

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p><b>Thirteenth Meeting of the Advisory Committee</b> <i>Edinburgh, United Kingdom, 22 – 26 May 2023</i></p> <p><b>Update on Small Grants and Secondments supported by the Advisory Committee 2018 - 2022</b></p> <p><b>Secretariat</b></p>
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## SUMMARY

As agreed at AC12, the Grants Subcommittee met in early 2022 and decided to hold a Secondments round in the second half of 2022, following the Seventh Session of the Meeting of the Parties (MoP7). The round was finalised in February 2023 and successful proposals are summarised below.

The Subcommittee also decided that the next Small Grants round would be held following AC13, returning to the usual practice of two calls per triennium (i.e. a call following an Advisory Committee meeting). The next Secondments round will also align with this timetable.

Updates on progress with recent Secondments (2019, 2018) and Small Grants (2020, 2019, 2018) supported by the Advisory Committee are provided below.

## 1. SECONDMENTS SUPPORTED IN THE 2022 FUNDING ROUND

The 2022 Secondments round opened on 4 July 2022, with proposal submissions due on 26 September 2022. As agreed at AC12, the 2022 call retained the criteria amended intersessionally during 2020 (AC Circular 2020-01) to allow capacity building activities which did not depend on international travel. Four applications requesting a total of \$95,120 were forwarded to the Secretariat by four Parties. All four projects were recommended for funding by the Grants Subcommittee and Secretariat, albeit with some re-consideration of the budget for one of the proposals. The Advisory Committee was unable to reach consensus within the established timeline to approve the recommendation, which resulted in a 3-month delay to advising the applicants of the outcome of their proposals. Consequently, some secondment schedules were affected and had to be re-negotiated with host institutions. The total amount granted to all four applicants was \$55,635. A summary of the proposals is provided below.

**S2022-01:**            ***Internship at the New Zealand Department of Conservation on mitigation techniques applicable to the artisanal longline fishery off Peru and integrated bi-national seabird distributions of Chatham, Buller's and Salvin's Albatrosses.***

**Secondee:**            *Javier Quiñones, PhD. Oficina de Investigaciones en Depredadores Superiores. Instituto del Mar del Peru.*

**Host Institution:**    *Department of Conservation, Wellington, NEW ZEALAND.*

**FUNDS GRANTED: \$11,350**

The New Zealand albatrosses that forage within Peruvian waters are considered among the most endangered albatrosses. New Zealand Albatrosses are distributed in offshore southern Peru from autumn until spring. Almost nothing is known about the interactions between New Zealand albatrosses and the Peruvian artisanal pelagic longline fisheries during their non-breeding distribution. Therefore, improved understanding of the artisanal pelagic longline fisheries in Peru and the associated impacts on New Zealand albatrosses is urgently needed.

The New Zealand Department of Conservation has a well-developed programme of mitigation development and outreach for local longline fisheries in their country, so this secondment will allow for application of learnings to the artisanal longline fishery in Peru. In addition, this secondment will enhance the continued collaboration between Peru and New Zealand and will build on recent comparisons of New Zealand-based tracking and Peruvian at-sea surveys of Albatross and Petrel species. This secondment will involve working alongside a range of New Zealand Department of Conservation staff, meeting small-scale fishers and fisheries management personnel, and engaging with seabird researchers. Opportunities will be identified to present work to wider New Zealand stakeholders including fishing industry representatives and eNGOs active in the fisheries bycatch area.

This Secondment is currently underway.

**S2022-02:**            ***Abordaje social de la problemática de la captura incidental de aves marinas en pesquerías comerciales de Argentina***  
*Social approach to the problem of seabird bycatch in commercial fisheries in Argentina*

**Secondee:**            *Agustina Iwan. Instituto de Investigaciones Marinas y Costeras (IIMyC). Universidad Nacional de Mar del Plata, CONICET. Argentina.*

**Host Institutions:** *The Commonwealth Scientific and Industrial Research Organisation (CSIRO). Hobart, AUSTRALIA.*

*ARC Centre of Excellence for Coral Reef Studies. James Cook University, Townsville, AUSTRALIA.*

**FUNDS GRANTED: \$19,885**

El territorio marítimo se expresa como un espacio de encuentro entre diferentes actores con diversos intereses, los cuales no siempre han sido tenidos en cuenta desde un abordaje

sistémico e integral para la gestión del recurso marino, y la efectiva conservación de predadores tope. Por ende, la propuesta de este proyecto consiste en aplicar técnicas cualitativas para el análisis de datos provenientes de entrevistas con el fin de abordar los aspectos sociales que subyacen a la problemática de la captura incidental de albatros y petreles.

El objetivo principal es determinar los aspectos que dificultan o favorecen la implementación de medidas de conservación para reducir la mortalidad incidental de aves marinas, a partir del relato de los distintos actores que tienen incidencia en la problemática. Esto aporta información valiosa para enriquecer planes de gestión del medio marino y favorecer la eficacia de proyectos de conservación.

Se trabajará en la codificación de entrevistas en profundidad semiestructuradas, ya realizadas y transcritas en Argentina, para desarrollar el análisis y teorizar a partir de los datos obtenidos. Entre los interlocutores se encuentran: empresarios, funcionarios públicos, embarcados, investigadores, observadores a bordo, representantes de gremios y sindicatos, personal de prefectura y ONGs.

El propósito de la pasantía es la construcción de capacidades que me permitan ahondar en las principales características, términos y herramientas metodológicas de la teoría fundamentada (grounded theory) para la construcción y análisis de datos, en este caso de tipo cualitativo.

This Secondment is due to commence in early June 2023.

