SEABIRD-FISHERIES INTERACTIONS:
THE RELATIVE IMPORTANCE OF THE FALKLAND ISLANDS FISHERY IN SHAPING THE LOCAL BLACK-BROWED ALBATROSS POPULATION

Work conducted with support from the Falkland Islands Government Environmental Studies Budget (ESB) 2021/2022

Report to FIG

Amanda Kuepfer

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1. RESEARCH TEAM

Amanda Kuepfer (University of Exeter) – PhD student, grant holder
Dr. Stephen Votier (University of Exeter) – Principal supervisor
Prof. Richard Sherley (University of Exeter) – First supervisor
Prof. Stuart Bearhop (University of Exeter) – Second supervisor
Dr. Paulo Catry (MARE – Marine and Environmental Sciences Centre, ISPA, Lisbon) – Co-supervisor
Dr. Paul Brickle (SAERI – South Atlantic Environmental Research Institute) – Local supervisor
Dr. Alexander Arkhipkin (FIFD – Falkland Islands Fisheries Department) – Local supervisor

2. PURPOSE OF REPORT

In accordance with conditions of offering of the ESB grant (2021/2022), this report serves to inform the Falkland Islands Government of the use of the ESB funds and project outputs to date.

3. USE OF FUNDS

The funds were used to support and progress the PhD project of "*Seabird-fisheries interactions: The relative importance of the Falkland Islands fishery in shaping the local black-browed albatross population*".

3.1. Research

3.1.1. Chapter 1: Discard management study

This study forms the first chapter of my PhD thesis and uses data that were collected as part of a discard management study by the Falkland Islands Fisheries Department in 2015 and 2017. Peer-reviewed publication of this work is listed as a high priority under the Falkland Islands National Plan of Action for Reducing Incidental Catch in Trawl Fisheries (Objective 7.1; Kuepfer et al., 2018). The manuscript was accepted and published in the peer-reviewed journal of Biological Conservation in January 2022.
https://doi.org/10.1016/j.biocon.2022.109462

3.1.2. Chapter 2: Multi-annual trends in discard use by chicks

This study forms the second chapter of my PhD thesis and uses chick regurgitate data collected at the long-term demographic study site at New Island during eight seasons between 2004 and 2020, including by myself in 2019 and 2020. The study was submitted for peer-reviewed publication in November 2021 and was published in the journal of ICES Journal of Marine Science in May 2022. https://doi.org/10.1093/icesjms/fsac069

3.1.3. Chapter 3: Inter-annual and inter-colony difference in discard use, as assessed using a complementary approach

This study uses a complementary dietary approach (stomach contents and stable isotopes) to assess and compare the diet and discard use by chicks at New Island and Steeple Jason Island, during two consecutive seasons. Stable isotope sample processing and analyses were finalised in August 2021. The study was completed as a thesis chapter in May 2022, and a manuscript will be submitted to the peer-reviewed journal of Marine Biology in July 2022.

3.1.4. Chapter 4: Seabird-fisheries overlap during breeding

This study uses Global Fishing Watch data and multi-annual GPS tracking data of black-browed albatrosses from New Island, Steeple Jason Island and Beauchêne Island to assess the extent to which breeding birds overlap with fisheries during egg-incubation and chick-rearing. Data cleaning and analysis commenced in January 2022 and are on-going. It is envisaged that analyses will be completed by August 2022, and write-up of this final thesis chapter will be completed by October 2022.

3.2. Stable isotope sample processing

Due to restricted laboratory access as a result of covid restrictions in the UK, funds were also used for payment of an experienced laboratory assistant to process stable isotope samples for Chapter 3 at the University of Exeter (completion date: 31 August 2021).

3.3. Studentship and administration

Funds were further used in support of a monthly studentship stipend and an annual university tuition fee at the University of Exeter.

4. PROJECT OUTPUTS

4.1. Project progress

- Completion and publication of Chapter 1 (January 2022):
  Kuepfer A, Sherley RB, Brickle P, Arkhipkin A, Votier SC (2022) Strategic discarding reduces seabird numbers and contact rates with trawl fishery gears in the Southwest Atlantic. Biol Conserv 266:109462. https://doi.org/10.1016/j.biocon.2022.109462
- Completion and publication of Chapter 2 (May 2022):
  Kuepfer A, Votier SC, Sherley RB, Ventura F, Matias R, Anderson O, Brickle P, Arkhipkin A, Catry P (2022) Prey-switching to fishery discards does not compensate for poor natural foraging conditions in breeding albatross. ICES J Mar Sci 0:1–13. https://doi.org/10.1093/icesjms/fsac069

- Completion of Chapter 3 (May 2022)
- Completion of data collation and data processing for Chapter 4.

4.2. Visibility and public engagement

- Two peer-reviewed publications:
  (January 2022, https://doi.org/10.1016/j.biocon.2022.109462,
  May 2022, https://doi.org/10.1093/icesjms/fsac069)
- Poster presentation on black-browed albatross diet (Chapters 2 and 3) at Farmer's week (July 2021)
- Falklands Radio interview about the Discard Management paper (Chapter 1, 04 Feb 2022)
- World Albatross Day news release on social media featuring work from my PhD (26 June 2022)
- Online visibility: Regular posts on social media by New Island wardens and SAERI on progress of my work; information on this PhD can be accessed on the SAERI website https://www.south-atlantic-research.org/research/phd-research-projects/the-importance-of-fisheries-in-shaping-the-ecology-of-black-browed-albatrosses-in-the-falkland-islands/

5. ACKNOWLEDGEMENTS

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