



Darwin Plus: Overseas Territories Environment and Climate Fund Annual Report

To be completed with reference to the "Project Reporting Information Note"
(<https://darwinplus.org.uk/resources/information-notes>)

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes)

Submission Deadline: 30th April 2023

Submit to: BCF-Reports@niras.com including your project ref in the subject line

1 Darwin Plus Project Information

Project reference	DPLUS168
Project title	Understanding increased FI seal bycatch to inform bycatch Action Plan
Territory(ies)	Falkland Islands (FI)
Lead Partner	South Atlantic Environmental Research Institute (SAERI)
Project partner(s)	Falkland Islands Government Department of Natural Resources – Fisheries (DNR-Fisheries) Falkland Islands Fishing Companies Association (FIFCA)
Darwin Plus grant value	£363,563
Start/end dates of project	June 2022 – May 2025
Reporting period (e.g. Apr 2022-Mar 2023) and number (e.g. Annual Report 1, 2)	Apr 2022-Mar 2023 Annual report 1
Project Leader name	Alastair Baylis
Project website/blog/social media	Organisation: https://www.south-atlantic-research.org/ SAERI Twitter: @SAERI_FI SAERI Facebook: https://www.facebook.com/S4ERI/ SAERI blogs: https://www.south-atlantic-research.org/news/
Report author(s) and date	Dr Alastair Baylis, Megan Shapiro, Dr Javed Riaz

1. Project summary

FI is home to globally significant populations of seals and seabirds, including > 50% of the global population of South American fur seals. Seal bycatch and seal-fishery interactions has historically been low. However, in 2017 seal-fishery interactions increased by > 400% in the FI squid fishery. The introduction of SEDs reduced seal mortality substantially, but interactions continue at unprecedented levels and the seal bycatch issue continues to evolve, with higher levels of interactions now being reported in the fin-fish fishery. At present, seal-fishery interactions and SED effectiveness in the fin-fish fishery is poorly understood due to limited observer coverage. In addition, factors contributing to an increase in seal-fishery interactions are presently unknown. Combined, this lack of baseline data limits our ability to adapt and evolve mitigation efforts and national action plans

Work Package (WP) 1 – Trial and deploy net cameras

The FI squid trawl fishery has 100% observer coverage. In contrast, observer coverage in the fin-fish fishery is low (< 10%) and seal-fishery interactions are comparatively poorly understood. We will trial

net cameras on the DNR-Fisheries pre-recruitment surveys with the outlook to subsequently deploy on fin-fish vessels. The data collected will allow us to quantify the depth and frequency of net entry by seals, seal behaviour, and interactions with Seal Exclusion Devices (SEDs) OR SED efficiency. Ultimately, data will enable a better understanding of seal-fishery interactions within the fin-fish fishery.

WP2 – Occurrence of interactions in space and time

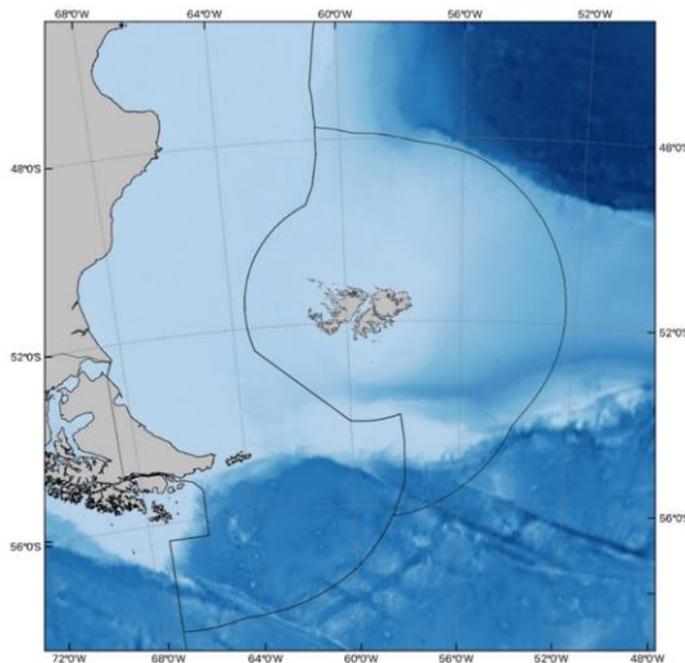
During the initial bycatch ‘wave’ in 2017, seals were brought back to the laboratory. Necropsies revealed that about 30 % were lactating female fur seals – implying colony origin was FI given the distance to other breeding colonies (e.g., Uruguay). To better understand occurrence of interactions we will: (1) Track seal movements using satellite tags to understand behaviour and quantify spatial and temporal overlap with fisheries. (2) Determine whether seals are following vessels and are habituated to net feeding or whether interactions are driven by proximity to seal colonies.

WP3 - Factors that predict and increase bycatch risk

Develop mathematical models that combine observer data and tracking data (see WP 2) with environmental and operational data to quantify which variables explain and predict seal-fishery interactions. Provide recommendations on how findings can support and inform management.

WP4 – Trophodynamic model and trophic changes over time

Use dietary data to quantify trophic links between seals and prey to facilitate ecologically sustainable development frameworks that are key to ecosystem-based fisheries management – a long-term goal of the DNR-Fisheries. We will use Ecopath and Ecosim modelling approaches and information on the distribution, abundance, and diet of fin-fish, squid and seals to understand their ecological roles and the importance of commercial caught species in seal diet. Recognizing limited seal dietary data exists, we will use DNA analysis to enhance knowledge of contemporary diet, and compound specific stable isotope analysis using an existing seal tooth collection to understand dietary changes over time.