**S2022-03:**            ***Multi-fishery interactions of sympatric black-browed and grey-headed albatrosses from the Diego Ramírez Islands: An isotopic and tracking approach.***

**Secondee:**            *Cristián G. Suazo. Albatross Task Force, Chile.*

**Host Institution:**    *Centro Para el Estudio de Sistemas Marinos, Centro Nacional Patagónico, CONICET, Puerto Madryn, ARGENTINA.*

**FUNDS GRANTED: \$12,100**

Chile holds globally important albatross colonies which represent 20% of the populations of the black-browed *Thalassarche melanophrys* and endangered grey-headed *T. chrysostoma* albatrosses.

The high biological productivity of Chilean coasts supports major fisheries that operate both in coastal and pelagic waters. A variety of fishing gear is utilised including demersal and pelagic longline, demersal and mid-water trawl, purse seine and gillnets. The black-browed albatross is the most frequently bycaught albatross in these waters. By contrast, the less reported bycatch of grey-headed albatross is likely attributed to a more oceanic distribution.

The main objective of this proposed secondment is to conduct a multi-fishery assessment on the consumption of fishery discards and offal by black-browed and grey-headed albatrosses from the Diego Ramírez Islands and link this to trawl, longline, purse seine, and gillnet fisheries distributed in the whole EEZ of Chile.

This work will include the use of isotopic markers such as nitrogen ( $\delta^{15}\text{N}$ ) and carbon ( $\delta^{13}\text{C}$ ) from albatross tissues (feathers, blood). This will provide information on the trophic level and

potential food web of the ingested food, linking to by-products of pelagic and demersal fisheries. Blood from chicks and back feathers from pre-fledging will be used for isotopic analysis and cover the chick guard and post-guard period (late summer).

With the integration of these approaches, the present secondment will map the interaction of Chilean albatrosses and fisheries in Chilean waters during the breeding season. This will reveal spatial and temporal hotspots of overlap with natural prey and fisheries-derived from different fleets.

The design of a multi-fishery isotopic assessment for the albatross species of Diego Ramírez will be compared against tracks from adult albatrosses obtained from GLS and GPS deployments between 2001 and 2020. This will support verification of spatial overlap between albatrosses and fishing operations (e.g., density use units).

**S2022-04:**            ***Improving knowledge of petrel numbers and distribution in the South Atlantic: Burrowing bird censuses using detection dogs***

**Secondee:**            *Naomi Cordeiro. Green Hound Limited.*

**Host Institution:**    *Department of Conservation, NEW ZEALAND.*

**FUNDS GRANTED: \$12,300**

Eradicating invasive species, such as rodents, from islands and keeping them rodent-free is a powerful way to restore habitats and vulnerable species. Detection dogs are used throughout the world to support this type of conservation action to great success. For the past 3-years, Green Hound Limited (GHL) has provided detection dog services to check vessels and cargoes headed to rodent-free islands to ensure no rodents will re-invade and put seabirds under threat. The dogs have also been trained to confirm rodent-free status of islands recently cleared of rodents and to provide regular monitoring checks on high value tussac islands, which can be key breeding areas for a range of seabirds including ACAP-listed species such as White-chinned Petrels.

A further application of detection dogs is to use them for burrowing seabird surveys. The New Zealand (NZ) Department of Conservation (DOC) has been using dogs for rodent detection and censuses of burrowing birds for many years. Dog-teams undertake a rigorous training process and DOC have developed a comprehensive training programme. The NZ dog-teams are widely regarded as international leaders in this field.

It is proposed that the GHL dog handler travel to NZ and undertake bespoke training sessions with the DOC dog-detector teams. This will provide the GHL dog handler with first-hand experience and understanding of the intricacies of burrowing seabird surveys with dogs, the safety measures needed as well as all other nuances and details that cannot be learned remotely. In addition to the burrowing seabird training, lessons and further training on rodent detection can also be built into the secondment programme, thereby also enhancing the capabilities of GHL to keep seabird populations safe from the impacts of rodents.

Longer term, building this capacity will enable GHL to train additional dogs and handlers, thereby increasing capacity of conservation detection dog-teams in the region.

This Secondment is planned to commence in the second half of this year.

## **2. PROGRESS AND OUTCOMES OF SMALL GRANTS PROJECTS SUPPORTED IN THE 2020 FUNDING ROUND**

The 2020 Small Grants Programme applications opened on 4 September 2020. Nine projects were granted a total of AUD 137,842 in February 2021. The COVID-19 pandemic delayed or otherwise disrupted some projects. Seven small grants were still ongoing following reporting to AC12 in August 2021 (see [AC12 Inf 01](#)).

**ACAP 2020-03: *Pilot study: Non-invasive disease monitoring of Albatrosses and Petrels***

**Project Leader:** *Dr Meagan Dewar, Australia*

**Co-investigators:** *Dr Tom Hart, Oxford University; Dr Richard Phillips, British Antarctic Survey; Dr Patricia Pereira Serafini, Instituto Chico Mendes de Conservação da Biodiversidade, Brazil*

**FUNDS GRANTED: \$25,100**

**Summary of activities/outcomes: in progress**

Progress has been made towards all objectives, with samples collected and sequencing commenced, with in-field based testing occurring during the 2022-23 season. Field testing of the MinION was conducted aboard Quark's World Explorer where RNA/DNA extractions and MinION sequencing was performed. This field-based testing has provided valuable insight into what works and what requires more development including offline databases and analysis for identification of pathogens.

Import permits have been arranged for shipment of samples from the Southern Ocean. Importations of Biological Samples from some countries/collaborators have not been allowed (e.g Brazil). As nucleic acids are allowed, arrangements for DNA extractions have been made and will be shipped to Australia shortly.

