

# July Pilowsky

DISEASE ECOLOGIST · ECOLOGICAL MODELER · OPEN SCIENCE SOFTWARE DEVELOPER

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## Employment

### Cary Institute of Ecosystem Studies

Millbrook, NY, USA

POSTDOCTORAL SCIENTIST

2023 - Present

- Research on the ecology of infectious disease at the human-wildlife interface.
- Development of [epizootic](#) R package for process-explicit spatial models of disease.

## Education

### University of Copenhagen & University of Adelaide

Copenhagen, DK; Adelaide, AU

DOCTOR OF PHILOSOPHY (BIOLOGY)

2019 – 2024

- Thesis title: Revealing ecological processes of range dynamics through space and time
- Supervisors: Dr. Damien FORDHAM and Dr. Carsten RAHBK

### Tufts University

Medford, MA, USA

MASTER OF SCIENCE (BIOLOGY)

2013 – 2017

- Thesis title: The behavioral ecology of a wasp invasion
- Supervisor: Dr. Philip STARKS

### Columbia University

New York, NY, USA

BACHELOR OF ARTS (ECOLOGY, EVOLUTION & ENVIRONMENTAL BIOLOGY)

2008 – 2012

## Publications

### First-author publications:

- 7 MILLENNIAL PROCESSES OF POPULATION DECLINE, RANGE CONTRACTION AND NEAR EXTINCTION OF THE EUROPEAN BISON 2022  
*J. A. Pilowsky, S. C. Brown, B. Llamas, A. L. van Loenen, R. Kowalczyk, E. Hofman-Kamińska, N. H. Manaseryan, V. Rusu, M. Križnar, C. Rahbek, and D.A. Fordham* *Proceedings of the Royal Society B*
- 6 SIMULATIONS OF HUMAN MIGRATION INTO NORTH AMERICA ARE MORE SENSITIVE TO DEMOGRAPHY THAN CHOICE OF PALAEOCLIMATE MODEL 2022  
*J. A. Pilowsky, A. Manica, S. Brown, C. Rahbek, and D. A. Fordham* *Ecological Modelling*
- 5 RANGE AND EXTINCTION DYNAMICS OF THE STEPPE BISON IN SIBERIA: A PATTERN-ORIENTED MODELLING APPROACH 2022  
*J. A. Pilowsky, S. Haythorne, S. C. Brown, M. Krapp, E. Armstrong, B. W. Brook, C. Rahbek, and D. A. Fordham* *Global Ecology & Biogeography*
- 4 PROCESS-EXPLICIT MODELS REVEAL THE STRUCTURE AND DYNAMICS OF BIODIVERSITY PATTERNS 2022  
*J. A. Pilowsky, R. K. Colwell, C. Rahbek, and D. A. Fordham* *Science Advances*
- 3 INCORPORATING THE TEMPORAL AUTOCORRELATION OF DEMOGRAPHIC RATES INTO STRUCTURED POPULATION MODELS 2019  
*J. A. Pilowsky and J. P. Dahlgren* *Oikos*
- 2 DISPLACEMENT AND REPLACEMENT IN REAL TIME: POLISTES DOMINULA'S IMPACT ON P. FUSCATUS IN THE NORTHEASTERN U.S. 2018  
*J. A. Pilowsky and P. T. Starks* *Biological Invasions*
- 1 SOCIAL CONTEXT AND THE LACK OF SEXUAL DIMORPHISM IN SONG IN AN AVIAN COOPERATIVE BREEDER 2013  
*J. A. Pilowsky and D.R. Rubenstein* *Animal Behaviour*

### N-author publications:

4	PROCESS-EXPLICIT MODELS REVEAL PATHWAY TO EXTINCTION FOR WOOLLY MAMMOTH USING PATTERN-ORIENTED VALIDATION	2022
	<i>D. A. Fordham, S. C. Brown, H. R. Akçakaya, B. W. Brook, S. Haythorne, A. Manica, K. T. Shoemaker, J. J. Austin, B. Blonder, J. A. Pilowsky, C. Rahbek, and D. Nogues-Bravo.</i>	<i>Ecology Letters</i>
3	USING PALEO-ARCHIVES TO SAFEGUARD BIODIVERSITY UNDER CLIMATE CHANGE	2020
	<i>D. A. Fordham, S. T. Jackson, S. C. Brown, B. Huntley, B. W. Brook, D. Dahl-Jensen, M. T. P. Gilbert, B. L. Otto-Bliesner, A. Svensson, S. Theodoridis, J. M. Wilmshurst, J. C. Buettel, E. Canteri, M. McDowell, L. Orlando, J. A. Pilowsky, C. Rahbek, and D. Nogues-Bravo</i>	<i>Science</i>
2	SONG IN A SOCIAL AND SEXUAL CONTEXT: VOCALIZATIONS SIGNAL IDENTITY AND RANK IN BOTH SEXES OF A COOPERATIVE BREEDER	2016
	<i>S. Keen, C. D. Meliza, J. Pilowsky, and D. R. Rubenstein</i>	<i>Frontiers in Ecology &amp; Evolution</i>
1	A TEST OF THE HAPLOID SUSCEPTIBILITY HYPOTHESIS USING A SPECIES WITH NATURALLY OCCURRING VARIATION IN PLOIDY	2021
	<i>N. Wilson-Rich, J. A. Pilowsky, B. Foo, T. Tien, F. Hester, and P. T. Starks</i>	<i>Insectes sociaux</i>

