

 <p data-bbox="215 548 454 593">Agreement on the Conservation of Albatrosses and Petrels</p>	<p data-bbox="689 241 1406 280" style="text-align: center;"><b>Ninth Meeting of the Advisory Committee</b></p> <p data-bbox="869 297 1406 336" style="text-align: center;"><i>La Serena, Chile, 9 - 13 May 2016</i></p> <p data-bbox="491 414 1398 555" style="text-align: center;"><b>Progress reports on Conservation Projects and Secondments supported by the Advisory Committee</b></p> <p data-bbox="853 649 1038 687" style="text-align: center;"><b><i>Secretariat</i></b></p>
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## **1. PROGRESS OF CONSERVATION PROJECTS SUPPORTED IN THE 2013 FUNDING ROUND**

Twenty-three project applications requesting a total of AUD 388,906 were received by the Secretariat in the 2013 funding round. Ten projects were granted a combined total of AUD 116,666, including AUD 9,000 allocated from Core Funds for two projects. A summary of activities undertaken and outcomes achieved to date is presented below.

***ACAP 2013-04 Multi-colony tracking of nonbreeding Black-browed Albatrosses *Thalassarche melanophris* from the Falkland Islands (Islas Malvinas)<sup>1</sup>: identifying key wintering areas and zones of overlap with fisheries*** (Dr. April Hedd, Newfoundland, Canada; Dr. Paulo Catry, ISPA, Portugal; Dr. Richard Phillips, British Antarctic Survey, UK; Prof. William Montevecchi, Memorial University of Newfoundland, Canada)

**FUNDS GRANTED: AUD 12 500**

### **Summary of activities/outcomes**

1) Key wintering areas of BBA from Steeple Jason, New, and Saunders Islands have been identified. The majority of birds from all 3 colonies utilized relatively shallow waters over the Patagonian Shelf throughout the nonbreeding season, however, a small number of individuals from each site moved into the Pacific to forage in waters off the coast of Chile for a portion of the winter period.

2) While birds from all populations concentrated over the Patagonian Shelf in winter, there was evidence of segregation both by colony and sex. Core wintering areas (50% kernel UDs) for Steeple Jason extended from the colony north to the Plate River estuary, while birds from New and Saunders Islands concentrated instead over southern Patagonian Shelf waters, the former also making use of the Burdwood Bank. There was evidence of sexual segregation in

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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.

winter distribution, with females wintering further from the colony than males at all sites. Sex differences were most pronounced at the largest colony, Steeple Jason Island.

Obtainable fisheries effort information has been collated, but the overlap with bird distribution has not yet been assessed.

3) Data from Steeple Jason and New Island were contributed to BirdLife International's seabird tracking database early in 2015.

Completion of this project has been delayed due to a substantial increase in the quantity of data that has been made available for the project, compared to that expected (and budgeted for). This larger sample size clearly enhances the conservation significance of this project by making the findings more robust overall.

However, processing GLS data is time consuming and the time (and hence, funding) allotted for completion of this project have, in fact, been largely exhausted during the data processing and analysis phase. We remain committed to completing this project, however, the timeframe is uncertain as other projects and obligations compete for time.

Within the scope of this project, the greatest outstanding need is for increased access to information on spatio-temporal effort for fisheries operating within the southwest Atlantic. The value of our assessment of bird-fishery overlap would clearly benefit from access to higher quality fisheries data.

***ACAP 2013-07 A population estimate of white-chinned petrel at Disappointment Island, Auckland Islands, New Zealand*** (David Thompson, National Institute of Water and Atmospheric Research Ltd, New Zealand; Kalinka Rexer-Huber, University of Otago; Bruce Robertson, University of Otago; Paul Sagar, National Institute of Water and Atmospheric Research Ltd.)

**FUNDS GRANTED: AUD 16 00**

### **Summary of activities/outcomes**

Prior to this project, the size of the white-chinned petrel population on Disappointment Island in the Auckland Islands, New Zealand, was unknown, yet Disappointment Island is thought to be the main white-chinned petrel breeding site in the Auckland Islands, perhaps in New Zealand.