Shipment of samples and DNA extractions of faecal and blood samples from Black Browed Albatross, South Polar Skua and Giant Petrel have been shipped to Australia. Samples from Black-Browed Albatross showing signs of disease and a Giant Petrel have been run on the MinION with development of pipelines and analysis currently underway.

Further samples from Wandering Albatrosses and Skua collected during the 2022-23 season will be shipped once they arrive back to the UK.

Discussions have begun to develop the framework around the establishment of a citizen science or stakeholder network for sample collections for disease surveillance (Objective 2).

Due to the current Avian Influenza situation, discussions with key leadership groups such as IAATO, COMNAP and SCAR are occurring to develop effective management strategies for managing disease outbreaks, including surveillance and testing. As part of this, a workshop of experts is in the planning phase which will contribute to objective 3.

**ACAP 2020-09: *Winter fine-scale movements of black-browed albatrosses and encounters with fishing vessels***

**Project Leader:** *Dr Alastair Baylis, South Atlantic Environmental Research Institute*

**Co-investigators:** *Dr Rachael Orben, Oregon State University, USA*

**FUNDS GRANTED: \$12,600**

**Summary of activities/outcomes: in progress**

To date we have purchased and tested remote downloading base station GPS tags on BBAL in summer 2021. This effort, while promising, indicated that the colony terrain was such that the chance of success over winter using these tags was low (the chance of tags successfully downloading data to the base station). To ensure data collection, we purchased 4 Telonics PTT tags for deployment in winter 2022. Unfortunately, it has been unexpectedly difficult to secure a charter boat to reach our field site. In 2021 we were simply unable to find a charter boat. In 2022, we secured a charter vessel, but engine issues en-route meant that we had to cancel fieldwork, because we could not find a replacement vessel to charter. Field work is now planned for the austral winter 2023, which involves both deployments and setting up trail cameras to monitor colony attendance over winter.

**ACAP 2020-15: *Estimating interactions with fishing vessels and their demographic impact on sooty albatrosses***

**Project Leader:** *Christophe Barbraud, Centre d'Études Biologiques de Chizé (CEBC-CNRS UMR7372 – La Rochelle University), France*

**Co-investigators:** *Karine Delord, Henri Weimerskirch Centre d'Études Biologiques de Chizé (CEBC-CNRS UMR7372 – La Rochelle University), France*

**FUNDS GRANTED: \$11,500**

**Summary of activities/outcomes: in progress**

(This project was postponed to austral summer 2022-2023 due to a delay in funding for the XGPS loggers.)

During the breeding season 2022/23, 13 XSputnik radar detection devices were deployed on breeding adults of sooty albatrosses at Possession Island, Crozet. The adults were tracked during late incubation or early chick-rearing period (November-December). The configuration of the monitoring site and the failure rate of incubating birds did not allow for the possibility of equipping the 20 originally planned devices. All the devices were recovered except one due to breeding failure. 11 devices recorded data with 14 different foraging trips for 11 individuals. The recovery rate was ~92%.

The data is being used to extract AIS data from the XSputnik to determine the identity of the vessels encountered. The radar data so far shows two ship encounters (two detections). As a first step, the foraging tracks of the birds were roughly overlapped with the aggregated AIS data available through the Global Fishing Watch data portal. This did not reveal any overlap during the time period outside the EEZs.

Further analysis will be completed when AIS (Automatic Identification and Tracking of Ships) data recorded by the devices and AIS data available otherwise will be released.

**ACAP 2020-16: *Generating LiDAR spatial data to improve the population estimate of Pink-footed Shearwaters on Isla Mocha, Chile***

**Project Leader:** *Ryan Carle, Oikonos Ecosystem Knowledge, USA*

**Co-investigators:** *Verónica López, Oikonos; Tyler Clark, University of Montana; Peter Hodum & Tiare Varela, Oikonos*

**FUNDS GRANTED: \$8,000**

**Summary of activities/outcomes: completed, see PaCSWG7 Inf 16.**

We surveyed Isla Mocha using plane-based Lidar during April 2021, creating a Lidar habitat model accurate down to the centimetre level.

We applied the Lidar habitat data to our population model for Pink-footed Shearwaters. The Lidar data helped with providing 1) cm level habitat data, an improvement over previous 30x30m scale resolution, 2) providing more habitat parameters to include in the habitat model, and 3) providing the ability to better map and visualize predicted burrow densities. New parameters we were able to include in the model based on the Lidar data were forest canopy height and topographic position index.

The original model (without Lidar) had a pseudo r2 of 0.014, whereas the model using Lidar had a pseudo r2 of 0.289. This fit was still not excellent, but it was an order of magnitude better than it had been. In the Lidar-based model, slope, elevation, canopy height, topographic position index, and distance to coast had significant relationships to burrow presence and/or burrow abundance.

The final model with the Lidar data predicted 233,436 burrows on Isla Mocha (95% CI = 151,237 – 332,179; CV = 0.19). After incorporating burrow occupancy, the model results indicated 181,859 (95% CI = 95,773 – 267,945; CV = 0.24) Pink-footed Shearwater breeding pairs on Isla Mocha.

We also calculated a design-based estimate of population on Isla Mocha by extrapolating the average burrow densities in two sampling strata by their areas. That method predicted 172,154 burrows (75,900-268,408 95%CI, CV = 0.29) and 130,493 occupied burrows (89,665-171,321 95%CI).

