



SCAR Visiting Scholar Scheme

Report



International
Science Council



With the Seabird Conservation team at AAD (Elize Ng, Barbara Wienecke, Silvia Olmastroni, Louise Emmerson, Tom Sloane, Colin Southwell, Marcus Salton)

Name of Visiting Scholar Silvia Olmastroni

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Dates of Visit

12 march-01 April 2023

Summary of Visit

The visiting scholar proposal was motivated by an opportunity to update and extend the results from the Italian penguin monitoring program and to allow a comparison with results from the Australian monitoring program. Specifically, this visit provided an opportunity to go through the historical dataset and recent results from time lapse cameras to compare and integrate with data from different Antarctic regions with different environmental conditions. Due to the COVID-19 emergency my visit to Hobart had to be rescheduled twice.

With Dr. L. Emmerson we conducted initial data analysis and planned several steps to focus on historical dataset to compare results among different Antarctic areas. Part of the schedule consisted in checking the existing dataset and identifying comparable data between the programs. During my visit to AAD, several days were dedicated to extraction of precise set of data of penguin mass and phenology to make them comparable with other dataset.

As a result, we have initiated a process for comparing previously collected data on breeding success, body mass change, phenology, and foraging behavior of Adélie penguins from Terra Nova Bay and Eastern Antarctic colonies that will continue also after my return to Italy.

While working on these datasets I also met several researchers involved in Antarctic research including those involved with assessing faecal samples to determine seabird diet and others that focused on the physical environment of the Southern Ocean. I attended a meeting of the Southern Ocean Ecosystem program and could speak to some researchers about reciprocal interests.

Meeting in-person with PhD students and collaborators facilitated and improved progress in scheduled activities. Joint dataset and samples' exchange will broaden areas of research by allowing results to be analyzed both locally and on a larger scale for different Antarctic regions.

I had the opportunity to meet with Ying Xin Elize Ng, a PhD student who is working on seabird's samples for a genetics project from UTAS and AAD, where we collaborated from 2020 with samples from the Ross Sea which will be included in a scientific paper. This meeting provided an opportunity to further discuss sample assessment protocol and the emerging results from the study.

Meetings with Dr. Marcus Salton and Dr. Colin Southwell about data collected by shared remote-operated instrumentation in Antarctica, such as time lapse camera and automated weighbridge monitoring system were useful to discuss and plan underway and future joint scientific articles.

With Dr Salton we also spoke about penguin-born instrumentation and devices used in the field and the relative type of data collected both by satellite tracking and data loggers for future field activities on different seabirds' species.

Dr. Emmerson and I held a zoom meeting with Dr. Javed Riaz (previously UTAS, but currently based in the Falklands) to commence a collaboration with him and University of Siena team on assessing dive data and foraging behavior. This work will be integrated and compared with similar data from East Antarctica to allow a comparison of the penguins foraging behavior and success in the context of behavioural adaptability in response to variation in environmental conditions. Despite my visit being largely delayed, in the end we were able to accomplish the main part of the original program.

Capacity Building, Education and Outreach Activities

Before my visit educational and outreach activities were carried out on Antarctic research through seminars at the National Antarctic Museum at Siena's division (Museo Nazionale dell'Antartide, MNA). I have collaborated with Department of Physical, Earth and Environmental Sciences (Prof. Ilaria Corsi's Lab) and Department of Life Science (Prof. Francesco Ferretti's Lab) where post graduate students and collaborators were involved in laboratory analysis, data analysis and scientific papers writing regarding [the PenguinERA project](#).

I attended and participated in a public lecture and a meeting at Australian Antarctic Division led by Dr. Louise Emmerson and the Seabirds Conservation team, where we all could speak about group's research, working in Antarctica on seabirds, and the outcomes from our research results.

I am now collaborating on the preparation of a manuscript led by Dr. Colin Southwell on Adélie penguins' phenology.

Comparison of foraging locations as reported by satellite transmitters will be the subject of one or a series of publications which will involve AAD and University of Siena team.

I believe that thanks to my visit we were able to translate many of the hoped-for possible collaborations into reality.

Future Plans

Future common activities and plan for further work with Dr. Louise Emmerson and her team were planned. We plan to produce scientific papers following the results of dataset analysis and to compare different Antarctic areas.

On a longer-time scale, we have planned to continue instrumentation sharing in the field through a Seabird Observatory proposed by University of Siena (Prof. Ferretti's Lab) for the Terra Nova Bay area, as a project under the Italian National Antarctic Program in 2022. The project has been recently favorably evaluated but not funded by the Italian program, so we have to re-think about this part of the schedule.