

Philipp Hanno Boersch-Supan MRes PhD

Principal Ecological Statistician

British Trust for Ornithology
The Nunnery, Thetford IP24 2PU, UK
✉ pboesu@gmail.com

🌐 <http://pboesu.github.io>

🔗 pboesu

ORCID 0000-0001-6723-6833

I am interested in the physical and biological processes that shape the distribution, abundance, and movements of animals, and their life-history strategies. I use a combination of field observations and computational/theoretical approaches and predominantly study birds. At the British Trust for Ornithology I oversee a programme of statistical research, covering topics such as the design of biodiversity surveys, analyses of large-scale and long-term datasets and the evaluation of monitoring technology, and lead a team of statisticians and quantitative ecologists who champion ecologically-informed robust data analysis.

EDUCATION

2014	PhD in Marine Biology Pelagic Ecology Research Group, University of St Andrews Ocean Research and Conservation Group, University of Oxford
2011	Certificate in Oceanography Open University, Milton Keynes, United Kingdom
2010	Master of Research in Environmental Biology (Distinction) Universities of St Andrews and Dundee, United Kingdom
2008	Vordiplom in Chemistry (Distinction), Certificates in Biochemistry and Zoology Philipps-Universität Marburg, Germany

EMPLOYMENT AND ACADEMIC APPOINTMENTS

2018 –	British Trust for Ornithology, Thetford, UK Principal Ecological Statistician (2024 –) Senior Ecological Statistician (2021 – 2024) Ecological Statistician (2018 – 2021)
2019 –	Department of Zoology, University of Cambridge, UK Guest Lecturer in Applied Ecology
2016 – 2022	Department of Geography, University of Florida, Gainesville, FL Courtesy Research Faculty (2017 – 2022) Postdoctoral Associate (2016 – 2018)
2014 – 2017	Integrative Biology, University of South Florida, Tampa, FL Adjunct Instructor, Biostatistics (2017) Postdoctoral Research Scholar (2014 – 2016)
2013 – 2014	British Antarctic Survey, Cambridge, UK Zoological Analyst
2013	Freelance Consultant (Science Communication) Client: Global Ocean Commission, Oxford, UK
2005	Wadden Sea National Park of Lower Saxony, Germany Field Ornithologist/Park Warden

SKILLS

Software	Data analysis, visualisation, statistical modelling and package development in R, Stan, JAGS, custom samplers; spatial analysis with ArcGIS, GRASS, R; shell scripting; databases (Oracle, PostgreSQL); version control (git); \LaTeX ; basic knowledge of Python, MATLAB, C, and C++.
Field/Labwork	broad ornithological survey experience; assisted in bird banding, tagging efforts; UAV (drone) operations; >100 days at-sea fisheries, oceanographic and remotely operated submersible surveys; molecular genetics / DNA barcoding.
Languages	English, German

PEER-REVIEWED PUBLICATIONS

44. Clarke JA, Smith JA, Leech E, **Boersch-Supan PH**, Robinson RA (in press): *How many eggs are too many? - utilising an under-dispersed count data model to gain insights into evolutionary productivity constraints on bird species*. *Environmetrics*
43. O'Hanlon NJ, Clewley GD, Johnston DT, Thaxter CB, Langlois Lopez S, Quinn LR, **Boersch-Supan PH**, Masden EA, Daunt F, Wilson J, Burton NHK, Humphreys EM (2025): *Partial niche partitioning in three sympatric gull species through foraging areas and habitat selection*. *Ecology and Evolution*, 15(7): e71577. [10.1002/ece3.71577](https://doi.org/10.1002/ece3.71577)
42. Burns F, Mordue S, Al-Fulaij N, **Boersch-Supan PH**, Boughey KL, Briggs P, Eaton MA, Harrower C, Jackson AC, Langton S, Mancini F, Noble D, Shortall CR, Smith CA, Pakeman RJ (2025): *State of nature 2023 terrestrial and freshwater animal dataset for the United Kingdom and its constituent countries*. *Data in Brief*, 60, 111646. [10.1016/j.dib.2025.111646](https://doi.org/10.1016/j.dib.2025.111646)
41. Macgregor CJ, Gillings S, Balmer DE, **Boersch-Supan PH**, Harris SJ, Hereward HFR, Humphreys EM, Pearce-Higgins JW, Taylor RC, Troost G, Atkinson PW (2024): *Impacts of highly pathogenic avian influenza on seabird populations in the North Sea are detectable in sea-watchers' migration counts*. *Bird Study*, 71(4), 311–325. [10.1080/00063657.2024.2440826](https://doi.org/10.1080/00063657.2024.2440826)
40. Pollock CJ, Johnston DT, **Boersch-Supan PH**, Thaxter CB, Humphreys EM, O'Hanlon NJ, Clewley GD, Weston ED, Shamoun-Baranes J, Cook ASCP (2024): *Avoidance and attraction responses of kittiwakes to three offshore wind farms in the North Sea*. *Marine Biology* [10.1007/s00227-024-04542-y](https://doi.org/10.1007/s00227-024-04542-y)
39. Davies JG, **Boersch-Supan PH**, Clewley GD, Humphreys EM, O'Hanlon NJ, Shamoun-Baranes J, Thaxter CB, Weston E, Cook ASCP (2024): *Influence of wind on kittiwake *Rissa tridactyla* flight and offshore wind turbine collision risk*. *Marine Biology*, 171, 191. [10.1007/s00227-024-04508-0](https://doi.org/10.1007/s00227-024-04508-0)
38. **Boersch-Supan PH**, Brighton CH, Thaxter CB, Cook ASCP (2024): *Natural body size variation in seabirds provides a fundamental challenge for flight height determination by single-camera photogrammetry*. *Marine Biology* [10.1007/s00227-024-04396-4](https://doi.org/10.1007/s00227-024-04396-4)
37. Brighton CH, Massimino D, **Boersch-Supan PH**, Barnes AE, Martay B, Bowler DE, Hoskins HMJ, Pearce-Higgins JW (2024): *The benefits of protected areas for bird population trends may depend on their condition*. *Biological Conservation* [10.1016/j.biocon.2024.110553](https://doi.org/10.1016/j.biocon.2024.110553)
36. Border JA, **Boersch-Supan PH**, Pearce-Higgins JW, Hewson CM, Howard C, Stephens PA, Willis SG, Houston AI, Gargallo G, Baillie SR (2024): *Spatial variation in spring arrival patterns of Afro-Palaearctic bird migration across Europe*. *Global Ecology and Biogeography*. [10.1111/geb.13850](https://doi.org/10.1111/geb.13850)
35. **Boersch-Supan PH**, Hanmer HJ, Robinson RA (2024): *Extended molt phenology models improve inferences about molt duration and timing*. *Ornithology* [10.1093/ornithology/ukae003](https://doi.org/10.1093/ornithology/ukae003)
34. Johnston D, Thaxter C, **Boersch-Supan P**, ... , Humphries L (2023): *Flight heights obtained from GPS versus altimeters influence estimates of collision risk with offshore wind turbines in Lesser Black-backed Gulls*. *Movement Ecology* [10.1186/s40462-023-00431-z](https://doi.org/10.1186/s40462-023-00431-z)
33. **Boersch-Supan PH**, Lee ATK, Oschadleus HD (2023): *A demonstration of the value of recapture data for informing moult phenology models for species with imperfect moult data*. *Ostrich* [10.2989/00306525.2023.2248396](https://doi.org/10.2989/00306525.2023.2248396)
32. Oschadleus HD, **Boersch-Supan PH** (2023): *Sunning in Yellow Bishops *Euplectes capensis**. *Ostrich* [10.2989/00306525.2023.2216375](https://doi.org/10.2989/00306525.2023.2216375)
31. Evans L, Melero Y, Schmucki R, **Boersch-Supan P**, Brotons L, Fontaine C, Jiguet F, Kuussaari M, Massimino D, Robinson R, Roy D, Schweiger O, Settele J, Stefanescu C, van Turnhout C, Oliver T (2023): *Mechanisms underpinning community stability along a latitudinal gradient: insights from a niche-based approach*. *Global Change Biology* [10.1111/gcb.16684](https://doi.org/10.1111/gcb.16684)
30. Barnes AE, Davies JG, Martay B, **Boersch-Supan PH**, Harris SJ, Noble DG, Pearce-Higgins JW, Robinson RA (2023): *Rare and declining bird species benefit most from designating protected areas for conservation in the UK*. *Nature Ecology & Evolution* [10.1038/s41559-022-01927-4](https://doi.org/10.1038/s41559-022-01927-4)