**ACAP 2020-18:** *Integrating an onboard observer program and remote tracking data to evaluate the interactions between the small-scale longline fisheries and adult Chatham albatrosses in their wintering grounds off Peru.*

**Project Leader:** *Carlos Zavalaga, PhD. Unidad de Investigación de Ecosistemas Marinos-Grupo Aves Marinas. Universidad Científica del Sur, Peru*

**Co-investigators:** *Javier Quiñones, PhD. & Maria Andrea Meza Torres, BSc. & Cynthia Romero Moreno, BSc. Oficina de Investigaciones en Depredadores Superiores, Instituto del Mar del Perú.*

**FUNDS GRANTED: \$19,430**

**Summary of activities/outcomes: completed, see SBWG11 Inf 21.**

In May and July 2021, two fieldtrips to offshore southern Peruvian waters over the continental slope, Peru – Chile trench and Abyssal plain, were undertaken aboard an artisanal longline fishing boat. One adult Chatham (*Thalassarche eremita*) albatross and five northern Buller's albatross (*Thalassarche bulleri platei*) were captured at sea and tagged 150 - 275 km offshore with GPS satellite transmitters. Likewise, during the trips, sightings of seabirds in relation to boat fishing activities were also recorded, geo-referenced and photographed for close identification. Species identification and behaviour was also recorded.

At-sea movements of Chatham albatross during their wintering grounds: It was not accomplished as transmitters probably fell off shortly after deployment. The maximum period of data acquisition was 4 weeks.

Interactions with small scale long-line fisheries: It was not accomplished as data from bird movements was not obtained.

However, with additional data recorded during the pelagic trips we were able to:

1. Determine fine-scale movements, relative abundances, seasonality and insights of foraging behaviour of Chatham albatross in Peru. The data collected with this project funds was complemented with other data recorded in previous years collected by IMARPE and the NGO's Prodelphinus.
2. Identifying the occurrence and behaviour of northern Buller's albatross in Peruvian waters based on external characteristics. This was possible with photographs taken at short distance and with individuals at hand, help was provided by Dr. Christopher Robertson from New Zealand.

Quiñones J, Romer C, Mangel J, Alfaro-Shigueto J, Moreno C, Zavalaga C (2022) At-sea surveys reveal new insights of fine-scale distribution and foraging behaviour of Chatham albatrosses (*Thalassarche eremita*) in central southern Peru. [Notornis 69:72-78](#).

Quiñones J, Zavalaga C, Robertson CJR (In Press) Identifying northern Buller's albatross in offshore waters of southern Perú. Notornis. Accepted manuscript.

Quiñones J, Zavalaga C (2022) Offal discards are probably one of the causes of albatross congregations in offshore Waters of southern Perú. Oral Virtual presentation in the Marine SeaBird Conference held in San Diego, California in February 2022.



**ACAP 2020-19: *Sub-lethal effects of plastic ingestion in albatrosses and petrels: the Southern Giant Petrel as case study.***

**Project Leader:** *Luciana Gallo, Instituto de Biología de Organismos Marinos (IBIOMAR-CONICET), Argentina & Marcela Uhart, Karen C. Drayer Wildlife Health Center, University of California, Davis, USA*

**Co-investigators:** *Flavio Quintana, Instituto de Biología de Organismos Marinos (IBIOMAR-CONICET) & Andres Attademo, Universidad Nacional del Litoral (UNL), Argentina*

**FUNDS GRANTED: \$18,500**

**Summary of activities/outcomes: in progress**

General objective: Evaluate the usefulness of selected biomarkers of toxicity and health status to assess sub-lethal effects of plastic ingestion in Southern Giant Petrel (SGP, *Macronectes giganteus*) chicks.

Objectives 1-3: Assess plastic ingestion by SGP chicks through the collection of voluntary regurgitates and boluses. Measure selected biomarkers of toxicity and health status in chick blood samples. Measure morphometrical parameters related to body condition of chicks.

- July-November 2021: Designed sampling collection protocols and datasheets based on PaCSWG4 Doc 09, Uhart et al. 2020.
- January-April 2022: Sampled chicks (30 and 90-days-old) at Arce colony.
- February- April 2022: Lab activities on regurgitates to count and categorize plastic items following United Nations' GESAMP recommendations.
  - In 2022, 14 regurgitates (FO=63.6%, 57% >0.1g of plastics) contained plastic items. Size of items recovered (n=37) was: 1–5 mm (5%), 5–25 mm (35%), and >25mm (60%). Most common items: membranes (bags and packaging, 84%), foam (11%) and rigid fragments (5%). Transparent was the most frequent colour (41%), white/cream (24%), brown/tan (22%), blue/green (8%) and black/grey (5%). Ongoing spectroscopy (FTIR-ATR) analysis identified plastic polymers (10 items): Low density polyethylene (60%), High density polyethylene (40%).
  - FO and number of items were higher in 90 days-old-chicks, although not significant (P>0.05). The mass of ingested plastic was significantly higher (W=30; P=0.0427).
- April-November 2022: Biochemical, hematological and biomarkers analysis of blood samples at diagnostic laboratories.
  - No significant variation (P>0.05) was recorded between body mass of recaptured (4.340±0.691 g) and control chicks (4.215±0.694 g). Leukocyte differentials, plasma biochemistries and acetylcholinesterase activity varied between the two samplings. Butyrylcholinesterase and glutathione-S-transferase activities and body condition index showed no variation.
- January 2023-present: Sampled chicks (30-days-old) at Gran Robredo colony. Samples currently being analyzed. A second field trip planned for mid-March (90-days-old chicks).

Objective 4: evaluate the relationship between plastic ingestion (presence, number of pieces, plastic mass) and selected parameters.

