

The Marion Island Marine Mammal Programme (www.marionseals.com) is seeking a prospective M.Sc. student (2020-2021) to address demographic questions related to Southern Elephant Seals (*Mirounga leonina*) from sub-Antarctic Marion Island.

Students interested in pursuing an M.Sc. (Zoology) with relevance to the project details should apply by email to Monica Leitner (leitnerm@lantic.net) by 29 February 2020. **Subject: “Prospective SES MSc”**

Interested applicants should have a keen knowledge of population demography, an understanding of current mark-recapture methodology, some knowledge of analytical platforms such as E-SURGE and MARK, and an ability to work efficiently in Program R.

An NRF grantholder-linked bursary (R60 000/year for 2 years) is available to the successful applicant.

Applications must include a letter of motivation, CV, and copies of academic transcripts, qualifications and identification.

Project details

Photogrammetry provides a means to estimate body size and mass by taking photographs of a relatively inert individual from different angles with standardised camera settings (de Bruyn *et al.* 2009). Photographs are compiled to build a 3D model of the individual with accurate dimensions. Photogrammetry of elephant seals has been conducted at Marion Island since 2006 (Pistorius *et al.* 2011). Marked individuals are photographed regularly during pre-breeding and breeding life stages, allowing for growth trajectories to be tracked throughout an individual's life. The M.Sc. student will have the opportunity to investigate how body size and mass shape male life history traits (e.g. survival, recruitment and social dominance) from birth to death.

References and additional readings

de Bruyn, P.N., Bester, M.N., Carlini, A.R. & Oosthuizen, W.C. 2009. How to weigh an elephant seal with one finger: a simple three-dimensional photogrammetric application. *Aquatic Biology* 5: 31-39.

Galimberti, F., Sanvito, S., Braschi, C. & Boitani, L. 2007. The cost of success: reproductive effort in male southern elephant seals (*Mirounga leonina*). *Behavioral Ecology and Sociobiology* 62: 159-171.

Lloyd, K.J., Oosthuizen, W.C., Bester, M & de Bruyn, P.J.N. 2019. Trade-offs between age-related breeding improvement and survival senescence in highly polygynous elephant seals: dominant males always do better. *Journal of Animal Ecology* in press.

Pistorius, P.A., de Bruyn, P.J.N. & Bester, M.N. 2011. Population dynamics of southern elephant seals: a synthesis of three decades of demographic research at Marion Island. *African Journal of Marine Science* 33: 523-534.