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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, specifically under climate change scenarios. My proficiency in project and time management has led to five peer-reviewed publications, with 42 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. 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 – 12<sup>th</sup> 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

## 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 available on 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