## Leadership & Community Service

<b>rOpenSci</b>	<i>rOpenSci</i>
PACKAGE REVIEWER	2025-
<b>Society for Open, Reliable, and Transparent Ecology &amp; Evolutionary Biology (SORTEE)</b>	<i>SORTEE</i>
WEBSITE EDITOR & MEMBER	2025-

## Presentations

2024	<b>Ecological Society of America</b> , "Biases in parasite richness estimates arising from coinfection dynamics"	<i>Long Beach, CA, USA</i>
	<b>Ecology and Evolution of Infectious Disease</b> , "epizootic: an R package for process-explicit spatial population models of wildlife disease"	<i>Palo Alto, CA, USA</i>
2021	<b>Ecological Society of Australia</b> , "Simulating species range dynamics over long time scales"	<i>Virtual Conference</i>
2017	<b>Ecological Society of America</b> , "The ecology of cooperation in Polistes wasps"	<i>Portland, OR, USA</i>

## Lectures & Teaching

2024	<b>Process-Explicit Models in Disease Ecology</b> , Guest lecture at Skidmore College	<i>Saratoga Springs, NY, USA</i>
	<b>Process-Explicit Models in Ecology</b> , Guest Lecture at Fundamentals of Ecology and Evolution course	<i>Millbrook, NY, USA</i>
2021	<b>Revenge of the Bison!</b> , Presentation at Ingenuity Convention	<i>Adelaide, AU</i>
2016	<b>Evolution of Sex</b> , Study Group Leader at Osher Institute	<i>Medford, MA, USA</i>
2015	<b>Evolution of Altruism</b> , Study Group Leader at Osher Institute	<i>Medford, MA, USA</i>
2015	<b>Ecological Modeling</b> , Graduate Instructor at Tufts University	<i>Medford, MA, USA</i>

## Honors & Awards

2023	<b>Dean's Commendation for Dissertation Excellence</b> , University of Adelaide	<i>Adelaide, AU</i>
2021	<b>Ingenuity Communications Award, Runner-Up</b> , University of Adelaide	<i>Adelaide, AU</i>
2014	<b>Graduate Research Competition Winner</b> , Tufts University	<i>Medford, MA, USA</i>
2013	<b>Graduate Research Fellowship</b> , National Science Foundation	<i>Medford, MA, USA</i>

# Leadership & Community Service

<b>rOpenSci</b> PACKAGE REVIEWER	<i>rOpenSci</i> 2025-
<b>Society for Open, Reliable, and Transparent Ecology &amp; Evolutionary Biology (SORTEE)</b> WEBSITE EDITOR & MEMBER	<i>SORTEE</i> 2025-

# Research Internships

<b>European Doctoral School of Demography Fellow</b> SUPERVISOR: DR. JOHAN DAHLGREN <ul style="list-style-type: none"><li>Developed <i>colorednoise</i> R package</li><li>Coursework in demographic modeling</li></ul>	<i>Odense, DK</i> 2017 – 2018
<b>Data collection and visualization of coffee crop yields</b> SUPERVISOR: DR. AVERY COHN <ul style="list-style-type: none"><li>Gathered and harmonized decades of coffee crop yield data from all coffee-producing countries</li><li>Designed visualizations of coffee yield in space and time</li></ul>	<i>Tufts University, Medford, MA, USA</i> 2016
<b>Florida Scrub Jay LTER at Archbold Biological Station</b> SUPERVISOR: DR. REED BOWMAN <ul style="list-style-type: none"><li>Fieldwork monitoring scrub jay survival and reproduction</li><li>Spatial modeling of kin structure in intact and disturbed habitat</li></ul>	<i>Venus, FL, USA</i> 2012

# Skills

<b>Programming</b>	R, C++, Python, Julia, Bash, $\LaTeX$
<b>Web</b>	HTML5, CSS3, JS (Node/D3), Hugo
<b>Management</b>	Git, Docker
<b>Graphics</b>	Illustrator, Photoshop, InDesign
<b>Languages</b>	English (fluent), Spanish (fluent), French (proficient), Danish (conversational)