Disappointment Island was visited by a three-person field team from 1 to 11 January, 2015, during the incubation phase. The white-chinned petrel breeding population size was estimated taking into account the detection probability of burrows via distance sampling and burrow occupancy. Overall, a total of 153,100 (95% CI: 119,700–195,700) breeding pairs of white-chinned petrels on Disappointment Island was estimated during mid incubation in early January 2015. The relatively high occupancy and density of burrows suggest that Disappointment Island is a key breeding site for white-chinned petrels within the Auckland Islands group specifically, and in New Zealand more generally.

A manuscript has been submitted to and accepted for publication by Polar Biology:

Rexer-Huber, K.; Parker, G.C.; Sagar, P.M.; Thompson, D.R. (in press). White-chinned petrel population estimate, Disappointment Island (Auckland Islands). Polar Biology.

Having established a baseline for this population, it would be useful to repeat the population estimate at regular intervals in the future in order to determine a population trajectory for white-chinned petrels at this site.

See also **PaCSWG3 Inf 13** for more details.

**ACAP 2013-09 Trial of mitigation measures to reduce seabird bycatch in demersal longliners of the Mediterranean Sea** (Jacob González-Solís Bou, Universitat de Barcelona, Spain; Verònica Cortés Serra, Universitat de Barcelona)

**FUNDS GRANTED: AUD 19 985**

### **Summary of activities/outcomes**

To evaluate effectiveness of each mitigation measure in reducing the interaction between seabirds and longliners we recorded seabird abundance following the vessel, number of bait attacks and number of birds hooked. To assess the potential effects of mitigation measures on fishermen profits we recorded all commercial catches (kilograms and number of individuals obtained of the target species). In all trials, we made two consecutive settings of about 1,000 hooks: one with no mitigation measure (control) and one with the tested measure (experimental). We performed the trials in two different fishing ports of Catalonia: Llançà (Girona) and Vilanova i la Geltrú (Barcelona). Data obtained in these trials (2014) have been merged with data collected in 2013 to obtain more reliable results.

### BSL

In the first sets of the trials, we tried to adjust the BSL to the boats until reaching the optimal configuration that deters birds outside the access window (60 – 70 meters). We did not find significant differences in the number of birds following the vessel when we deployed the BSL (N = 12), but birds were deterred from the BSL area of influence and moved further behind the boat. Stealing attempts did not cease but mainly occurred beyond the limit of the BSL. Despite using BSL, 6 shearwaters were hooked. Considering boat speed at setting (5.2 knots), and sinking rates of the longline, we estimate hooks can be at 4 m depth at the end of the area covered by the BSL. *Puffinus* species can dive more than 10 m. We think lengthening BSL in this type of fleet would not be feasible, or be very impractical. We also detected some attempts of stealing baits inside the area of influence of the BSL on a calm day. On the other hand, strong winds conditions increased entanglements with the fishing gear. Overall, our results suggest BSL is an inadequate mitigation measure for the demersal longline fleet operating in the Mediterranean.

### Night setting

We found a significant reduction in bird abundance and in bird attacks on baits when the longline was set at night (2 hours before sunrise). All bait attacks were led by *Calonectris diomedea*, only occurred in one of the sets of the trial, and no bird was hooked. Fish catches between night and daytime settings did not differ significantly. This mitigation measure seems to be the best measure for reducing seabird bycatch. However, there were some species with nocturnal activity, such as *Ichthyaetus audouinii* and *Calonectris diomedea*. Some more trials may be necessary for a proper evaluation on the potential impact of night setting on these two species.

### Increasing the sink rate of baited hooks

To increase the sink rate we manipulated the configuration of the longline:

(1) *Adding leads of 10/20 g above the hooks (N=15)*

(2) *Increasing the weight of the conventional weights (N=3)*

(3) *Lengthening the distance from the buoys to the mainline (N=10): 120m, 150m, (W) + 150m - (W) Increasing weight of the weights*

We found no effect on commercial catches in trial (1). We experienced some entanglements of the branchline with the hooks during setting. There were also some operational difficulties when the buoys were attached on the hooks before throwing them into the sea. Weight increase of conventional weights generated kinks of the branchline. Moreover, although all experimental configurations (except 120m from buoy to the mainline) produced significant differences to the control, we could never reach the sink rate threshold of 0.3m/s conventionally considered as adequate to reduce the bycatch of the shearwaters. Adding more weight to reach this threshold would require changes in the fishing gear configuration of the artisanal longliners.