The Falkland Islands in relation to southern South America and their Conservation Zones.

2. Project stakeholders/partners

The project was designed as a collaborative project with the Falkland Islands Government (FIG) Department of Natural Resources (DNR) - Fisheries and the Falkland Islands Fishing Companies Association (FIFCA). Both FIG and FIFCA are also key stakeholders. The project has therefore worked

closely with both FIG and FIFCA during the project set-up phase and support received from our project partners to date, is exceptional.

Specifically:

- DNR-Fisheries were part of the recruitment for the Net Camera Specialist, taking part in the interview process and in selection of the preferred candidate.
- Worked closely with DNR-Fisheries (Veronica Irriarte) to identify suitable net cameras for the Falkland Islands trawl fishery.
- DNR-Fisheries (Dr Andreas Winter) and Beauchene Fishing LTD enabled Megan Shapiro (DPLUS168 Net Camera specialist) to trial net cameras on the DNR-Fisheries recruitment survey (WP1).
- DNR-Fisheries have provided access to data, and guidance with regard to existing datasets held within DNR-Fisheries that could be relevant to modelling seal-fishery interactions (WP2 and WP3).
- FIFCA (Mr James Bates) provided the opportunity to talk at the Falklands Fishery Liaison Group on the 8 February 2023. Alastair Baylis (DPLUS168) presented an overview of the project to industry representatives.
- FIFCA worked with the Net Camera Specialist to identify several opportunities for further camera deployments.
- All partners are involved in planning, monitoring and evaluation through the Project Management Group. Our first Project Management Group meeting was held on the 28th March. Meeting notes are available on request.

3. Project progress

3.1 Progress in carrying out project Activities

Activities

1.1 Project Manager (x1) and Specialist to lead net camera deployment (x1) recruited

As explained in the half-year report, although recruitment was delayed, we are very pleased to report that both the Project Manager (Dr Javed Riaz) and net camera specialist (Megan Shapiro) were successfully recruited and commenced in January.

1.2 Net cameras trialed with DNR-Fisheries

Our net camera specialist went out to sea from February 4th-20th on the F/V Igueldo as part of the Falkland Islands Fisheries Department (FIFD) pre-Ioligo season research cruise. This research cruise provided an opportunity to trial and troubleshoot cameras – something which would be difficult to achieve during commercial operations. Megan was able to deploy two of SAERI's new SOLOx Netview cameras on a total of 48 trawls. For each trawl, different positions and orientations on the net were tested in order to find the best view of the SED. Many different camera configurations and parameter set-ups were also tested, in order to find the best combination of settings to provide the best quality data. Like all gear trials, there was good trouble shooting to be had, which naturally comes with new found knowledge on the specific intricacies that make each piece of equipment work. Megan has been in communication with the manufacturers, Williamson and Associates (WASSOC) to troubleshoot and work to better protect and effectively utilise the cameras on near-bottom trawls. Megan will also be working with them to replace internal pieces of the cameras that may have been damaged while deployed on the near-bottom trawls. Megan has been able to acquire and collate existing underwater footage of seal interactions with fishing nets from FIFD and industry, and is analysing the footage to find

any patterns of seal behaviours during fishing operations. Megan has had numerous meetings with different personnel from FIFD to talk about the history of seal-fishery interactions in the area, WASSOC to work on camera malfunctions, CFL to get protective cages built for the cameras, and FIFCA and Fortuna Fishing to inquire about getting on more fishing vessels. A report on the net cameras trials is appended to the submission of the annual report.

1.3 Rollout of net cameras to fishing vessels with DNR-Fisheries

Activity not within this reporting period. However, our Net Camera specialist has approached industry and through several meetings has identified opportunities for deploying cameras on commercial vessels during commercial operations.

2.1 Deploy biologging tags on seals

Activity not within this reporting period. However, we have (i) applied and received the necessary research permits and ethics to undertake deployments on fur seals and (ii) purchased satellite tags. Fieldwork to undertake this activity (planned July 2023).

2.2 Results presented in a report delivered to PMG. Report re-focused for a scientific journal

Activity not within this reporting period.

3.1 Desktop review, data collated and metadata stored on the IMS-GIS data centre portal

We have identified the 10 datasets and have worked closely with fisheries to access the data. Some of this data is commercial in-confidence.

3.2 Review report and metadata catalogue delivered to Project partners

Activity not within this reporting period.

4.1 PM build trophic model in relevant modelling environment (e.g. Ecopath with Ecosim)

Activity not within this reporting period.

4.2 Undertake and report on DNA analysis on seal scat

Activity not within this reporting period.

4.3 Undertake and report on compound specific stable isotope analysis on seal teeth

Activity not within this reporting period.

5.1 Project Management Group (PMG) established, with representatives from DNR-Fisheries, industry and SAERI

We established a PMG, which includes Dr Andreas Winter (DNR-Fisheries), Dr Alexander Arkhipkin (DNR-Fisheries), James Bates (Falkland Islands Fishing Companies Association), and Megan Shapiro, Dr Javed Riaz and Dr Alastair Baylis (SAERI). The first PMG meeting was held on 30 March 2023. Meeting minutes are available on request.

5.2 Conduct workshop/present findings on WP1

Activity not within this reporting period.

5.3 Conduct workshop, compile and publish agreed recommendations for seal-bycatch

Activity not within this reporting period.