29. Hanmer HJ, **Boersch-Supan PH***, Robinson RA (2022): *Differential changes in lifecycle-event phenology provide a window into regional population declines*. Biology Letters [10.1098/rsbl.2022.0186](https://doi.org/10.1098/rsbl.2022.0186)
*corresponding author
28. Evans L, Melero Y, Schmucki R, **Boersch-Supan P**, Brotons L, Fontaine C, Jiguet F, Kuussaari M, Massimino D, Robinson R, Roy D, Schweiger O, Settele J, Stefanescu C, van Turnhout C, Oliver T (2022): *Bioclimatic context of species' populations determines community stability*. Global Ecology and Biogeography [10.1111/geb.13527](https://doi.org/10.1111/geb.13527)
27. Robinson O, Socolar J, Stuber E, Auer T, Berryman A, **Boersch-Supan P**, Brightsmith D, Burbidge A, Butchart S, Davis C, Dokter A, Di Giacomo A, Farnsworth A, Fink D, Hochachka W, Howell P, La Sorte F, Lees A, Marsden S, Martin R, Martin R, Masello J, Miller E, Moodley Y, Musgrove A, Noble D, Ojeda V, Quillfeldt P, Royle J, Ruiz-Gutierrez V, Tella J, Yorio P, Youngflesh C, Johnston A (2022): *Extreme uncertainty and unquantifiable bias do not inform population sizes*. Proceedings of the National Academy of Sciences. [10.1073/pnas.2113862119](https://doi.org/10.1073/pnas.2113862119)
26. Johnston DT, Thaxter C, **Boersch-Supan PH**, Humphreys E, Bouten W, Scragg ES, Masden EA, Barber LJ, Conway G, Clark NA, Burton NHK, Cook ASCP (2022): *Investigating avoidance and attraction responses in lesser black-backed gulls *Larus fuscus* to offshore wind farms*. Marine Ecology Progress Series [10.3354/meps13964](https://doi.org/10.3354/meps13964)
25. Woodward ID, Austin GE, **Boersch-Supan PH**, Thaxter CB, Burton NK (2022): *Assessing drivers of winter abundance change in Eurasian Curlews *Numenius arquata* in England and Wales*. Bird Study [10.1080/00063657.2022.2049205](https://doi.org/10.1080/00063657.2022.2049205)
24. **Boersch-Supan PH** (2021): *[Re] Modeling Insect Phenology Using Ordinal Regression and Continuation Ratio Models*. ReScience C [10.5281/zenodo.5006004](https://doi.org/10.5281/zenodo.5006004)
23. Nguyen KH*, **Boersch-Supan PH***, Hartman RB, Mendiola SY, Harwood VJ, Civitello DJ, Rohr JR (2021): *Interventions can shift the thermal optimum for parasitic disease transmission*. Proceedings of the National Academy of Sciences. [10.1073/pnas.2017537118](https://doi.org/10.1073/pnas.2017537118)
*joint corresponding authors
22. O'Brien DA, Taylor ML, Masonjones HD, **Boersch-Supan PH**, O'Shea OR (2021): *An experimental assessment of social tolerance and den ecology in a high-density octopus population*. Marine Biology 168:61 [10.1007/s00227-021-03865-4](https://doi.org/10.1007/s00227-021-03865-4)
21. Humphries EM, Austin GE, Frost T, Mellan H, **Boersch-Supan PH**, Burton NK, Balmer DE (2021): *Wader populations on the UK's open coast: results of the 2015/16 Non-Estuarine Waterbird Survey (NEWS-III) and a review of population trends*. Bird Study 67:371–384. [10.1080/00063657.2021.1884184](https://doi.org/10.1080/00063657.2021.1884184)
20. O'Brien DA, Taylor ML, Masonjones HD, **Boersch-Supan PH**, O'Shea OR (2020): *Drivers of Octopus briareus Robson abundance and density in a saltwater Bahamian lake: A 30-year comparison*. Journal of Experimental Marine Biology and Ecology. [10.1016/j.jembe.2020.151377](https://doi.org/10.1016/j.jembe.2020.151377)
19. **Boersch-Supan PH**, Trask AE, Baillie SR (2019): *Robustness of simple avian population trend models for semi-structured citizen science data is species-dependent*. Biological Conservation. [10.1016/j.biocon.2019.108286](https://doi.org/10.1016/j.biocon.2019.108286)
18. Isaac NJB, Jarzyna MA, Keil P, **Boersch-Supan PH**, Browning E, Dambly LI, Freeman SN, Golding N, Guillera-Aroita G, Henrys P, Jarvis S, Lahoz-Monfort J, Pagel J, Pescott OL, Schmucki R, Simmonds E, O'Hara RB (2019): *Data Integration for Large Scale Ecological Models of Species Distributions*. Trends in Ecology & Evolution. [10.1016/j.tree.2019.08.006](https://doi.org/10.1016/j.tree.2019.08.006)
17. **Boersch-Supan PH**, Johnson LR (2018): *Two case studies detailing Bayesian parameter inference for dynamic energy budget models*. Journal of Sea Research. [10.1016/j.seares.2018.07.014](https://doi.org/10.1016/j.seares.2018.07.014)
16. Youker-Smith E, **Boersch-Supan PH**, Gibbs J, Ryan SJ (2018): *Environmental drivers of Frog Virus 3 in free living amphibians in constructed ponds*. EcoHealth. [10.1007/s10393-018-1350-5](https://doi.org/10.1007/s10393-018-1350-5)
15. **Boersch-Supan PH**, Johnson LR, Phillips RA, Ryan SJ (2017): *Surface temperatures of albatross eggs and nests*. Emu - Austral Ornithology. [10.1080/01584197.2017.1406311](https://doi.org/10.1080/01584197.2017.1406311)