Bad weather delayed some trials and in some cases we had to reduce the number of settings originally planned. This adverse weather extended the period of the trials. On some days the number of birds following the vessel was very low or birds were absent. At the end of the campaign (July), when we were testing the effect of the increase in the sink rate of baited hooks, birds were particularly scarce, which precluded assessing effects of this mitigation measure on seabird attraction and bait attacks.

***ACAP 2013-11 Comparative trials of Lumo Leads and traditional line weighting in the Brazilian pelagic longline fishery (Tatiana Neves, Projeto Albatroz, Brazil; Rodrigo Sant'Ana, Projeto Albatroz; Augusto Silva-Costa, Projeto Albatroz; Fabiana Peppes, Projeto Albatroz; Dimas Gianuca, University of Exeter; Oliver Yates, ATF, BirdLife International)***

**FUNDS GRANTED: AUD 10 000**

#### ***Summary of activities/outcomes***

The project conducted research on board commercial longline vessels of the southern Brazilian fleet, comparing the catch rate of target fish species, seabirds and measure branch line sink rates for branch lines with 60 g Lumo Leads placed within 1.0 m of the hook (treatment 1), 60 g Lumo Leads placed at 3.5 meters of the hook (treatment 2), and the traditional line weighting adopted by the fleet, 60 g swivels placed at 3.5 meters from the hook (treatment 3). From August to November 2015, four fishing trips were monitored with 32 sets performed, totaling 26,377 hooks.

We found that there was no difference in the catch rates of target species between treatments. Eleven seabirds were caught during the experiment (five black-browed albatrosses, five white-chinned petrels and one great shearwater). All birds were caught at night and without tori lines. One bird was caught on treatment 1 (0.11 BPUE), three birds in the treatment 2 (0.33 BPUE) and seven birds in the treatment 3 (0.85 BPUE). Lumo Leads placed at 1.0 m from the hook sank faster than Lumo Leads and weighted swivel placed at 3.5 m. The high seabird mortality rates on treatment two and three suggests that the

combination of night setting and line weighting placed at 3.5 m is not enough to reduce seabird bycatch in the SW Atlantic to negligible levels.

The treatment configurations were different to those originally planned. Instead of 40g at 0.5m from the hook, in treatment 1, we used 60g at 1m from the hook due to availability of 60g lumo lead and taking into account that the fishing gear was made of 0.5m of steel rope which do not permit to verify its efficiency if it was positioned immediately above it. For treatment 3 we used 60g at 3.5m from the hook in accordance with local regulations, instead of 60g at 5m from the hook.

Three mitigation measures (toriline, night setting, weighting regime) were also planned to be used during the experiment. However, due to the skipper's decision, toriline was not used in any fishing set. Four cruises were performed instead of five, and we tested 26,377 hooks instead of 80 thousand because it was very difficult to find a captain who would agree to carry out the experiment, since the experiment involves considerable changes in fishing gear.

It was noted that fishing skippers are reluctant to deploy torilines on all sets. For this reason, the establishment of at sea surveillance on all vessels, such as observer programs and/or electronic monitoring should be adopted in order to ensure the mitigation measures compliance. Research to test and introduce e-monitoring systems should be prioritized.

See **SBWG7 Doc 14** for more details.

***ACAP 2013-12 Identification of Balearic shearwater's foraging ranges in the north-eastern Atlantic: a multidisciplinary approach*** (Maite Louzao Arsuaga, Instituto Español de Oceanografía, Spain; José Manuel Arcos, SEO/BirdLife International; David García, SEO/BirdLife International (Spain), Henri Weimerskirch, CEBC-CNRS; Karine Delord, CEBC-CNRS (France); Amélie Boué, LPO/BirdLife International; Thierry Micol, LPO/BirdLife International (France))

**FUNDS GRANTED: AUD 8 486**

#### **Summary of activities/outcomes**

- Breeding colonies were visited during the incubation period from 29 March to 8 April 2014 in order to recover the 27 geolocators deployed during incubation in 2013. 25 GLS were recovered. From those 25 individuals, P3 feathers were also recovered for an isotopic characterization during the Atlantic period.
- Laboratory samples of small pelagic fish (collected in September-October 2013) were prepared and sent for analysis to Estación Biológica de Doñana.
- Preliminary analysis of the stable isotope data done. For geolocation data, we used the method of TripEstimation to obtain position estimates for the 2013-2014 season.
- Talks presented in July 2014 at the Spanish Institute of Oceanography, in December 2015 at the National Museum of Natural Sciences (CSIC) and in January 2016 at the University of Cadiz. In addition, there has been a specific talk on Population Monitoring Project in Palma (Mallorca) organized by the Grup d'Ornithology Balears.

