Summer Internship

Awarded funds to carry out additional research following BSc thesis *2016*

Carnegie Summer Scholarship

Awarded funds to carry out data collection as part of BSc thesis *2015*

Publications

From pattern to process? Dual travelling waves, with contrasting propagation speeds, best describe a self-organised spatio-temporal pattern in population growth of a cyclic rodents. *Ecology Letters 25(9): 1986-1998*

Roos D., Camiñero-Saldana C., Elston D., Mougeot F., Garcia-Ariza M.C., Arroyo B., Luque-Larena J.J., Rojo-Revilla F.J., Lambin X. *2022*

• https://doi.org/10.1111/ele.14074

Surface Characterisation of Kolk-Boils within Tidal Stream Environments Using UAV Imagery. *Journal of Marine Science and Engineering, 9(5): 484*

Slingsby J., Scott B.E., Kregting L., McIlvenny, Wilson J., Couto A., Roos D., Yanez M., Williamson B.J. *2021*

• https://doi.org/10.3390/jmse9050484

Unintentional effects of environmentally-friendly farming practices: Arising conflicts between zero-tillage and a crop pest, the common vole (Microtus arvalis) *Agriculture, Ecosystems & Environment, 272:105-113*

Roos D., Camiñero-Saldana C., Arroyo B., Mougeot F., Luque-Larena J.J., Lambin X. *2019*

• https://doi.org/10.1016/j.agee.2018.11.013

Intro2R *Online*

Douglas A., Roos D., Couto A., Mancini F., Lusseau D. *2020*

• Author of Chapter 5, Graphics with ggplot2. https://intro2r.com/
• Intro2R has accumulated 400,000 total views, with ca. 20,000 unique views per month at the time of writing

All quiet on the front; A lack of evidence for perturbation following badger culling *Intended for 'Ecology'*

Roos, D., Cox, R., Smith, G.C., DeLahay, R. *In prep*

Evidence based policy; A need for the reevaluation of legal requirements for game bird release in proximity to protected sites *Intended for 'Journal of Ecology'*

Roos, D., Coats, J., Warren, D., Parrot, D. *In prep*

Contributions to academic life

Data visulation using ggplot2. *University of Aberdeen*

Aberdeen Study Group *2017*

• Workshop explaining the underlying principles, and implementation of, the ggplot2 R package.

Introduction to linear modelling. *University of Aberdeen*

Aberdeen Study Group *2019*

• Workshop on both the theory behind, and implementation, of linear models aimed at PGT level. Particular emphasis was given to understanding what 2-way interaction coefficients were.

The confounding of causal inference. *University of Aberdeen*

Aberdeen Study Group *2021*

• Lecture outlining how relationships become confounded (e.g. collider bias) and how these can (or cannot) be accounted for either through study design or in analysis (via the backdoor criterion). Brief workshop used simulated confounded data to demonstrate the use of the backdoor criterion.

Honours and MSc project mentor.   *University of Aberdeen*

UNIVERSITY OF ABERDEEN   *2018*

- Provided support for various students during my time at Aberdeen, from Honour's projects to Master's projects, both within and outwith my research group.

JNCC intern.   *Joint Nature Conservancy Council*

EASTBIO DTP INTERNSHIP   *2019*

- Developed a multi-response Bayesian model in an attempt to predict life history traits of data poor species.

Peer reviewer for various scientific journals and government reports.   *Online*

PEER REVIEWER   *Ongoing*

- E.g. Agriculture, Ecosystems & Environment, Journal of Pest Science

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