14. Ryan SJ, Lippi CA, **Boersch-Supan PH**, Heydari N, Silva N, Adrian J, Noblecilla LF, Ayala EB, Encalada M, Larsen DA, Krisher JT, Krisher L, Fregosi L, Stewart-Ibarra AM (2017): *Quantifying Seasonal and Diel Variation in Anopheline and Culex Human Biting Rates in Southern Ecuador*. *Malaria Journal* 16:479. [10.1186/s12936-017-2121-4](https://doi.org/10.1186/s12936-017-2121-4)
13. Johnson LR, **Boersch-Supan PH**, Phillips RA, Ryan SJ (2017): *Changing measurements or changing movements? Sampling scale and movement model identifiability across multiple generations of biologging technology*. *Ecology and Evolution*. [10.1002/ece3.3461](https://doi.org/10.1002/ece3.3461)
12. Sydeman WJ, Thompson SA, Anker-Nilssen T, Arimitsu M, Bennison A, **Boersch-Supan PH**, Bransome N, Boyd C, Crawford RJM, Daunt F, Furness R, Gianuca D, Gladics A, Koehn L, Lang J, Logerwell E, Morris T, Phillips EM, Provencher J, Punt A, Saraux C, Shannon L, Sherley R, Simeone A, Wanless R, Wanless S, Zador S (2017): *Best Practices for Assessing Forage Fish Fisheries - Seabird Resource Competition*. *Fisheries Research* 194:209-221 [10.1016/j.fishres.2017.05.018](https://doi.org/10.1016/j.fishres.2017.05.018)
11. Djurhuus A, **Boersch-Supan PH**, Mikalsen S, Rogers AD (2017): *Microbial biogeography traces water-mass features of a dynamic oceanic frontal system*. *Royal Society Open Science* 4:170033 [10.1098/rsos.170033](https://doi.org/10.1098/rsos.170033)
10. **Boersch-Supan PH**, Ryan SJ, Johnson LR (2016): *deBInfer: Bayesian inference for dynamic models in R*. *Methods in Ecology and Evolution*. [10.1111/2041-210X.12679](https://doi.org/10.1111/2041-210X.12679)
9. Borrelle SB, **Boersch-Supan PH**, Gaskin CP, Towns DR (2016): *Influences on seabird recolonization to offshore islands following predator eradication*. *Oryx*. [10.1017/S0030605316000880](https://doi.org/10.1017/S0030605316000880)
8. Rogers A, Alvheim O, Bemanaja E, Benivary D, **Boersch-Supan PH**, Bornman T, Cedras R, Du Plessis N, Gotheil S, Høines A, Kemp K, Kristiansen J, Letessier T, Mangar V, Mazungula N, Mørk T, Pinet P, Pollard R, Read J, Sonnekus T (2016): *Pelagic communities of the South West Indian Ocean seamounts: R/V Dr Fridtjof Nansen Cruise 2009-410*. *Deep Sea Research II* [10.1016/j.dsr2.2016.12.010](https://doi.org/10.1016/j.dsr2.2016.12.010)
7. **Boersch-Supan PH** (2016): *rucrdtw: Fast time series subsequence search in R*. *Journal of Open Source Software* 1(7):1-2 [10.21105/joss.00100](https://doi.org/10.21105/joss.00100)
6. Letessier TB, Meeuwig JJ, Cox MJ, **Boersch-Supan PH**, Brierley AS (2016): *Enhanced pelagic biomass around coral atolls*. *Marine Ecology Progress Series* 546:271–276 [10.3354/meps11675](https://doi.org/10.3354/meps11675)
5. **Boersch-Supan PH**, Rogers AD, Brierley AS (2015): *The distribution of pelagic scattering layers in the southwest Indian Ocean*. *Deep Sea Research II* [10.1016/j.dsr2.2015.06.023](https://doi.org/10.1016/j.dsr2.2015.06.023)
4. Letessier TB, De Grave S, **Boersch-Supan PH**, Kemp KM, Brierley AS, Rogers AD (2015): *Seamount influences on mid-water shrimps (Decapoda) and gnathophausiids (Lophogastridea) of the South-West Indian Ridge*. *Deep Sea Research II* [10.1016/j.dsr2.2015.05.009](https://doi.org/10.1016/j.dsr2.2015.05.009)
3. Laptikovskiy V, **Boersch-Supan PH**, Kemp KM, Letessier TB, Rogers AD (2015): *Cephalopods of the South-west Indian Ocean Ridge: a hotspot of extreme biological diversity and absence of endemism*. *Deep Sea Research II* [10.1016/j.dsr2.2015.07.002](https://doi.org/10.1016/j.dsr2.2015.07.002)
2. **Boersch-Supan PH**, Boehme L, Read JF, Rogers AD, Brierley AS (2012): *Elephant seal foraging dives track prey distribution, not temperature: Comment on McIntyre et al. (2011)*. *Marine Ecology Progress Series* 461:293–298 [10.3354/meps09890](https://doi.org/10.3354/meps09890)
1. Rogers AD, Tyler PA, Connelly DP, Copley JT, James R, Larter RD, Linse K, Mills RA, Naveira-Garabato A, Pancost RD, Pearce DA, Polunin NVC, German CR, Shank T, **Boersch-Supan PH**, Alker B, Aquilina A, Bennett SA, Clarke A, Dinley RJJ, Graham ACG, Green D, Hawkes JA, Hepburn L, Hilario A, Huvenne VAI, Marsh L, Ramirez-Llodra E, Reid WDK, Roterman CN, Sweeting CJ, Thatje S, Zwirgmaier K (2012): *The discovery of new deep-sea hydrothermal vent communities in the Southern Ocean and implications for biogeography*. *PLoS Biology* 10(1):e1001234 [10.1371/journal.pbio.1001234](https://doi.org/10.1371/journal.pbio.1001234)