- Preliminary data analysis of 2022 season. Statistical analysis pending. Preliminary findings suggest some parameters were slightly influenced by plastic ingestion (presence/absence, no. items).

**ACAP 2020-20:** *Developing an epigenetic DNA ageing method for petrels (family: Procellariidae).*

**Project Leader:** *Lauren Roman, Institute for Marine and Antarctic Studies, University of Tasmania, Australia*

**Co-investigators:** *Nicholas Carlile, Ecosystems & Threatened Species, Department of Planning, Industry and Environment; Dr Chris Wilcox, Dr Britta Denise Hardesty, Dr. Piers Dunstan, CSIRO Oceans and Atmosphere, Australia*

**FUNDS GRANTED: \$8,312**

**Summary of activities/outcomes: completed**

We proposed to visit Cabbage Tree Island in December 2021 to collect DNA from known-aged Gould's petrels, banded by Nicholas Carlile and Dr. Yuna Kim. With this DNA collected, a set of age-related markers for petrels can be developed.

We completed the field work in December 2021, collecting blood samples from 85 adult petrels ranging from 1yo to more than 32 years old (banded as adult 1992). In March 2022, a further 15 blood samples were collected from fledglings (0 years old). Due to unforeseen problems with the samples, further DNA was required. We made a second collection trip, funded by CSIRO, in December 2022, collecting a further 77 samples from adult birds, ranging from 4yo to more than 31yo (banded as adult 1994). This phase of the project, gathering a reference set of DNA from a representative age range of known-age petrels, was successful and this phase of the project is now complete.

The next phase is the RRBS library preparation, which is occurring currently. We will update ACAP when it is complete.

The project manager, Dr Roman has secured an Australian Research Council (ARC) research grant (ARC DECRA) to continue this work for three years towards developing baselines for petrel demography on islands across Australia. Once piloted in Australia, we hope to reach out to others working with petrels internationally. This research project will commence in September 2023.

### 3. PROGRESS AND OUTCOMES OF SMALL GRANTS PROJECTS SUPPORTED IN THE 2019 FUNDING ROUND

The 2019 Small Grants Programme applications opened on 30 August 2019. Seven projects were granted a total of \$134,296 in February 2020. The COVID-19 pandemic delayed or otherwise disrupted some projects. Four small grants were still ongoing following reporting to AC12 in August 2021 (see [AC12 Inf 01](#)).

**ACAP 2019-06:** *Factores influyentes en la mortalidad de la pardela balear Puffinus mauretanicus por la contaminación lumínica*  
*Factors influencing the mortality of the Balearic shearwater Puffinus mauretanicus due to light pollution*

**Project Leader:** *Airam Rodríguez Martín, IRBI, Mallorca, Islas Baleares*

**Co-investigators:** *David García, IRBI; José Manuel Arcos, SEO/BirdLife; Claudia Pich Esteve, IRBI.*

**FUNDS GRANTED: \$18,000**

**Summary of activities/outcomes:** No further update provided

**ACAP 2019-10:** *Colaborando para el desarrollo de medidas de mitigación de las capturas accidentales de pardela balear y otras aves marinas en el Mediterráneo español*  
*Working together to develop measures to mitigate bycatch of Balearic shearwater and other seabirds in the Spanish Mediterranean*

**Project Leader:** *José Manuel Arcos, SEO/BirdLife*

**Co-investigators:** *Verónica Cortés Serra, SEO/BirdLife*

**FUNDS GRANTED: \$19,000**

**Summary of activities/outcomes: completed**

El proyecto estaba previsto para su desarrollo en 2020, pero la situación de confinamiento por covid-19 hizo necesario posponer su ejecución, que se ha alargado desde finales de ese año hasta 2022. En este periodo se ha trabajado en mejorar y/o poner a prueba las distintas medidas de mitigación contempladas inicialmente para el palangrillo (palangre de fondo utilizado por las artes menores en el Mediterráneo español). Así, se han realizado pruebas para encontrar una configuración adecuada en relación a la distribución y tamaño de pesos en la línea, con pruebas en los tres años (desde finales de 2020), que en 2022 se han realizado en época de mayor riesgo de capturas, con resultados prometedores: 5 casos de capturas en líneas "control", mientras que no hubo capturas en las pruebas con líneas "experimentales" (pesos de 2 kg cada 20-25 anzuelos). La colocación de pesos de 2kg cada 20-25 anzuelos (80-100 m) permitió un aumento de la tasa de hundimiento significativo hasta los 0,16 m/s a 10 m de profundidad, un 33% mayor que el control.

Se perfeccionó también el sistema de calado rápido inspirado en el tubo “NISURI”, pero que finalmente derivó en una “caja ocultacebos” con varios prototipos, desarrollados con la ayuda de ingenieros (con un prototipo avanzado en 2021, que pese a todo requiere ligeras adaptaciones).

Se realizaron pruebas con el repelente olfativo en 2021, en este caso a bordo de un arrastrero por la facilidad de trabajar a bordo de estas embarcaciones (de mayor tamaño que los palangreros, y que atraen más aves por la elevada oferta de descartes). Las pruebas son poco concluyentes, pues la mayoría de aves parecen acostumbrarse al repelente, aunque se trata principalmente de gaviotas, y hubo pocas pardelas (más sensibles al olor).

Finalmente, en 2022 se probó de forma preliminar un sistema inicialmente no contemplado, el de una cometa espantapájaros (Scarybird) que ahuyentar a las aves durante la calada de los palangres, si bien las pruebas realizadas estuvieron más dirigidas a comprobar la viabilidad de su uso por parte de los pescadores. Los resultados más prometedores corresponderían al del sistema de pesos añadidos, que podría ser especialmente adecuado combinado con el uso de la “caja ocultacebos”.