3.2 Progress towards project Outputs

Output 1: Net cameras trailed and deployed on vessels to quantify seal-fishery interactions with the fin-fish fishery

Our net camera specialist went to sea from February 4th-20th on the F/V Igueldo as part of the Falkland Islands Fisheries Department (FIFD) pre-season loligo research cruise. This research cruise provided an opportunity to trial and troubleshoot cameras – something which would be difficult to achieve during commercial operations. The specialist was able to deploy two of SAERI’s new SOLOx Netview cameras on a total of 48 trawls. For each trawl, different positions and orientations on the net were tested in order to find the best view of the SED. Many different camera configurations and parameter set-ups were also tested, in order to find the best combination of settings to provide the best quality data. A report on the net cameras trials is appended to the submission of the annual report. Through several meetings with industry, we have identified opportunities for deploying cameras on commercial vessels during commercial operations, which is the next phase of the net camera work package.

Output 2: Identify where seal-fishery interactions occur in space and time

Prior to our first season of fieldwork, we have made progress on this output using female fur seal GPS data previously collected. We are using this data to develop a protocol for data analysis, which can be applied to data collected during DPLUS168 fieldwork. In brief, raw GPS tracks of 18 South American Fur Seals (SAFS) from July and August over two consecutive years (2018 and 2019) were collated (n = 19,616 GPS locations). Sea lion GPS data (n = 19,616 GPS locations and 23 individuals) from 2013, 2014 and 2017 were also assembled. A continuous-time correlated random walk (CRW) state-space model (SSM) using the ‘fit_ssm’ function in the ‘foieGras’ package (R statistical software) was fitted to the data. With the predicted and corrected re-routed movement trajectories, we compared location estimates with the fitted irregular location estimates. The final SSM dataset included tracks regularised at 15-minute intervals, and comprised on 24,125 SAFS and 17,877 SASL location estimates (Fig. 1). We also obtained daily trawl-by-trawl fisheries data over a 5-year period from 2017-2022. These data incorporated the loligo and major finfish catch species and encompassed the entire fishing fleet operating in the Falkland Island fishing zone. We will use these data to identify where seal-fishery interactions occur in space and time. Preliminary results show the total depth travelled and number of dives performed were both greater in areas associated with a greater catch quantity (Table 2). This suggests SAFS perform a greater number of dives and travel a greater vertical distance (likely indicative of deeper dives) in areas where commercial fishing operations concentrate harvesting efforts. These findings show seals and fisheries are likely competing for finfish and squid resources within the same areas.

A report is currently being prepared. In addition to establishing protocols for data analysis, planning for fieldwork in July 2023 is well underway and seal tags have been purchased. Tracking data can be viewed on the project webGIS [here](#).

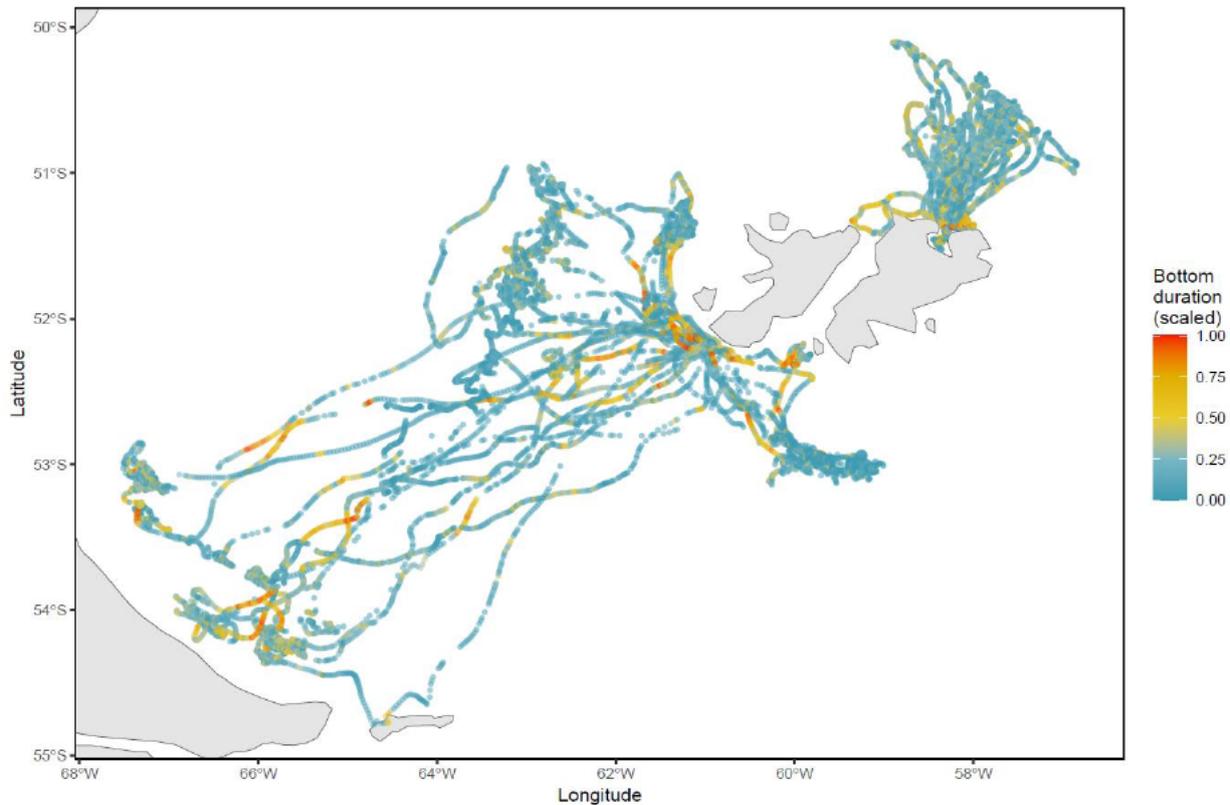


Fig. 1. Map of SSM-filtered location estimates for fur seals and sea lions ($n = 18$ and 23 individuals, respectively). Movement trajectories are coloured by total bottom duration in the water column. To standardise across individuals, bottom duration values are presented relative to the minimum and maximum values for each individual (scaled for $0 - 1.00$).