FORTHCOMING PUBLICATIONS (MANUSCRIPTS AVAILABLE ON REQUEST)

- Preprint **Boersch-Supan PH**, Robinson RA: *Integrating structured and unstructured citizen science data to improve wildlife population monitoring*. *bioRxiv* [10.1101/2021.03.03.431294](https://doi.org/10.1101/2021.03.03.431294)

REPORTS, BOOK CHAPTERS, THESES

26. Brighton CH, Clarke JA, **Boersch-Supan PH** (2025): *Scientific support to the trial of Spoor AI at the European Offshore Wind Deployment Centre*. BTO Research Report 781. British Trust for Ornithology, Thetford, UK.
25. Bennett S, Rhoades J, **Boersch-Supan PH**, Humphreys EM, Davies J, Upton A (2025): *Modelled changes to seabird presence and abundance across the MarPAMM region in response to predicted changes in climatic and oceanographic variables*. BTO Research Report 767. British Trust for Ornithology, Thetford, UK.
24. Feather AP, Burton NHK, Johnston DT, **Boersch-Supan PH** (2025): *A review of existing methods to collect data on seabird flight height distributions and their use in offshore wind farm impact assessments*. BTO Research Report 780. British Trust for Ornithology, Thetford, UK.
23. Rhoades J, Johnston DT, Humphreys EM, **Boersch-Supan PH** (2025): *Review of methods used to calculate scale of artificial nesting structures proposed as a compensation measure for Kittiwake mortality at offshore wind farms*. BTO Research Report 788. British Trust for Ornithology, Thetford, UK.
22. Green RM, Thaxter CB, Johnston DT, **Boersch-Supan PH**, Bouten W, Burton NHK (2023): *Assessing movements of Lesser Black-backed Gulls using GPS tracking devices in relation to the Galloper Wind Farm*. BTO Research Report 758. British Trust for Ornithology, Thetford. 190pp.
21. O'Hanlon NJ, Harris SJ, Thaxter CB, **Boersch-Supan PH**, Robinson RA, Balmer DE, Burton NHK (2024): *Seabird population and demographic monitoring in the UK: a review and recommendations for future sampling*. BTO Research Report 754. British Trust for Ornithology, Thetford, UK.
20. Cook ASCP, Thaxter CB, Davies J, Green RMW, Wischniewski S, **Boersch-Supan P** (2023): *Understanding seabird behaviour at sea part 2: improved estimates of collision risk model parameters*. Scottish Government Report. 110pp.
19. Burns F, Mordue S, al Fulaij N, **Boersch-Supan PH**, Boswell J, Boyd RJ, Bradfer-Lawrence T, de Ornellas P, de Palma A, de Zylva P, Dennis EB, Foster S, Gilbert G, Halliwell L, Hawkins K, Haysom KA, Holland MM, Hughes J, Jackson AC, Mancini F, Mathews F, McQuatters-Gollop A, Noble DG, O'Brien D, Pescott OL, Purvis A, Simkin J, Smith A, Stanbury AJ, Villemot J, Walker KJ, Walton P, Webb TJ, Williams J, Wilson R, Gregory RD (2023): *State of Nature 2023*. The State of Nature Partnership, United Kingdom. 108pp. stateofnature.org.uk
18. White TB, Amano T, **Boersch-Supan P**, Christie A, Freckleton R, Quinzin MC, Rezaie1 AM, Sutherland WJ, Yamashita H (2022): *Gathering and Assessing Pieces of Evidence*. Chapter 2 in Sutherland WJ (Ed.) *Transforming Conservation - A Practical Guide to Evidence and Decision Making*. Open Book Publishers. [10.11647/OBP.0321](https://doi.org/10.11647/OBP.0321)
17. **Boersch-Supan PH**, Robinson RA (2022): *Evaluating terrestrial bird trends for Welsh Statement Areas*. JNCC Report No. 716. JNCC, Peterborough. 86pp. jncc.gov.uk
16. Mancini F, **Boersch-Supan PH**, Robinson RA, Harris M, Pocock MJO (2022): *An introduction to model based data integration for biodiversity assessments*. JNCC, Peterborough. 30pp. ISBN 978-1-86107-639-7 jncc.gov.uk
15. Macgregor CJ, **Boersch-Supan PH**, Burton NHK, Carss DN, Newson SE, Pearce-Higgins JW, Robinson RA, Taylor RC (2022): *Informing decisions on lethal control of Cormorant and Goosander in Wales: scenarios from population viability modelling*. Report to Natural Resources Wales. 78pp.
14. **Boersch-Supan PH**, Thaxter CB, Cook ASCP (2021): *Appraisal and analysis of flight height data collected in the Firth of Forth on behalf of SSE Renewables*. Report to SSE. 44pp.
13. Taylor RC, **Boersch-Supan PH**, Cooper J, O'Connell P, Wetherhill A, Bowgen K, Calladine J (2021): *Results from the 2020/21 winter census of Cormorant and Goosander in Wales*. Report to Natural Resources Wales.
12. **Boersch-Supan PH** (2020): *Puffinus puffinus - Manx shearwater*. Species account in Keller V et al. (Eds.) *European Breeding Bird Atlas 2*. Lynx Edicions.
11. Taylor RC, Austin GE, **Boersch-Supan PH**, Bowgen K, Burton NHK, Calladine J, Noble D, Robinson RA (2020): *2020/21 winter census of cormorant and goosander in Wales*. NRW Science Report. Natural Resources Wales. 23pp.