Hay que tener en cuenta la gran variabilidad de la flota, con formas de pescar muy distintas entre embarcaciones, lo que dificulta adaptar las medidas de mitigación en cada caso.

**ACAP 2019-12: *Demographic monitoring, at-sea movements, and scavenging behaviour in the Balearic shearwater***

**Project Leader:** *Professor Tim Guilford, Department of Zoology, Oxford University, UK*

**Co-investigators:** *Dr Oliver Padget, Department of Zoology, UK; Miguel McMinn-Grive, Societat d'Història Natural de les Balears (SHNB) Illes Balears; Elisa Miquel-Riera, Grup d'Ornitologia Balear (GOB), Illes Balears*

**FUNDS GRANTED: \$20,702**

**Summary of activities/outcomes: in progress**

Activities on this project have been severely disrupted by the Covid-19 pandemic. Travel restrictions stopped our first field season altogether. Repairs to our RIB funded by the grant were similarly delayed, and not completed until March 2022. We completed a limited field campaign in 2022, including deployment on Dragonera of geolocators purchased on this grant, but suffered an engine seizure and were unable to reach the main Sa Cella cave colony. We plan to re-start the project in late March 2023, and most preparations for this are now complete and permits in place.

Despite these delays, we managed to continue monitoring of breeding numbers and performance on Dragonera post rat eradication, including expanding local collaboration. We have also completed a major analysis of our long-term migration tracking data for the Balearic shearwater, combined with significant data from collaborators working on the species on Ibiza. This has allowed us to uncover significant changes to the species' migration patterns in response to climate change, results that are in the final manuscript edit stage before submission to a scientific journal.

**ACAP 2019-14: *Examining the efficacy of the ‘snatch block’ in reducing seabird bycatch in Southern Cone trawl fisheries***

**Project Leader:** *Cristián G. Suazo, Albatross Task Force-Chile, BirdLife International-Codeff*

**Co-investigators:** *Leandro L. Tamini, Albatross Task Force-Argentina, BirdLife International-Aves Argentinas; Patricio Ortiz, Albatross Task Force-Chile, BirdLife International-Codeff; Leandro N. Chavez, Albatross Task Force-Argentina, BirdLife International-Aves Argentinas*

**FUNDS GRANTED: \$22,224**

**Summary of activities/outcomes: in progress**

We struggled with COVID restrictions to get onboard with extra personnel on vessels only permitted from October 2022. As a result of the delays, we had to request an extension for permits with Subpesca which is in charge of permits for research fisheries projects.

We had the opportunity to advance but now we cannot reach our final trials because Chile is under a zoonotic emergency due to cases of Avian Flu covering Peru and Chile. Therefore, all projects linked to seabirds are in a stand by mode since Feb 2023.

We are strongly involved with partner companies in a series of designs and trials to improve mitigation measures involving the netsonde cable and some complementary measures to this latter also involving warp cables.

Due to the ongoing delays, the trials will now need to extend until July 2023.

#### **4. PROGRESS AND OUTCOMES OF SECONDMENTS SUPPORTED IN THE 2019 FUNDING ROUND**

Applications for the 2019 Secondments Programme opened on 23 August 2019, with deadline for proposal submission on 1 November 2019. All applicants were successful and following some budget and timeframes revisions, a total of \$22,280 was granted to three applicants. All projects were delayed due to international travel restrictions and were yet to commence at the time of reporting to AC12 in August 2021 (see [AC12 Inf 01](#)).

**S2019-01: *Ecological risk assessment of the incidental mortality of seabirds in Argentine fisheries***

**Secondee:** *Maximiliano Manuel Hernandez, Doctoral student, Agencia Nacional de Promoción Científica y Tecnológica, ARGENTINA (ANPCyT). Grupo Vertebrados, Instituto de Investigaciones Marinas y Costeras (IIMyC, Universidad Nacional de Mar del Plata – National Research Council of Argentina).*

**Host Institution:** *Department of Conservation, NEW ZEALAND*

**FUNDS GRANTED: \$10,373**

El objetivo general del proyecto de pasantía fue profundizar el entendimiento y desarrollo de ERAs que permitan evaluar el efecto que tiene la captura incidental a escala multi-pesquería en poblaciones de aves marinas de la plataforma continental argentina consideradas claves por su rol en el ecosistema marino. Los objetivos específicos fueron 1) determinar el nivel de riesgo ecológico que presenta cada especie y pesquería de interés, 2) capacitarse en el uso de herramientas de manipulación de datos y modelados estadísticos, y 3) favorecer los trabajos en colaboración con científicos de otras Partes del ACAP.

La pasantía se desarrolló principalmente en las oficinas de Dragonfly Data Science bajo la tutoría del Dr. Yvan Richard quien instruyó al pasante en la manipulación de las bases de datos, como así también brindándole una introducción y conocimiento sobre diferentes herramientas y lenguajes de programación que permitirán el desarrollo y entendimiento de los modelos estadísticos. Por otro lado, se mantuvieron constantes reuniones con los Dres. Igor Debski y Johannes Fischer, quienes contribuyeron a lo largo de la pasantía brindando herramientas para el análisis de las bases de datos, y sus conocimientos para resolver cuestiones metodológicas y conceptuales que influirían en el correcto desarrollo de las evaluaciones de riesgo. Por otro lado se organizaron reuniones con colegas de ámbito regional e internacional lo cual permitió al pasante generar vínculos profesionales como así también exponer la problemática que enfrenta la Argentina en torno al tema de la pasantía en cuestión.