Output 3: Understand the factors that help predict interactions through the synthesis of available data and integration of additional data collected during project lifetime

We have not yet commenced work on the models. However, working with our project partners, we have identified 17 variables that will initially be used to develop models (see Table 1).

Table 1 – A list of 17 variables compiled which will be used to understand the drivers of seal-fishery interactions.

Variables related to seal bycatch	Description
Seal behaviours	
Dive depth	Maximum vertical depth (m) achieved during a dive
Bottom duration	Total time spent in the bottom phase of dive (i.e. between ascent and descent phase)
Wiggles	Total distance spent undulating during dives while in the bottom phase
Number of dives	Frequency of dives performed within a given unit of time
Move persistence	Speed and turning angle during horizontal movement trajectories
Fisheries activity	
Catch quantity	Total amount of catch (kg) caught and retained during fishing operations
Trawl duration	Total time a vessel takes to perform an individual trawl

Catch per unit effort	Compound metric integrating catch quantity and trawl duration as an index of abundance
Number of vessels	Frequency of vessels within an area and for a given unit of time
Catch type	Species-level identification of catch
Environmental gradients	
Bathymetry	Estimated sea floor depth (m) at a 0.02° x 0.02° spatial resolution
Bathymetry slope	Gradient (°) of the sea floor calculated from bathymetry data at a 0.02° x 0.02° spatial resolution
Distance to shelf	Distance (m) to the shelf break
Distance to colony	Distance (m) to the seal colony
Sea surface temperature	Measured daily in °C at a 0.25° x 0.25° spatial resolution
Sea surface height	Variability of the daily sea surface height (m) at a 0.25° x 0.25° spatial resolution
Chlorophyll	Chlorophyll-a concentration taken at a 1-week resolution

Output 4: Establish trophic links between commercially caught fin-fish and squid species and seals, and trophic changes in seal diet over time

Activity not within this reporting period.

Output 5: Stakeholders engaged, informed and project findings available and accessible

PMG established. Our first PMG meeting was held on the 28th March. Meeting notes are available on request.

3.3 Progress towards the project Outcome

Project outcome: “Robust baseline data enables the factors that have contributed to an increase in seal-fishery interactions to be understood and provides informed, evidence-based recommendations for management and mitigation efforts.”

Although the project is still in its early phase, there has already been a significant progress toward the outcome. This is specifically with regard to the collation of existing data and progress toward establishing protocols for data analysis, as is detailed in the progress toward outputs.

The indicators are still valid (“Major advance in baseline knowledge of seal-fishery interactions” and “Recommendations for national seal bycatch Action Plan to key stakeholders”) and there is presently no reason that the project could not deliver the outcome by the end of funding.

3.4 Monitoring of assumptions

Outcome

Assumption 1: Industry remains committed to the project and engage in project activities (industry are project partners)

- Comments: Assumption remains valid. The project has received excellent support from industry, including via the PMG and enabling the Net Camera Specialist to undertake a research cruise.

Assumption 2: Increased understanding results in positive action for seal-fishery management and governance.

- Comments: Assumption remains valid. The project has received excellent support from industry, including via the PMG and enabling the Net Camera Specialist to undertake a research cruise.

Assumption 3: That the duration of the project is appropriate to inform policy.

- Comments: Assumption remains valid. Our initial work collating existing data highlights that project aims are achievable within the lifetime of the project.

Assumption 4: Covid-19 impacts don't place restrictions on national and international travel

Comments: Assumption remains valid, although now considered to be low risk.

OUTPUT 1. Net cameras trailed and deployed on vessels to quantify seal-fishery interactions with the fin-fish fishery

Assumption 1: Recruitment is successful in appointing a suitably qualified candidate

Comments: No longer relevant as recruitment was successful.

Assumption 2: Project Manager and specialist are able to travel.

Comments: No longer relevant as both project manager and specialist are on-island.

Assumption 3: Enough lead-in time is allocated for delays in the procurement and delivery of goods related to Covid-19 disruptions.

Comments: Still relevant, although delays in procurement have not been an issue to date.

Assumption 4: Continued support of in-kind vessel time from partners.

Comments: Still relevant. Partners are part of the PMG and the project has received considerable support from project partners to date (as detailed in this annual report).

Output 2. Identify where seal-fishery interactions occur in space and time.

Assumption 1: Weather conditions enable field work within the proposed time periods.

Comments: Assumption remains valid.

Assumption 2: Vessel available for charter

Comments: Assumption remains valid.

Assumption 3: Covid-19 impacts do not place restrictions local activities.

Comments: Assumption remains valid, although now considered to be low risk.

Output 3. Understand the factors that help predict interactions through the synthesis of available data and integration of additional data collected during project lifetime.

Assumption 1: Partners have the capacity and resource to contribute data and collaborate in the data synthesis.

Comments: Still relevant.

Output 4. Establish trophic links between commercially caught fin-fish and squid species and seals, and trophic changes in seal diet over time.

Assumption 1: Partners have the capacity and resource to contribute data and collaborate in the data synthesis.

Comments: Still relevant.

Assumption 2: Covid-19 impacts do not complicate or close DNA and stable isotope sample analysis at UK laboratories.

Comments: Still relevant, but low risk.

Output 5. Stakeholders engaged, informed and project findings available and accessible.

Assumption 1: Stakeholders engaged, informed and project findings available and accessible.

Comments: Still relevant.