10. Austin GE, Balmer DE, **Boersch-Supan PH**, Calbrade NA (2020): *Analysis of Wetland Bird Survey (WeBS) Data for Lindisfarne National Nature Reserve: site and count sector-level trends winter 1993/94 to 2018/19*. BTO Research Report No. 729. British Trust for Ornithology, Thetford. 101pp.
9. Woodward ID, Austin GE, Balmer DE, **Boersch-Supan PH**, Irwin CG, Scott MS, Thaxter C, Webb A, Burton NHK (2019): *Improving Methods for Counting Dispersed Bird Populations: Urban Gull Case Study*. Report to DEFRA. British Trust for Ornithology, Thetford. 54pp.
8. Hayhow DB, Eaton MA, Stanbury AJ, Burns F, Kirby WB, Bailey N, Beckmann B, Bedford J, **Boersch-Supan P**, et al. (2019): *The State of Nature 2019*. The State of Nature Partnership. United Kingdom. 108pp.
7. Border JA, Calladine J, **Boersch-Supan PH**, Hunt M, Pearce-Higgins JW (2019): *Correlates of change in breeding bird populations of the Peak District Moorlands from 1990 and 2004/5 to 2018*. Report to Moors for the Future Partnership. Edale, United Kingdom. 86pp.
6. Border JA, Massimino D, Newson SE, **Boersch-Supan PH**, Hunt M, Pearce-Higgins JW (2019): *Changes in moorland breeding birds of the Peak District Moorlands*. Report to Moors for the Future Partnership. Edale, United Kingdom. 50pp.
5. **Boersch-Supan PH** (2019): *Integrating data sources to better estimate avian population trends – A case study reconstructing the colonisation of Eastern England by Cetti's Warbler*. Report to JNCC. British Trust for Ornithology, Thetford, United Kingdom. 8pp.
4. **Boersch-Supan PH** (2013): *The ecology of scattering layer biota around Indian Ocean seamounts and islands*. PhD Thesis, University of St Andrews, UK. 219pp. hdl.handle.net/10023/11440
3. **Boersch-Supan PH**, Webster CN (2012): *Net sampling and acoustic surveys of deep-scattering layers and their interactions with seamounts*. In Rogers AD, Taylor MT (Eds.) Benthic biodiversity of seamounts in the southwest Indian Ocean. Cruise report – R/V James Cook 066. University of Oxford / NERC. 235pp.
2. Rogers AD, Alvheim O, Bemanaja E, Benivary D, **Boersch-Supan PH**, et al. (2009): *Cruise Report “Dr. Fridtjof Nansen” Southern Indian Ocean Seamounts*. IUCN, Gland, Switzerland. 188pp.
1. **Boersch-Supan PH** (2009): *Gelatinous zooplankton distribution along the western Irish shelf-edge*. MRes Thesis, University of St Andrews, United Kingdom. 67pp.

PEER-REVIEWED RESEARCH SOFTWARE

deBInfer	Bayesian inference for differential equation models in R (with SJ Ryan, LR Johnson) https://cran.r-project.org/package=deBInfer [R, C]
rucrdtw	Fast dynamic time warping algorithms for time-series data mining in R https://cran.r-project.org/package=rucrdtw [R, C++]

OTHER SOFTWARE

moultnmcmc	Bayesian inference for avian moult phenology models https://github.com/pboesu/moultnmcmc [R, Stan]
ewp	Regression models for underdispersed count data https://github.com/pboesu/ewp [R, C++]
seabirdeb	Compiled bioenergetics models for seabirds https://github.com/pboesu/seabirdeb [R, C]
DEButilities	Utility functions for dynamic energy budget models https://github.com/pboesu/DEButilities [R]
microclimloggers	Data parsing functions for microclimate loggers such as iButtons (Work in progress) https://github.com/RyanLab/microclimloggers [R]
penguinwb	Interface and analysis framework for a large database of penguin body mass records Closed-source package for internal use at the British Antarctic Survey [R, SQL]
cowsay	Allows printing of character strings as messages/warnings/etc. with ASCII animals Contributor. Lead developer: Scott Chamberlain https://cran.r-project.org/package=cowsay [R]

AWARDS AND SCHOLARSHIPS

2020	Software Sustainability Institute Fellowship (£3000)
2016	Enderby Trust Scholarship (\$5000, Travel to sub-Antarctic islands of New Zealand)
2010 – 2013	Doctoral Fellowship of the Cusanuswerk (€41,400)
2010 – 2013	Doctoral Fellowship of the German National Academic Foundation (non-stipendiary)
10/2011	Visiting Researcher Award, Rehbock Fund, Scripps Inst. of Oceanography Archives (\$ 2,100)
2009 – 2012	Hilton-Brown Scholarship (Fees), University of St Andrews (£ 10,500)
2009 – 2010	Scholarship to Study Abroad, German National Academic Foundation (€ 4,450)
2008 – 2009	Hölderlin-Scholarship, SAP AG and German National Academic Foundation (€ 5,000)
2008 – 2009	MRes Studentship (Fees), UK Natural Environment Research Council (£ 3,500)
2007 – 2010	Undergraduate Fellowship of the Cusanuswerk (non-stipendiary)
2006 – 2010	Undergraduate Fellowship of the German National Academic Foundation (€ 4800)