Se trabajó con una base de datos de captura incidental en pesquería de palangre (2001-2010), y de pesquería de arrastre (2016-2019) como estudios de caso. Previo al desarrollo de la pasantía 1) se obtuvieron las bases de datos de captura incidental provistas por el Instituto Nacional de Investigación y Desarrollo Pesquero, estas fueron revisadas, reestructuradas, y modificadas con el fin de identificar y solucionar inconsistencias en los datos, 2) se recopiló información sobre la distribución de las poblaciones de las especies de aves marinas de interés, 3) se generaron mapas de distribución tanto del esfuerzo pesquero

como de las poblaciones de aves marinas. Durante el transcurso de la pasantía el pasante se capacitó en la preparación y manipulación de bases de datos, 1) se caracterizaron y agruparon las diferentes flotas pesqueras, 2) se desarrollaron y actualizaron los mapas de distribución del esfuerzo pesquero y aves marinas, 3) se trabajó en el desarrollo y entendimiento de los modelos estadísticos, como así también en el uso de diferentes herramientas para la obtención de datos como Global Fishing Watch y Marine Traffic, entre otras, 4) se estimaron los niveles de solapamiento entre los diferentes grupos pesqueros y poblaciones de aves marinas, 5) se estimaron valores tentativos de impacto por parte de las diferentes flotas pesqueras, 6) se realizaron reuniones con científicos en la temática.

Estas investigaciones facilitadas por la pasantía brindada por ACAP se encuentran enmarcadas en el proyecto de Tesis Doctoral del pasante con la dirección del Dr. JP Seco Pon y el Dr. M Favero, y financiada localmente por una beca de la Agencia Nacional de Promoción Científica y Tecnológica (Ministerio de Ciencia y Tecnología).

**S2019-02: *Improving museum routines and curatorial skills in New Zealand***

**Secondee:** *Alice Pereira, Technical Consultant at Projeto Albatroz, Curator at National Brazilian Albatross and Petrels Sample Bank (BAAP), BRAZIL*

**Host Institutions:** *NEW ZEALAND Department of Conservation, and Museum of New Zealand*

**FUNDS GRANTED: \$10,700**

This Secondment is scheduled to commence in early July 2023.

**S2019-03: *Entrenamiento en rehabilitación, determinación e identificación de enfermedades patógenas en aves marinas***

*Training in rehabilitation, determination and identification of pathogenic diseases in seabirds*

**Secondee:** *Rubén Antonio Alemán Lucero, Ministerio de ambiente – Parque Nacional Machalilla, ECUADOR*

**Host Institutions:** *Associação R3 Animal- Florianópolis-SC-Brasil and Centro Nacional de Pesquisa e Conservação das Aves Silvestres – CEMAVE, Instituto Chico Mendes de Conservação da Biodiversidade – ICMBio, Ministério do Meio Ambiente – MMA, BRAZIL*

**FUNDS GRANTED: \$4,540**

This Secondment is scheduled to commence in April/May 2023.

## 5. PROGRESS AND OUTCOMES OF SMALL GRANTS PROJECTS AND SECONDMENTS SUPPORTED IN THE 2018 FUNDING ROUND

Six small grants projects and four secondments were supported during the 2018 call for applications. The COVID-19 pandemic delayed or otherwise disrupted some projects. Three small grants and one secondment were still ongoing following reporting to AC12 in August 2021 (see [AC12 Inf 01](#)).

**ACAP 2018-02:** *Prevalence and magnitude of plastic exposure (macro and microplastics and select chemical compounds) in albatrosses and petrels off the shores of Argentina and Brazil*

**Project Leader:** *Marcela Uhart, University of California and Patricia Pereira Serafini, CEMAVE / ICMBio / MMA, Brazil*

**Co-investigators:** *Tatiana Neves, Projeto Albatroz; Luciana Gallo, Instituto de Biología de Organismos Marinos (IBIOMAR), CCT CENPAT, Argentina; & Leandro Tamini, Albatross Task Force, Aves Argentinas/AOP and BirdLife International*

**FUNDS GRANTED: \$20,000**

**Summary of activities/outcomes: completed, see PaCSWG7 Doc 04, PaCSWG7 Inf 03**

Objective 1: Evaluate incidence and magnitude of plastic ingestion in dead birds.

193 carcasses from 17 Procellariiform species collected between 2007-2021. 59 individuals ingested plastics (30.6%) representing 12 species (70.6%). *Procellaria aequinoctialis*, *Macronectes giganteus*, and *Puffinus puffinus* most susceptible species ( $\geq 10$  individuals and  $\geq 30\%$  occurrence).

Objective 2: Estimate the prevalence of plastic ingestion and characterize items present in the gut.

"*Sampling guidelines to assess plastic ingestion in ACAP species*" on ACAP website and disseminated in Brazil publishing **Gallo et al. 2021**.

Applied standardized methods in Argentina and Brazil, submitted and published: **Vanstreels et al. 2021, Nascimento et al. 2022, Gallo et al. in prep.**

- Plastic ingestion metrics by species, taxonomic group source and site - differences in frequency of occurrence (FO) between source and site were significant ( $P < 0.001$ ). Generalized linear models identify the taxonomic group as predictive of FO and the number of plastic items ( $P < 0.001$ ) in the upper digestive tract.
- Size of plastic items recovered ( $n=473$ ) was: 1–5 mm (36%), 5–25 mm (47%), >25 mm (17%). Most common items: fragments (71%), foam (11%), pellets (10%), other types and filament (4% each).
- From 90 items recovered from carcasses in Argentina, spectroscopy (FTIR-ATR and Raman) identified plastic polymers: Polystyrene (32%), Polypropylene (26%), Ethylene-vinyl acetate (11%), Polyacrylate, LDPE, HDPE, Polysiloxane, Cellulose acetate, and PET (<10% each).