4. Project support to environmental and/or climate outcomes in the UKOTs

The project is still in its early stages, but is relevant to a number of national and international obligations and strategies. On a national level, the project addresses FI Biodiversity Framework (2016-2030) priority areas, particularly coastal, shelf and marine species and ecosystems and natural resource use. The project also directly supports the implementation of the Conservation and Wildlife Ordinance (protection of wildlife) and FIG’s aspirations for Ecosystem Based Management (FI Environment Strategy 2021 – 2040). The project will provide recommendations to DNR-Fisheries for a national seal bycatch Action Plan. The project also contributes to international obligations. These include CBD: Aichi 4 (Natural Resources); 6 (Sustainable fisheries); 10 (Vulnerable Marine Ecosystems). UNCLOS 61(2) coastal states take ‘into account the best scientific evidence available to it’ in determining conservation and management measures.’ The project will also make important contributions towards FIG commitments to the CMS for Appendix I and II species.

5. Gender equality and social inclusion

SAERI’s policy statement on Equality is:

“SAERI and its Group Companies (SGCs) are committed to ensuring that recruitment, promotion, training, development, assessment, benefits, pay, terms and conditions of employment, redundancy and dismissals are determined on the basis of capability, qualifications, experience, skills and productivity. SGCs are also committed to achieving a working environment, which provides equality of opportunity and freedom from unlawful discrimination on the grounds of race, sex, pregnancy and maternity, marital or civil partnership status, gender reassignment, disability, religion or beliefs, age or sexual orientation. This Policy aims to remove unfair and discriminatory practices within SAERI and to encourage full contribution from its diverse community.”

We believe that better decisions are made by diverse groups, and believe that equality thus wide and far-reaching. We actively uphold this approach in all we do and we ensure that all our partners have similar policies.

We acknowledge that attendance at stakeholder workshops or meetings may be limited by parental responsibilities and as such timings will be considered to be most appropriate (within the day) and education year (outside school holidays) both in the FI and internationally.

In the SAERI office, the current staff cohort is 60% female and 40% male.

Please quantify the proportion of women on the Project Board ¹ .	SAERI senior leadership team is 50% female (two of four directors).
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	The key project partners are DNR-Fisheries and FIFCA. Although our PMG is predominantly male (four of five PMG members are male), the director of DNR-Fisheries is female.

6. Monitoring and evaluation

The project is being implemented as a partnership between SAERI, FIG, and FIFCA. These organisations are members of the PMG, whose main commitment and task is to monitor and steer the project. A draft Memorandum of Understanding (MoU) between all of the project partners was distributed at the first PMG meeting in March 2023. The MoU articulates the roles and responsibilities of all parties in the

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

delivery of the project. Additionally, the PM will prepare a detailed Monitoring and Evaluation (M&E) plan in which a set of evaluation questions will be used to assess the effectiveness of the project's outcomes. Specific monitoring questions will be used to answer the evaluation questions and will be checked through indicators, data sources/methods to obtain the data, and the responsibilities for data collection. The M&E plan will be then submitted to the PMG for sign off. The PMG meets quarterly and the project manager will present a quarterly report on progress against deliverables.

7. Lessons learnt

The main challenge over the past year has been that of recruitment. Despite initiating recruitment in June, it has taken 5 months to recruit a Project Manager. Although recruitment can often be challenging for OTs, this was unprecedented and has led to a delay in the start of the project. There is little we could have done to offset this delay - we advertised shortly after we were notified of the outcome of the project (after requesting permission to do so from Darwin), we advertised across multiple sites (both paid websites and across social media platforms), and remuneration was appropriate. We are pleased that we have a Project Manager in-place, and we do not envisage a delay in project delivery.

8. Actions taken in response to previous reviews (if applicable)

Not applicable.

9. Risk Management

There are no new risks to report.

10. Other comments on progress not covered elsewhere

11. Sustainability and legacy

The FI economy is heavily reliant on its marine environment, particularly fisheries, which are central to its economic success. An aim of FIG is long-term sustainability of the fishery and marine environment to benefit future generations. This includes sustainable catches of commercial target species, reducing harmful impacts on bycatch species while maintaining ecosystem function. The project is still in the very early phases and increased interest and capacity has not yet been realised. This will become evident in the next project year, with planned engagement with stakeholders through presentations and workshops. However, there has been considerable interest from government and the fishing industry, as is evidenced by their involvement and support for the project, including the provision of our Net Camera Specialist to join a fisheries research cruise, and to trial cameras on a total of 45 trawls.

The exit strategy is still valid. This includes overall project impact to produce recommendations and guidance for management, including how to advance recommendations agreed. SAERI is a local FI organisation and has close working relationships with FIG and industry, and will ensure the sustained legacy of the project going forward. For example, one legacy item is an "interactive spatial webGIS database will be built for the project on an open-source platform that has no licensing costs and therefore ensures longevity. Additionally, the long-term management of the spatial database is ensured by having it embedded in the Falkland Islands IMS-GIS Data Centre, managed by a full time and skilled Data Manager already employed by SAERI. The database is built to enable easy updates. Knowledge transfer will ensure that awareness and use of the data/equipment produced by the project are firmly established before the project ends (WP5)."

12. Darwin Plus identity

The project was publicised as a Darwin project on recruitment, via our project website (link [here](#)) and via twitter (examples below).

DPLUS168 - Seal Bycatch Project Manager arrives in the Falklands.
Javed Riaz

was quite the journey. But it feels so great to have finally arrived. And what an amazing and wild

on 44-hour journey. Nevertheless, on ye and found me in town and invited ie outskirts of Stanley. It was certainly the Falklands. Although looking back, it r the Falklands and at SAERI would be s case).

ld to make an enormous amount of to the wealth of fur seal and sea lion and have processed the GPS ils from several colonies around the ant insights into where the seals are y, we've also met with project partners ave provided access to years and titive first month of data wrangling and s.