GRANTS AND RESEARCH CONTRACTS

2022 – 2023	A toolkit to inform and advance site-based conservation solutions for migratory marine birds Cambridge Conservation Initiative (£60,481); Co-I and BTO lead, PI: Maria Dias (BirdLife International)
12/2019	Research Contract: Lindisfarne NNR Low Tide and High Tide Bird Count Analyses Natural England (£15,775 ex VAT); Co-I with Graham Austin (BTO)
04/2015	Travel grant: Workshop on Seabird Fisheries Competition, Cape Town, South Africa Farallon Institute (\$ 500)
04/2015	Travel grant: Workshop on Computational Frameworks in Ecology, Durham, NC Statistical and Applied Mathematical Sciences Institute (\$ 1100)
07/2013	Conference travel grant: Deep-sea Fish Biology Symposium, Glasgow, UK Marine Alliance for Science and Technology for Scotland (£ 250)
05/2013	Small grant: Microsatellite genotyping of the hatchetfish <i>Argyropelecus aculeatus</i> Marine Alliance for Science and Technology for Scotland (£ 544)
12/2012	Small grant: Tuna-micronekton interactions in the Chagos Archipelago, Fisheries Society of the British Isles (£ 2,940)
11/2012	Fieldwork travel grant: Echosounder surveys in the Chagos Archipelago, Cusanuswerk (€ 2,369)
06/2010	Conference travel grant: Deep-sea Biology Symposium, Reykjavik, Iceland, German National Academic Foundation (€ 250)

INVITED TALKS AND SEMINARS

05/2025	"From charting change to seeking solutions" US-UK Scitific Forum on Biodiversity Measurement, National Academies of Sciences, Washington DC
10/2023	"Counting birds and other hard problems" Centre for Research into Ecological and Environmental Modelling, University of St Andrews
01/2020	"Integrating citizen science data to better estimate bird population dynamics" Statistics Seminar, University of Glasgow
11/2019	"Integrating citizen science data to estimate bird population trends" Workshop on integrated modelling approaches, UK Centre for Ecology and Hydrology
01/2019	"Monitoring bird populations through volunteer-collected observations" NERC Advanced Training Course "Statistical models for wildlife population assessment and conservation", University of Kent
04/2018	"Measuring and modelling the lives of ocean wanderers" Invited Seminar, British Trust for Ornithology

- 09/2017 "Measuring and modelling the lives of ocean wanderers"
Geography Colloquium, University of Florida
- 03/2017 "Understanding determinants of albatross growth with dynamic energy budget theory"
Mathematical Biology Seminar Series, Virginia Tech
- 03/2017 "Unravelling physiological and ecological determinants of albatross chick growth and survival"
Integrative Organismal Biology Seminar Series, Virginia Tech
- 07/2016 "Linking seabird energetics to population dynamics while propagating uncertainty across scales"
Gordon Research Seminar on Unifying Ecology Across Scales, Biddeford, ME
- 11/2014 "The Pelagic Ecology of Indian Ocean Seamounts and Islands"
Integrative Biology Seminar Series, University of South Florida, Tampa, FL
- 10/2011 "Pelagic sound scattering layers and trophic interactions around Indian Ocean seamounts"
NOAA Southwest Fisheries Science Center, La Jolla, CA, USA
- 06/2011 "Preliminary Results from *RV Nansen* Cruise 2009-410"
IUCN Indian Ocean Governance Workshop, Grahamstown, South Africa

CONTRIBUTED PRESENTATIONS

- 09/2023 Guenther A et al. "AI Bird Monitoring Software: Scientific Data Collection & Validation" (Poster)
Conference on Wind Energy and Wildlife (CWW), Šibenik, Croatia
- 04/2023 **Boersch-Supan PH** "Modelling life cycle-event phenology using biometrics collected by citizen science ringers" (Talk)
EURING Analytical Meeting, Montpellier, France
- 06/2022 **Boersch-Supan PH** "Bayesian inference for categorical and censored regression models for phenological data" (Talk)
International Statistical Ecology Symposium, Cape Town, South Africa
- 11/2021 **Boersch-Supan PH** "Top-down and bottom-up approaches for regional biodiversity trend estimation" (Talk)
BOUsci21 - Developments in monitoring science
- 08/2021 **Boersch-Supan PH** "moult and moultmcmc: Inference for moult phenology models" (Talk)
AOS & SCO-SOC Virtual Meeting 2021
- 06/2021 **Boersch-Supan PH** "Categorical regression models for phenological data" (Talk)
Meeting of the National Centre for Statistical Ecology 2021
- 06/2021 **Boersch-Supan PH, Hanmer HJ, Robinson RA** "Bayesian inference for models of avian moult timing" (Poster)
EURING Analytical Meeting June 2021 [10.6084/m9.figshare.14601513.v2](https://doi.org/10.6084/m9.figshare.14601513.v2)
- 11/2020 Nguyen KH, **Boersch-Supan PH**, Harwood VJ, Rohr JR "Mismatches in thermal optima of *Schistosoma mansoni* and *Biomphalaria* spp. life-history traits shift the thermal optimum of schistosomiasis transmission under different intervention scenarios" (Talk)
American Society for Tropical Medicine and Hygiene annual meeting (virtual conference)
- 06/2020 **Boersch-Supan PH** "Integrating citizen science data sets to improve a national bird monitoring scheme" (Talk)
International Statistical Ecology Conference (virtual conference)
- 07/2019 **Boersch-Supan PH, Trask A, Baillie S** "Population trend estimation from semi-structured citizen science data" (Talk)
Meeting of the National Centre for Statistical Ecology 2019, Edinburgh, UK
- 04/2019 **Boersch-Supan PH, Trask A, Baillie S** "Population trend estimation from semi-structured citizen science data" (Talk)
EBCC Bird Numbers 2019, Evora, Portugal
- 09/2018 **Boersch-Supan PH, Peat HJ, Trathan PN** "Opportunistic central-place foraging in an otherwise rigid annual movement cycle" (Talk)
Seabird Group Conference 2018, Liverpool, UK

