Erica S. Nielsen

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Personal Summary

My research aims to use novel molecular tools and modelling approaches to describe the adaptive potential of marine species with regards to global change. Additionally, my work is grounded in evidence-based decision-making, and focusses on how molecular metrics can best be integrated into conservation planning practices. My proficiency in project and time management has led to five peer-reviewed publications, with 39 total citations, and the Conservation Rising Star award for my first article. In addition to written communications, I thoroughly enjoy orating my work, and have presented at multiple local and international conferences, one of which I won best presentation for. A few additional strengths include the ability to think broadly and work creatively, taking initiative on projects, and building and maintaining strong interpersonal connections.

Education

PhD in Zoology | Jan 2018 to March 2020 – 'Using multi-species seascape genomics to conserve areas of evolutionary importance', Stellenbosch University

MSc in Zoology | Jan 2015 to March 2017 – 'Integrating genetics into marine conservation planning in South Africa', Stellenbosch University, *Cum Laude*

BSc in Biology | Sept 2010 to March 2014 – University of California Santa Cruz, *Cum Laude*

Awards & Grants

2019 | Best oral presentation – 12th Annual Science Postgraduate Symposium, South Africa

2018 | Conservation Biology Rising Star Award

2018-2020 | NRF Grantholder Scholarship (R 90,000)

2016-2017 | NRF Freestanding Masters Scholarship (R 80,000)

Employment

Biology Tutor | Stellenbosch University | July 2015 – May 2019
- Designed tutoring exercises and practicals for first and third year biology students
- Tutored a class of roughly 25 students on introductory biology subjects

Lab Technician | Okinawa Institute of Science and Technology | July 2017 - Oct 2017
- Assisted with sampling and culturing of the tunicate, *Oikopleura dioica*
- Aided transcriptomic sequencing lab work and data analyses

Technical Skillset

Bioinformatics | R programming | Molecular lab work | Marxan & Zonation | ArcGIS & QGIS | ABC analyses

Peer Reviews

Conservation Biology

Peer Reviewed Publications

Henriques R., Mann B.Q., **Nielsen E.S**., Hui C., von der Heyden S. Extending biodiversity conservation with functional and evolutionary diversity: a case study of South African Sparid fishes. 2020. African Journal of Marine Science.

Nielsen, E.S., Henriques, R., Toonen, R.J., Knapp, I., Guo, B., von der Heyden, S. 2018. Complex signatures of genomic variation of two non-model marine species in a homogeneous environment. BMC Genomics.19: 347.

Nielsen, E.S., Henriques, R., Beger, M., Selkoe, K., von der Heyden, S. 2017. Multi-species genetic objectives in spatial conservation planning. Conservation Biology. 31: 872-882.

Henriques, R., **Nielsen, E.S**., Durholtz, D., Japp, D. and von der Heyden, S. 2017. Genetic population sub-structuring of kingklip (*Genypterus capensis*–Ophidiidae), a commercially exploited demersal fish off South Africa. Fisheries Research, 187: 86-95.

Paranjpe, D.A., Medina, D., **Nielsen, E**., Cooper, R.D., Paranjpe, S.A. and Sinervo, B. 2014. Does thermal ecology influence dynamics of side-blotched lizards and their micro-parasites? Integrative and Comparative Biology, 54: 108-117.

Publications in Prep or Review (manuscripts upon request)

Nielsen, E.S., Beger, M., Henriques, R., von der Heyden S. A comparison of genetic and genomic approaches to represent adaptive potential in conservation planning. (in review, Biological Conservation)

Nielsen, E.S., Henriques, R., Beger, M., von der Heyden S. Multi-model seascape genomics identifies distinct environmental drivers of selection among sympatric marine species. (in review, BMC Evolutionary Biology)

Nielsen, E.S., Beger, M., Henriques, R., von der Heyden S. Comparing drivers of extant molecular diversity: testing central-margin and refugial-persistence hypotheses in the marine environment. (in prep, Ecography)

Phair, N. L., **Nielsen, E.S**., von der Heyden S. Applying genomic data to seagrass conservation. (in prep, Conservation Biology)

Teaching Experience

2020 | Co-supervisor for Honours project titled: 'Community distribution modelling as a surrogate for genetic diversity hotspots', Stellenbosch University

2020 | Lecturer and teaching assistant for Honours 'Science Communication' short course, Stellenbosch University

2020 | Teaching assistant for 'Ecology Field Course', Stellenbosch University

2019 | Guest lecturer for Honours 'Statistics in R' course, Stellenbosch University

2015-2017 | Teaching assistant for 'Cell Biology', 'Functional Biology', and 'Evolutionary Patterns & Processes' courses, Stellenbosch University

Oral Presentations

2020 | 'Spatial planning for the future: using molecular & modeling tools to identify conservation hotspots', *International Marine Conservation Congress*, Online

2019 | 'Back to the future: Using climatic stability to predict resilience hotspots for conservation', *Conservation Symposium*, South Africa & *Science Postgraduate Symposium*, South Africa

2019 | 'Inferring evolutionary significant areas from climatic stability and genetic diversity', *Western Indian Ocean Marine Science Association Symposium*, Mauritius

2018 | 'Conserving adaptive potential: a multispecies comparison across molecular markers', *Conservation Symposium*, South Africa