Image above: Jyself (left) and Megan Shapiro (left) - project Specialist-Net Camera's, outside of the SAERI office in Stanley.

m the wonderful world of coding and statistics to spend time around the unique wildlife the Falklands ling 1-week on Steeple Jason Island, a remote island in the northwest. This island boasts the largest as an abundance of gentoo, rockhopper and magellanic penguins; fur seals and sea lions; and various I also can't forget to mention the perpetually curious and cheeky straited caracaras. I was on the island ic long-term albatross monitoring program. We counted rhirke at sites around the island manually and

Recent Posts

- The Invisible Life of the Falkland Islands: How eDNA Research Revealing the Secrets of Kelp Forests**
By Amy Constantine
Dr Narissa Bax
[READ MORE](#)
- Understanding the Falklands Steamer Duck**
By Amy Constantine
Alix Kristiansen
[READ MORE](#)
- Can small spiders be interesting?**
By Amy Constantine

Example of updates via our website.

Marine Mammal Scientist

Darwin Plus project:
"Understanding increased Falkland Islands seal bycatch to inform a bycatch Action Plan".

- Duration: 2-years
- Where: Falkland Islands
- Salary: Starting at £38,288
- Closing Date: TBC

For further information or a general chat about this post, feel free to contact Alastair Baylis: abaylis@saeri.ac.fk
Or visit <https://www.south-atlantic-research.org/jobs/>

SOUTH ATLANTIC ENVIRONMENTAL RESEARCH INSTITUTE
www.south-atlantic-research.org
@SAERI_FI

A unique job, in a wildlife wonder spot, with a fantastic lifestyle!

SAERI is recruiting a **MARINE MAMMAL SCIENTIST** (pinniped bycatch) to support the coordination and delivery of a Darwin Initiative funded project. This 2-year role will work in partnership with the Falkland Islands Government and Falkland Islands Fishing Companies Association (FIFCA) to understand the factors that have led to an increase in seal-fishery interaction and provide baseline data and guidance to align current management objectives and actions, into action plans supporting Fisheries and Ocean governance. Full job description: <https://www.south-atlantic-research.org/jobs/>

The main accountabilities are:

- Understand the occurrence of seal-fishery interactions across temporal and spatial scales
- Work with partners to model the factors that have contributed to an increase in seal-fishery interactions
- Work with partners to provide baseline data on trophic ecology and trophodynamics related to fisheries and seals.

Logos: FALKLAND ISLANDS Fishing Companies Association, DARWIN INITIATIVE, ENVIRONMENTAL RESEARCH INSTITUTE SOUTH ATLANTIC

Example of our recruitment advert



SAERI @SAERI_FI · Feb 6

...

Our #pinniped bycatch project is now underway! With support from our project partners @FIFCA52degrees @FalklandsGov & a massive thankyou to Beauchene Fishing and the crew of the Igueldo - Megan has set-sail and is testing our new net cameras #DPLUS168 @UKBCFs



3 11 793

Example of a tweet.

2

13. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	No
Has the focal point attended any formal training in the last 12 months?	No
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 0 Planned: 0
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	
No	

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.

No

14. Project expenditure

2.1.1 Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)

Current Year's Costs	2022/23 Grant (£)	2022/23 Total actual Darwin Costs (£)	Variance %	Comments (please explain any variance)
Staff costs (from Section 6)				
Consultancy Costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (from Section 7)				
Others (from Section 8)				
Audit costs				
TOTAL	152,697.98	152,697.97	0%	

Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)

	Matched funding secured to date	Total matched funding expected by end of project
Matched funding leveraged by the partners to deliver the project.		
Total additional finance mobilised by new activities building on evidence, best practices and project (£)		

15. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes

I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

File Type (Image / Video / Graphic)	File Name or File Location	Caption, country and credit	Online accounts to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
				Yes / No
				Yes / No
				Yes / No
				Yes / No
				Yes / No

3 Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023 – if applicable

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
<p>Impact</p> <p>The development of a national Action Plan for seal bycatch that contributes to an ecosystem-based approach to fisheries management in the FI.</p>		<p>Although still in the early phase, the project has made progress in the collation of data and deployment of net cameras, which will underpin any recommendations for a national plan of action.</p>	
<p>Outcome</p> <p>Robust baseline data enables the factors that have contributed to an increase in seal-fishery interactions to be understood and provides informed, evidence-based recommendations for management and mitigation efforts.</p>	<p>0.1 Major advance in baseline knowledge of seal-fishery interactions (Y3, Q4)</p> <p>0.2 Recommendations for national seal bycatch Action Plan to key stakeholders (Y3, Q4)</p>	<p>0.1 Considerable progress has been made on collating existing data and establishing protocols for data analysis, as well as in preparation for field work. This is detailed progress toward outputs above.</p> <p>0.2 Not applicable to this reporting period</p>	<p>- Fieldwork in July to deploy tags, with a focus on generating additional data for male fur seals, which are currently data deficient.</p> <p>- Net cameras deployed on vessels during commercial fishing operations</p>
<p>Output 1. Net cameras trailed and deployed on vessels to quantify seal-fishery interactions with the fin-fish fishery</p>	<p>1.1. Project Manager (x1) successfully recruited (by Y1, Q3). Specialist (x1) successfully recruited to lead net camera deployment (by Y1, Q3)</p> <p>1.2 Net camera trial successfully completed on pre-recruitment survey (by Y2, Q3)</p>	<p>1.1 Both Project Manager and Net Camera Specialist have been recruited and are on-island. Please see our project website here.</p> <p>1.2. Successfully completed. Draft report appended to this submission.</p> <p>1.3. Ongoing, but is on-track for delivery.</p>	

