

# Dr. July Pilowsky

## Curriculum Vitae



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<https://github.com/japilo>

## PUBLICATIONS

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, et al. Millennial processes of population decline, range contraction and near extinction of the European bison. *Proceedings of the Royal Society B*, 290(2013):20231095, December 2023.

J. A. Pilowsky, A. Manica, S. Brown, C. Rahbek, and D. A. Fordham. Simulations of human migration into North America are more sensitive to demography than choice of palaeoclimate model. *Ecological Modelling*, 473(2022):110115, 2022.

J. A. Pilowsky, S. Haythorne, S. C. Brown, M. Krapp, E. Armstrong, B. W. Brook, C. Rahbek, and D. A. Fordham. Range and extinction dynamics of the steppe bison in Siberia: A pattern-oriented modelling approach. *Global Ecology and Biogeography*, 31(12):2483–2497, 2022.

J. A. Pilowsky, R. K. Colwell, C. Rahbek, and D. A. Fordham. Process-explicit models reveal the structure and dynamics of biodiversity patterns. *Science Advances*, 8(31):eabj2271, 2022.

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. Process-explicit models reveal pathway to extinction for woolly mammoth using pattern-oriented validation. *Ecology Letters*, 25(1):125–137, 2022.

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. Using paleo-archives to safeguard biodiversity under climate change. *Science*, 369(6507):eabc5654, 2020.

J. A. Pilowsky and J. P. Dahlgren. Incorporating the temporal autocorrelation of demographic rates into structured population models. *Oikos*, 129(2):238–248, 2019.

J. A. Pilowsky and P. T. Starks. Displacement and replacement in real time: *Polistes dominula*'s impact on *P. fuscatus* in the northeastern U.S. *Biological Invasions*, 20(5):1161–1169, 2018.

S. Keen, C. D. Meliza, J. Pilowsky, and D. R. Rubenstein. Song in a social and sexual context: vocalizations signal identity and rank in both sexes of a cooperative breeder. *Frontiers in Ecology and Evolution*, 4:46, 2016.

N. Wilson-Rich, J. A. Pilowsky, B. Foo, T. Tien, F. Hester, and P. T. Starks. A test of the haploid susceptibility hypothesis using a species with naturally occurring variation in ploidy. *Insectes sociaux*, 61(2):163–169, 2014.

J. A. Pilowsky and D. R. Rubenstein. Social context and the lack of sexual dimorphism in song in an avian cooperative breeder. *Animal Behaviour*, 85(4):709–714, 2013.

## EDUCATION

2019 – 2023 **Doctor of Philosophy**  
Biology  
*University of Adelaide, Australia*  
*University of Copenhagen, Denmark*

2013 – 2017 **Master of Science**  
Biology  
*Tufts University, Boston, USA*

2008 – 2012 **Bachelor of Arts**  
Environmental Biology  
*Columbia University, New York, USA*

## WORK EXPERIENCE

2023– (FT)  
Cary Institute for Ecosystem Studies  
**Postdoctoral Associate**  
Working with Dr. Barbara Han to develop process-explicit individual and population models of disease transmission in wildlife.

2017 – 2018 (FT)  
Max Planck Institute of Demographic Research  
**Pre-Doctoral Fellow**  
Worked with Prof. Johan Dahlgren to develop the colored-noise package for simulating populations with temporal autocorrelation.

2016 (PT)  
Tufts University  
**Research Technician**  
I worked with Prof. Avery Cohn to collect, explore, and visualize data on coffee production in Central and South America in relation to changing climate.

2012 (FT)  
Archbold Biological Station  
**Research Intern**  
I worked with Dr. Reed Bowman to monitor the endangered Florida Scrub Jay and create spatial maps of the bird's kinship structures in intact and disturbed habitat.

## PROGRAMMING & OPEN SOURCE

SOFTWARE I maintain three R packages on CRAN:  
colorednoise (36,000 downloads)  
poems (14,000 downloads)  
paleopop (9,000 downloads)

LANGUAGES R, C++,  $\LaTeX$ , Python, Ruby, CSS

## TEACHING EXPERIENCE

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2014–2016

Osher Institute, Tufts University  
***Study Group Leader***

Created curricula with lectures, discussion, and activities for two classes on evolution for senior citizens. Taught curricula as month long courses for 30 senior students each year.

2014–2015

Department of Biology, Tufts University  
***Graduate Instructor***

Developed a new lab curriculum to complement a lecture course on biostatistics. Taught the lab course I developed for a class of 25 graduate and undergraduate students.

## PRESENTATIONS

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- 2021 Ecological Society of Australia  
"Simulating species range dynamics over long time scales."  
2017 Ecological Society of America  
"The ecology of cooperation in *Polistes* wasps."

## AWARDS

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- 2021 **Ingenuity Communications Award,  
Runner-Up**  
*University of Adelaide*  
2014 **Graduate Research Competition Winner**  
*Tufts University*  
2013 **Graduate Research Fellowship**  
*National Science Foundation*

## LANGUAGES

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- CONVERSATIONAL Danish  
PROFICIENT French  
FLUENT English, Spanish