

Is the Chagos Archipelago one of the last tropical refuges for cetaceans? Acoustic spatio-temporal diversity (PhD project)

Start date and duration: 1st May 2022 (3 years)

Institution and funding: This position will primarily be based at Faculty of Fisheries and Ocean Sciences of Ocean University of Sri Lanka, with support from Oceanswell (Sri Lanka), University of St Andrews (UK), University of Plymouth (UK), and the Zoological Society of London (UK). This is a full funded position with a monthly stipend, and travel and expenses paid.

Supervisory team:

- Prof M.F.M. Fairoz (Ocean University)
- Dr Asha de Vos (Oceanswell and University of Western Australia)
- Dr Danielle Harris (University of St Andrews)
- Dr Clare Embling (University of Plymouth)
- Dr Tom B Letessier (Institute of Zoology, Zoological Society of London)

Context & background: Cetaceans are charismatic yet vulnerable marine animals that capture the public imagination whilst serving a vital ecological role in our oceans. But many whale populations are still recovering from historic whaling and cetaceans worldwide are threatened by fishery bycatch, ship strikes and increasing noise pollution. The Chagos Archipelago may be one of the last tropical refuges where cetaceans remain protected from human impacts, yet we know very little of their diversity, distribution and abundance in the mid Indian Ocean. The IUCN's Marine Mammal Protected Area Task Force identified the Chagos Archipelago as an 'Area of Interest' but data deficient, requiring 'enhanced effort for monitoring species of marine mammal'. This project provides a unique opportunity to promote and enhance regional science capacity and to conduct the first study of cetacean abundance and distribution within the Chagos Archipelago.

This studentship will use historical and new acoustic data from the Chagos Archipelago, including 3 years of continuous recordings from a network of hydrophones. The student will identify and analyse a variety of cetaceans from acoustic data to investigate spatio-temporal variation in cetacean habitat use and behaviour within the Chagos Archipelago. This forms part of a larger project, including another PhD student based in the UK, a dedicated wildlife officer on the fisheries patrol vessel, and a team of researchers from Sri Lanka, Maldives and the UK. There will be opportunities for involvement in science outreach within the UK, Sri Lanka, the Maldives, and the Chagos Archipelago. This will provide the first understanding of the cetacean acoustic diversity, distribution and behaviour within the Chagos Archipelago, and be used to guide future conservation and management actions.

Training and funding: This project will provide comprehensive training in statistical analysis in R, acoustic data analysis and science communication skills (in Sri Lanka). Funding includes attendance at international conference(s), and potential fieldwork training (in Chagos/Maldives).

The successful applicant will be fully funded to undertake their research by a monthly stipend and all travel expenses will be paid.

Application specification: This opportunity will suit a Sri Lankan student interested in acoustics and studying the vocalisation of cetaceans. We're looking for a motivated student that is keen to learn acoustic and statistical techniques. This position would suit a candidate with the following skills and experience:

- A minimum of a Bachelor's Degree in a STEM (science, technology, engineering or maths) subject from a recognised university (at least with the upper GPA) acceptable to register as a PhD candidate including any other post graduate qualification/s such as MSc etc.
- At least one year of proven research experience/ record at a recognized institution/University
- Comfortable with travel (both national and international) and ability to work independently
- Good communication skills

- Experience with quantitative skills such as R, MATLAB (but relevant training will also be provided)
- An interest in science communication
- Ability to write a range of different outputs, including peer-reviewed publication and reports
- Good written English language skills are a must
- Fluency and ability to work in English

How to apply

Please send the following documents for the attention of Prof. MFM Fairoz fairoz@ocu.ac.lk and Dr. Asha de Vos info@oceanswell.org. Please save each document as follows;

'Surname_Coverletter', 'Surname_Example', 'Surname_CV'. For example 'DeVos_Coverletter' etc.

Ensure the subject line of application email states your SurnameFirstname_PhDBioacoustics. For example DeVosAsha_PhDBioacoustics

- Cover letter explaining your suitability for the role based on the listed skills and experience above
- Example of work in English (e.g. BSc thesis, MSc thesis, publication)
- Curriculum vitae (2 pages)
- Two letters of recommendation specifically highlighting the student's suitability for this PhD project, to be sent directly to Prof. Fairoz and Dr. de Vos on or before the application deadline. Ensuring the recommendation letters arrive in a timely manner is the responsibility of the applicant.

The deadline for applications is 28th February 2022, following which successful candidates will be invited for a short interview in the following weeks. Late applications will not be considered.

Relevant references

Frank, S.D., Bartolo, M.A., and Harris, D. (2019) Analysis and automatic detection of potential Omura's whale signals in the Indian Ocean. *The Journal of the Acoustical Society of America*, 146: 2806.

Letessier, T.B., Mouillot, D., Bouchet, P.J., Vigliola, L., Fernandes, M.C., Thompson, C., *et al.* (2019) Remote reefs and seamounts are the last refuges for marine predators across the Indo-Pacific. *PLOS Biology*, 17(8): e3000366.

Miksis-Olds, J.L., Harris, D.V., and Mouw, C. (2019) Interpreting fin whale (*Balaenoptera physalus*) call behavior in the context of environmental conditions. *Aquatic Mammals*, 45(6): 691-705.

Sousa, A.G., and Harris, D. (2015) Description and seasonal detection of two potential whale calls recorded in the Indian Ocean. *The Journal of the Acoustical Society*, 138(3): 1379-1388.