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
	1.3 Net cameras deployed on at least 8 vessel/s (by Y2, Q4). If no seal interactions are recorded, we will report on overall SED operation		
1.1 Project Manager (x1) and Net Camera Specialist to lead net camera deployment (x1) recruited		1.1 Both Project Manager and Net Camera Specialist have been recruited and are on-island. Please see our project website here .	NA - completed
1.2 Net cameras trialled with DNR-Fisheries		1.2 Successfully completed. Draft report appended to this submission.	NA - completed
1.3 Rollout of net cameras to fishing vessels with DNR-Fisheries		<i>Not relevant to the reporting period</i>	Net cameras to be deployed on commercial fishing vessels during commercial operations.
Output 2 Identify where seal-fishery interactions occur in space and time.	2.1 At least 30 satellite link seal tags deployed by (by Y3, Q1) 2.2 One report on overlap with fisheries (by Y3, Q4)	<i>2.1 and 2.2 Not relevant to this reporting period</i>	
2.1 Deploy biologging tags on seals		<i>2.1 Not relevant to the reporting period</i>	Field work to deploy tags is planned for July 2023.
2.2 Results presented in a report delivered to PMG. Report re-focused for a scientific journal.		<i>2.2 Not relevant to the reporting period</i>	Report due Y3,Q4.

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
Output 3 Understand the factors that help predict interactions through the synthesis of available data and integration of additional data collected during project lifetime.	3.1 At least 10 variables related to seal-fishery interactions are collated (by Y2, Q1) 3.2 The 10 variables included in models to understand and predict seal-fishery interactions (by Y2, Q4)	3.1 and 3.2 Not relevant to this reporting period	
3.1 Desktop review, data collated and metadata stored on the IMS-GIS data centre portal		3.1 webGIS data portal established. Several data-sets collated. webGIS project site is accessible here .	Field work to deploy tags is planned for July 2023.
3.2 Review report and metadata catalogue delivered to Project partners		3.2 Not relevant to the reporting period	Report due Y2,Q4.
Output 4 Establish trophic links between commercially caught fin-fish and squid species and seals, and trophic changes in seal diet over time.	4.1 At least 1 trophic model developed (using Ecosim and Ecopath software or similar) (by Y3, Q4) 4.2 DNA analysis of at least 60 seal scats completed (by Y2, Q4)	Not relevant to this reporting period	
4.1 PM build trophic model in relevant modelling environment (e.g. Ecopath with Ecosim)		Not relevant to the reporting period	Model due in Y3, Q4
4.2 Undertake and report on DNA analysis on seal scat		Not relevant to the reporting period. Lab identified in Germany.	Samples will be sent away for analysis in project Y2.

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
4.3 Undertake and report on compound specific stable isotope analysis on seal teeth		Not relevant to the reporting period.	Samples will be sent away for analysis in project Y2.
Output 5 Stakeholders engaged, informed and project findings available and accessible.	5.1 PMG established, with representatives from DNR-Fisheries, industry and SAERI. M&E Plan created (Y1, Q2). 5.2 One stakeholder workshop on WP 1 (by Y3, Q4) 5.3 One stakeholder workshop on WP 2-4 (by Y3, Q4) 5.4 Consensus reached on recommendations for conservation and management (by Y3, Q4)	5.1 PMG was established, with the first PMG held in March. Meeting notes are available on request. 5.2 – 5.4 Not relevant to the reporting period	
5.1 PMG established, with representatives from DNR-Fisheries, industry and SAERI		5.1 PMG was established, with the first PMG held in March. Meeting notes are available on request.	PMG will be held quarterly.
5.2 Conduct workshop/present findings on WP1		Not relevant to the reporting period	Workshop planned in Q2 2023
5.3 Conduct workshop, compile and publish agreed recommendations for seal-bycatch		Not relevant to the reporting period	Workshop will take place by Y3, Q4.