- 07/2018 **Boersch-Supan PH**, Peat HJ, Trathan PN "Determining the phenology of marked and unmarked seabirds from a very large force sensor data set" (Talk)
International Statistical Ecology Conference, St Andrews, UK
- 07/2018 **Boersch-Supan, PH** "Bayesian inference for bioenergetic models" (Poster)
British Ecological Society Quantitative Ecology SIG Meeting, St Andrews, UK
- 06/2018 **Boersch-Supan PH** "Counting and weighing penguins really fast with Rcpp" (Talk)
satRday, Cardiff, UK
- 06/2017 **Boersch-Supan PH**, Phillips RA, Ryan SJ, Johnson LR "Bayesian parameter estimation for Dynamic Energy Budget models of albatross growth" (Talk)
5th Symposium on Dynamic Energy Budget Theory, Tromsø, Norway
- 09/2016 **Boersch-Supan PH**, Phillips RA, Ryan SJ, Johnson LR "Unravelling physiological and ecological determinants of albatross chick growth" (Talk)
6th International Albatross and Petrel Conference, Barcelona, Spain
- 09/2016 Borrelle SB, **Boersch-Supan PH**, Gaskin CP, Towns DR: "Influences on seabird recolonization to offshore islands following predator eradication" (Talk)
6th International Albatross and Petrel Conference, Barcelona, Spain
- 06/2016 **Boersch-Supan PH** and Johnson LR "deBInfer: Bayesian inference for dynamic models in R" (Talk)
International Statistical Ecology Conference, Seattle, WA
- 06/2016 Johnson LR, **Boersch-Supan PH**, Ryan SJ, Phillips RA "Changing measurements of changing movements? Detecting movement patterns across multiple generations of tracking technology" (Poster)
International Statistical Ecology Conference, Seattle, WA
- 06/2016 Johnson LR and **Boersch-Supan PH** "deBInfer: Bayesian inference for dynamic models in R" (Poster)
International Society for Bayesian Analysis World Meeting, Sardinia, Italy
- 06/2016 Gajewski ZJ, Stevenson L, **Boersch-Supan PH**, Pike D, Roznik E, Johnson LR "Do strains of the amphibian chytrid fungus exhibit local adaptation?" (Poster)
14th Ecology and Evolution of Infectious Disease Meeting, Ithaca, NY
- 10/2015 **Boersch-Supan PH**, Peat HJ, Trathan PN "The timing of foraging, moult, and migration in breeding macaroni penguins" (Poster)
2nd World Seabird Conference, Cape Town, South Africa
- 10/2015 **Boersch-Supan PH**, Burgan S, Phillips RA, Ryan SJ, Johnson LR "Unravelling physiological and ecological determinants of albatross chick growth" (Talk)
2nd World Seabird Conference, Cape Town, South Africa
- 09/2015 Kemp KM, **Boersch-Supan PH**, Rogers AD "Pelagic fish community composition of the South West Indian Ocean ridge" (Talk)
14th Deep-sea Biology Symposium, Aveiro, Portugal
- 04/2015 **Boersch-Supan, PH**, Phillips, RA, Ryan, SJ, Johnson, LR "Modelling Albatross Bioenergetics and Foraging Behaviours" (Poster)
4th Symposium on Dynamic Energy Budget Theory, Marseille, France
- 04/2015 **Boersch-Supan, PH**, Phillips, RA, Ryan, SJ, Johnson, LR "Modelling Albatross Bioenergetics and Foraging Behaviours" (Poster)
SAMSI Workshop on Computational Frameworks in Ecology, Durham, NC
- 07/2013 **Boersch-Supan, PH**, Freer JJ, Brierley, AS, Rogers, AD "Topographic blockage contributes to the diet of Indian Ocean seamount fishes" (Talk)
FSBI Symposium 2013, Glasgow, UK
- 07/2013 Freer JJ, **Boersch-Supan, PH**, Rogers, AD "Population genetics of the hatchetfish *Argyroleucus aculeatus* in the southwest Indian Ocean" (Talk)
FSBI Symposium 2013, Glasgow, UK

- 10/2011 Bell C, **Boersch-Supan PH**, Rogers AD "Molecular Analysis of Larval Diversity in the South-west Indian Ocean Ridge" (Talk)
World Conference on Marine Biodiversity, Aberdeen, UK
- 10/2011 Rogers AD, **Boersch-Supan PH**, Kemp KM "High Seas Deep-Sea Fisheries in an Ecosystem Context: The South West Indian Ocean Ridge Project" (Digital Poster)
World Conference on Marine Biodiversity, Aberdeen, UK
- 03/2011 Bell C, **Boersch-Supan PH**, Rogers AD "Molecular Analysis of Larval Diversity in the South-west Indian Ocean Ridge" (Poster)
12th Student Conference on Conservation Science, Cambridge, UK
- 02/2011 Rogers AD, **Boersch-Supan PH**, Kemp KM "High Seas Deep-Sea Fisheries in an Ecosystem Context: The South West Indian Ocean Ridge Project" (Poster)
ZSL Symposium: Marine Protected Areas on the High Seas, London, UK
- 06/2010 **Boersch-Supan PH**, Read J, Brierley AS, Rogers AD "Distribution of epi- and mesopelagic scattering layers around Indian Ocean seamounts" (Talk)
12th Deep-sea Biology Symposium, Reykjavik, Iceland

PROFESSIONAL DEVELOPMENT AND WORKSHOP ATTENDANCE

- 06/2020 "Spatial modeling and visualization of species distribution and disease risk using R and INLA"
Workshop led by Paula Moraga at ISEC 2020
- 06/2020 "Stan for modern ecological modelling"
Workshop led by A. MacDonald, D. Simpson and V. Leos-Barajas at ISEC 2020
- 07/2018, 11/2019 "Data Integration for Large Scale Ecological Models"
Two workshops led by N. Isaac, Centre for Ecology and Hydrology, Wallingford, UK
- 03/2018 "Spatial Capture Recapture Models"
Workshop taught by A. Royle, A. Fuller, and R. Chandler, Banff, Canada
- 08/2017 "Software Carpentry Instructor Training"
- 06/2016 "Bayesian Decision Theory and Model Selection"
Workshop taught by M. Hooten, P. Williams, and T. Hefley, Seattle, WA
- 11/2015 "Guidelines and Best Practices to Determine Seabird-Fisheries Competition"
Department of Environmental Affairs, Cape Town, South Africa
- 08/2015 "Bayesian Modeling for Socio-Environmental Data"
National Socio-Environmental Synthesis Center, Annapolis, MD
- 04/2015 "Computational Frameworks for the Ecological Sciences"
Workshop combining software carpentry training and scientific case studies
Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC
- 02 – 04/2015 "8th International Course on Dynamic Energy Budget Theory"
University of South Florida and Centre International de Rencontres Mathématiques, Marseille, France
- 02/2014 "Agent-based Modelling", Oxford, UK
IT Learning Programme, University of Oxford
- 07/2011 "Applied Spatio-temporal Data Analysis with FOSS: R+OSGeo", Landau, Germany
Summer school taught by various R and GIS developers
- 06/2011 "Introduction to Bayesian Analysis and MCMC" and
"Hierarchical Modelling of Spatial and Temporal Data", Southampton, UK
Short courses taught by A. Gelfand (Duke University) and S. Sahu (University of Southampton)
- 11/2010 Taxonomic Workshop at the South African Institute of Aquatic Biodiversity
Identifying mesopelagic fishes and cephalopods and processing for curation.
- 09/2009 "Climate Modelling", Guidel, France
Summer School of the German National Academic Foundation