Objectives 3 and 4: Establish diagnostic capacity for select chemical compounds derived from plastic degradation in Argentina and Brazil.

Validated laboratory methods for identifying and quantifying phthalate esters (dimethyl phthalate - DMP; dibutyl phthalate - DBP; diethylhexyl phthalate - DEHP) in preen gland oil from bird carcasses.

March 2022-present: Lessons learned in Brazil transferred to PRINARC. Instrument optimization performed. Samples currently being analyzed.

January 2023: Applying the established capacity, published *Vanstreels et al. 2023*.

- Extracts obtained for 99 dead seabirds from southeastern Brazil. Phthalates detected with concentrations > 0.01 ng/ul in 64 samples from 10 species, and trace levels in 14 samples from 8 species. No differences in phthalates concentrations between birds with and without ingested plastics (all  $P > 0.05$ ). Likewise, no significant correlations between the number or mass of ingested plastics and concentration of phthalates (all  $P > 0.05$ ).
- Individual variables (taxonomic group, age group, sex) were poor predictors of phthalates concentrations (all  $P > 0.05$ ). However, when examined individually, taxonomic group explained differences in DMP ( $P < 0.001$ ) with Albatrosses, Giant and Procellarine petrels showing higher values.

**ACAP 2018-03:** *Global review of nature and extent of trawl net captures*

**Project Leader:** *Graham Parker, Parker Conservation, New Zealand*

**Co-investigators:** *Kalinka Rexer-Huber, Parker Conservation, NZ and Igor Debski, New Zealand Department of Conservation*

**FUNDS GRANTED: \$12,000**

**Summary of activities/outcomes:** No further update provided.

**ACAP 2018-10:** *Assessing the overlap between threatened pelagic seabirds and trawl fisheries operating in northern Patagonian Shelf*

**Project Leader:** *Juan Pablo Seco Pon and Sofía Copello, IIMyC, CONICET-UNMDP, Argentina*

**Co-investigators:** *Jesica Paz & Rocío Mariano-Jelicich, IIMyC, CONICET-UNMDP, Argentina*

**FUNDS GRANTED: \$12,000**

**Summary of activities/outcomes: completed**

Se realizaron tres campañas embarcados entre 2018-2021, con el objetivo de instrumentar individuos del Petrel Barba Blanca, *Procellaria aequinoctialis*. Se capturaron cuatro individuos y se obtuvieron un total de 6327 posiciones. Los individuos fueron capturados en

las cercanías de la costa de la ciudad de Mar del Plata (~38°S; 57°O). Los individuos se distribuyeron entre los 23 y 54° S dentro de las Plataformas Continentales de Argentina, Uruguay y Brasil y aguas por fuera del talud entre los 23 y 37°S. Un individuo regresó a la colonia en las Islas Georgias de Sur (South Georgia)<sup>1</sup> en Noviembre.

Además, se compilaron los datos correspondientes a la actividad de la flota pesquera en Argentina (a través del sistema de monitoreo remoto de la flota provisto por la Secretaría de Pesca de Argentina) y los datos de Uruguay y Brasil fueron obtenidos a través del Global Fishing Watch (<https://globalfishingwatch.org/es/>).

Por otra parte se procesaron muestras de sangre de 5 ejemplares para el análisis de isótopos estables de C y N. Los resultados que se tienen al momento en cuanto a la composición indican medias de  $\delta^{13}\text{C} = -16.92 \pm 0.31 \text{ ‰}$  y  $\delta^{15}\text{N} = 17.71 \pm 0.9 \text{ ‰}$ . Estos valores se asocian al consumo de especies demersales y/o demersal-pelágica. A su vez son mayores (en ambos isótopos estables) a los detectados en individuos capturados en aguas frente a Brasil. Por otra parte, los valores registrados son similares a los detectados para otra especie de procellariforme en aguas de la plataforma continental como *Thalassarche melanophris* ( $\delta^{13}\text{C} = -17.22 \pm 0.54 \text{ ‰}$  y  $\delta^{15}\text{N} = 16.73 \pm 1.04 \text{ ‰}$ ). La comparación entre valores de ambas especies mostró composiciones isotópicas similares (Permanova Pseudo F1, 52=2.37 p=0.12) y los nichos isotópicos de ambas especies fueron similares en forma (SEAbWchP=1.2 ‰<sup>2</sup>; SEAbBBA = 0.96 ‰<sup>2</sup>) y presentaron un alto solapamiento de áreas (0.70 ‰<sup>2</sup>).

Los resultados del presente proyecto fueron puestos a disposición no solo para el PAN-Aves Marinas de Argentina sino también en el desarrollo del Plan de Acción Regional para reducir la interacción de aves marinas con las pesquerías que se desarrollan en las aguas de interés común gestionadas por la CTMFM (<https://ctmfm.org/plan-de-accion-regional-de-aves/>).

**S 2018-03: Conservation of albatrosses in Brazil: Definition of priority areas for conservation regarding the fisheries bycatch**

**Seconded:** Caio Azevedo Marques, Projeto Albatroz and State University of Santa Cruz (UESC), BRAZIL

**Host Institution:** British Antarctic Survey, UNITED KINGDOM

**FUNDS GRANTED:** \$16,900

**Summary of activities/outcomes:** No further update provided.

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<sup>1</sup> A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Islas Malvinas), South Georgia and the South Sandwich Islands (Islas Georgias del Sur e Islas Sandwich del Sur) and the surrounding maritime areas.