4 Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	SMART Indicators	Means of verification	Important Assumptions
Impact: The development of a national Action Plan for seal bycatch that contributes to an ecosystem based approach to fisheries management in the FI.			
<p>Outcome: Robust baseline data enables the factors that have contributed to an increase in seal-fishery interactions to be understood and provides informed, evidence-based recommendations for management and mitigation efforts.</p>	<p>0.1 Major advance in baseline knowledge of seal-fishery interactions (Y3, Q4)</p> <p>0.2 Recommendations for national seal bycatch Action Plan to key stakeholders (Y3, Q4)</p>	<p>0.1 Publication of tracking data on the FI IMS-GIS data centre portal http://dataportal.saeri.org/ and reports on SEDs, trophodynamic model, factors that contribute to increased by-catch circulated to stakeholders</p> <p>0.2 Report on recommendations for a seal bycatch Action Plan and how to progress recommendations provided to DNR-Fisheries and stakeholders</p>	<p>Industry remains committed to the project and engage in project activities (industry are project partners)</p> <p>Increased understanding results in positive action for seal-fishery management and governance.</p> <p>That the duration of the project is appropriate to inform policy.</p> <p>Covid-19 impacts don't place restrictions on national and international travel</p>
<p>OUTPUT 1. Net cameras trailed and deployed on vessels to quantify seal-fishery interactions with the fin-fish fishery</p>	<p>1.3 Project Manager (x1) successfully recruited (by Y1, Q3). Specialist (x1) successfully recruited to lead net camera deployment (by Y1, Q3)</p> <p>1.2 Net camera trial successfully completed on pre-recruitment survey (by Y2, Q3)</p> <p>1.3 Net cameras deployed on at least 8 vessel/s (by Y2, Q4). If no seal</p>	<p>1.1 Employment contracts signed.</p> <p>1.2 Field report submitted to industry and results detailed in DPLUS annual report</p>	<p>Recruitment is successful in appointing a suitably qualified candidate</p> <p>Project Manager and specialist are able to travel – we have recruited from the UK and Australia during the past year.</p> <p>Enough lead-in time is allocated for delays in the procurement and delivery</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
	interactions are recorded, we will report on overall SED operation	1.3 Synthesis report of both field seasons to the PMG and stakeholders and regular reports to DPLUS.	of goods related to Covid-19 disruptions Continued support of in-kind vessel time from partners. Partners will form part of the project management group, thereby ensuring partners help steer the project
Output 2 Identify where seal-fishery interactions occur in space and time.	2.1 At least 30 satellite link seal tags deployed by (by Y3, Q1) 2.2 One report on overlap with fisheries (by Y3, Q4)	2.1 Dedicated webGIS project page with tracking data <i>e.g.</i> , webGIS page 2.2 Report submitted to PMG and regular reporting to DPLUS	Weather conditions enable field work within the proposed time periods. Vessel available for charter Covid-19 impacts do not place restrictions local activities.
Output 3 Understand the factors that help predict interactions through the synthesis of available data and integration of additional data collected during project lifetime.	3.1 At least 10 variables related to seal-fishery interactions are collated (by Y2, Q1) 3.2 The 10 variables included in models to understand and predict seal-fishery interactions (by Y2, Q4)	3.1 FIG IMS-GIS data centre metadata catalogue updated and searchable 3.2 Report submitted to PMG and regular reporting to DPLUS	Partners have the capacity and resource to contribute data and collaborate in the data synthesis

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Output 4</p> <p>Establish trophic links between commercially caught fin-fish and squid species and seals, and trophic changes in seal diet over time.</p>	<p>4.1 At least 1 trophic model developed (using Ecosim and Ecopath software or similar) (by Y3, Q4)</p> <p>4.2 DNA analysis of at least 60 seal scats completed (by Y2, Q4)</p> <p>4.3 Compound specific stable isotope analysis of at least 20 seal teeth completed (by Y2, Q4)</p>	<p>4.1 Trophic model showcased to stakeholders during workshop and report published on project website.</p> <p>4.2 Report published on project website and submitted to PMG</p> <p>4.3 Report published on project website and submitted to PMG. Regular reporting to DPLUS</p>	<p>Partners have the capacity and resource to contribute data and collaborate in the data synthesis</p> <p>Covid-19 impacts do not complicate or close DNA and stable isotope sample analysis at UK labs</p>
<p>Output 5</p> <p>Stakeholders engaged, informed and project findings available and accessible.</p>	<p>5.1 PMG established, with representatives from DNR-Fisheries, industry and SAERI. M&E Plan created (Y1, Q2).</p> <p>5.2 One stakeholder workshop on WP 1 (by Y3, Q4)</p> <p>5.3 One stakeholder workshop on WP 2-4 (by Y3, Q4)</p> <p>5.4 Consensus reached on recommendations for conservation and management (by Y3, Q4)</p>	<p>5.1 Terms of reference circulated to PMG and meeting minutes recorded. M&E Plan circulated</p> <p>5.2 Training video/guide for net camera deployment provided to stakeholders and uploaded to the Project website Workshop report, including recommendations, list of attendees, and presentations circulated to stakeholders and published on the SAERI project website</p> <p>5.3 Workshop report, including recommendations, list of attendees, and presentations circulated to</p>	<p>Key FIG officials and stakeholders available for the workshop and continue to engage.</p> <p>Covid-19 impacts do not place restrictions on national travel.</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
		<p>stakeholders, PMG and published on the SAERI project website</p> <p>5.4 Review report circulated to PMG, Stakeholders and uploaded to project website. Submit report to FIG's Fisheries Committee</p>	
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>1.4 Project Manager (x1) and Specialist to lead net camera deployment (x1) recruited</p> <p>1.5 Net cameras trialled with DNR-Fisheries</p> <p>1.3 Rollout of net cameras to fishing vessels with DNR-Fisheries</p> <p>2.1 Deploy biologging tags on seals</p> <p>2.2 Results presented in a report delivered to PMG. Report re-focused for a scientific journal.</p> <p>3.1 Desktop review, data collated and metadata stored on the IMS-GIS data centre portal</p> <p>3.2 Review report and metadata catalogue delivered to Project partners</p> <p>4.1 PM build trophic model in relevant modelling environment (<i>e.g.</i>, Ecopath with Ecosim)</p> <p>4.2 Undertake and report on DNA analysis on seal scat</p> <p>4.3 Undertake and report on compound specific stable isotope analysis on seal teeth</p> <p>5.1 PMG established, with representatives from DNR-Fisheries, industry and SAERI</p> <p>5.2 Conduct workshop/present findings on WP1</p> <p>5.3 Conduct workshop, compile and publish agreed recommendations for seal-bycatch</p>			

Annex 3: Standard Indicators

4.1.1 Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project

4.1.2 Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
*DPLUS168 net Camera trials - February 2023	Report	Megan Shapiro, 2023	Female	USA	SAERI, Stanley	SAERI
*DPLUS168 Solo X net view user guide	User manual	Megan Shapiro, 2023	Female	USA	SAERI, Stanley	SAERI
DPLUS168 webGIS	webGIS	SAERI, 2023	Male	UK	SAERI, Stanley	████████████████████ ████████████████████ ████████████████████ ████████████████████

5 Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Yes
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	No
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	