TEACHING

2019 – 2025	Guest Lecturer: Big Data in Conservation Undergraduate level course in Applied Ecology, University of Cambridge
2019 – 2025	A Basic Introduction to Statistics for Conservation Science: Study Design and Analysis Workshop at the Student Conference on Conservation Science, University of Cambridge
2018	Guest Lecturer: Seabird Ecology Undergraduate level course in Marine Biology, University of Essex
Fall 2017	Helper: Data Carpentry Workshop Two day workshop on R, SQL, and OpenRefine for data management and analysis University of Florida Informatics Institute
Fall 2017	Guest Lecturer: Data Management for Biologists Graduate level course in Biology, University of South Florida
Spring 2017	Instructor of Record: Biometry Graduate level course in Biology, University of South Florida
Fall 2015	Guest Lecturer: Data Analysis for Scientists Graduate level course in Biology, University of South Florida
Spring 2015	Guest Lecturer: Mathematical Biology Graduate level course in Biology, University of South Florida
2010 – 2014	Tutor in Marine Ecology, Animal Adaptations and Statistics for Biologists This consisted of small group teaching (1-3 students per session) to cover lecture material in depth. Biological Sciences Undergraduate Programme, University of Oxford Oxford Overseas Studies Program, Stanford University
2010	Teaching Assistant: Statistics with R (Intensive Course for 1 st year PhD students) Department of Zoology, University of Oxford

MENTORING

Graduate	N Dowhaniuk (PhD-track, UF, 2016), S Burgan (MS-track, USF, 2014/2015), J Freer (MRes Oxford/Glasgow, 2012), C Bell (MSc, Oxford, 2011)
Undergraduate	K Nelson (USF, 2016), L Olivier (USF, 2015/2016), C Taylor (Oxford, 2012), L Sumner-Roney (Oxford, 2011)
High-School	O Hallett (Waynflete Programme, Magdalen College School Oxford, 2014), C Kloecker (Work experience student, Oxford 2012)
2004 – 2008	Mentor at the Heidelberg Life-Science Lab (STEM Initiative of the German Cancer Centre) <i>Coorganisor of International Science Academy Estonia 2007 and the Ornithological Wadden Sea Excursion 2006; Mentoring of high-school students for research projects and lab courses 2004 – 2007</i>

POLICY AND OUTREACH

2009 –	Contribution of texts, photographs, and scientific visualisations to press releases and blogs Clients/media outlets included BTO, BBC Nature News, IUCN, Global Ocean Commission and various expedition blogs. Selected posts at pboesu.github.io/blog
2018 –	Member of the Technical Advisory Group for the State of Nature Partnership The State of Nature Partnership is lead by RSPB rspb.org.uk/stateofnature
12/2017	Public Outreach Lecture on Polar Seabirds (Invited Talk) Tampa Audubon Society, Tampa FL
07/2017	Co-presenter "Bringing Polar Research to your Classroom" National Science Teachers Association, STEM Forum, Orlando, FL
02/2016	Polar-ICE Science Communication Workshop Audubon Aquarium, New Orleans, LA
02/2013	Curation of an exhibition showcasing deep-sea habitats and biodiversity Launch event of the Global Ocean Commission, London, UK

04/2012	Workshop on Integrated Solutions for Synergistic Ocean Stresses and Impacts (Member of organising team) International Programme on the State of the Oceans, Oxford, UK
06/2011	Indian Ocean Governance Workshop (Invited Speaker) International Union for the Conservation of Nature, Grahamstown, South Africa
04/2011	Workshop on Ocean Stresses and Impacts (Member of organising team) International Programme on the State of the Oceans, Oxford, UK
01/2010	Public Outreach Lecture on Deep-sea Research (Invited Talk) Symposium on the History of Exploration, Darmstadt, Germany

FIELDWORK EXPERIENCE

2018 –	Volunteer bird surveyor for various BTO and RSPB surveys
2014, 2015	Assisted in capture of seabirds for biologger deployment and ring recoveries Faroe Islands, with Dr. J. Danielsen, 1 Week
11 – 12/2012	Research cruise in the central Indian Ocean <i>MV Pacific Marlin</i> , Chagos Archipelago, 3 Weeks
11 – 12/2011	Research cruise in the SW Indian Ocean <i>RRS James Cook</i> and <i>ROV KIEL6000</i> , Cruise JCO66/67, SW Indian Ocean, 7 Weeks
2009	Research cruises in the NE Atlantic and SW Indian Ocean <i>RV Celtic Explorer</i> , Cruise CE0911, Porcupine Seabight, 2 Weeks <i>RV Dr. Fridtjof Nansen</i> , Cruise 2009-410, SW Indian Ocean, 6 Weeks
04 – 12/2005	Ornithological Field Surveys on Langeoog Island Wadden Sea National Park of Lower Saxony, Germany Breeding bird territory mapping; shorebird roost counts; beached bird surveys.

SERVICE AND PROFESSIONAL SOCIETIES

Editorial Service	Animal Conservation (Senior Editor 2021–2024; Associate Editor 2018–2021)
Journal Review	Acta Tropica, Animal Conservation, Biodiversity and Conservation, Biological Reviews, Biology Letters, Deep-Sea Research I, Ecological Applications, Ecological Solutions and Evidence, Environmental Impact Assessment Review (EIA Review), Epidemics, Ibis, Journal of Applied Ecology, Journal of Open Research Software, Journal of Open Source Software, Marine Ecology Progress Series, Methods in Ecology and Evolution, Movement Ecology, PeerJ, PLoS ONE, Progress in Oceanography, ReScience, Royal Society Open Science
Grant Review	French National Polar Program, British Ecological Society Research and Outreach Grants
Member	British Ecological Society; Cambridge Conservation Initiative; National Centre for Statistical Ecology; Network of Agricultural, Biological and Environmental Statisticians; The Seabird Group;