During the 2011/2012 season four main areas of distribution for the Balearic Shearwater in the Atlantic region (summer-autumn 2011) were identified: Bay of Biscay, west of the Iberian Peninsula, Gulf of Cadiz and west of Morocco. These results suggest a spatial and temporal segregation of the areas visited during the non-breeding period. In fact for summer-autumn 2013 (2013/2014 season) a similar spatial distribution was observed, but we need to study the information in more detail to determine whether individuals visit the same areas every year during the Atlantic period.

Thanks to the collaboration of the IEO, IPMA and AZTI 262 muscle samples of small pelagic fish were obtained along the NE Atlantic from Britain in the north, to the Gulf of Cadiz in the south during the fall of 2013. Both stable isotopes ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) showed significant differences geographically for all species analyzed together or separately. The mackerel was the species for which samples were obtained in all areas, and the areas with the largest differences in  $\delta^{13}\text{C}$  level were Arcachon Bay and northern Portugal, while the most diverse areas in terms of  $\delta^{15}\text{N}$  values were the eastern Cantabrian and southern Portugal. We have begun preliminary analysis with R package MixSiar to study the geographical contribution of small pelagic fish (prey) to the diet of the Balearic Shearwater.

The delay in obtaining data from geolocators due to technical difficulties has delayed the comparison of information between geolocators and stable isotopes.

***ACAP 2013-17 Assessing the conservation Status of the Atlantic Yellow-nosed Albatross on Gough Island, Tristan da Cunha*** (Dr Juliet Vickery, Royal Society for the Protection of Birds, UK; Rob Crawford, Department of Environmental Affairs and Tourism, South Africa; Trevor Glass, Director, Tristan Department of Conservation, Tristan da Cunha)

**FUNDS GRANTED: AUD 10 695**

**Summary of activities/outcomes**

Project largely completed, however report not yet submitted due to a budget re-allocation request.

***ACAP 2013-20 Establishing capacity in South America to build knowledge on albatross and petrel health and prevent disease introduction*** (Marcela Uhart, University of California, Davis; Flavio Quintana, Centro Nacional Patagónico, CONICET, Argentina; Esteban Frere, Global Seabird Programme, BirdLife International; Kirsten Gilardi, University of California, Davis)

**FUNDS GRANTED: AUD 20 000**

**Summary of activities/outcomes**

Biosecurity and best practices guidelines focused on southern giant petrel (SGP) breeding sites in Argentina.

The guidelines were presented at AC8 and have since been endorsed by the national government. Implementation at the provincial level, however, is pending. Efforts to adapt to Waved albatross in Ecuador will be further pursued.

Maximize scientific sampling from incidentally caught albatrosses by building capacity for standardized sample and health data collection and storage in S. American countries.

We developed detailed and simplified sample collection protocols and visual training aids which we delivered through workshops and hands-on wetlabs for on-board observers in Argentina, Brazil, Chile, and Peru.

During workshops we successfully transferred capacity and expertise to local teams via theoretical classes, group discussions and sample collection wetlabs. We distributed sample collection and storage kits, as well as datasheets and other necessary materials.

We continue to work with partners in each country in the improvement and adaptation of protocols so they adjust to their specific needs and capabilities.

In Argentina, obtained permits from the National Veterinary Service, SENASA, to collect and store samples on board and disembark them at selected ports. INIDEP OBOP is ready to launch pilot protocol implementation. BirdLife team already collecting samples. The project was also recommended to the National Fisheries Council (Consejo Federal Pesquero).

In Chile, IFOP negotiating permits for sample/bird disembark with Agriculture Service SAG.

We did not recognize the extent to which individual tailoring would be necessary (ie. substantial differences within fisheries, duration of trips, types of vessels, on board conditions and storage capacity, OBOP operations). This has required increased time and effort investment.

Pending goals for year 2:

- a) Beta-test protocols, collect feedback and re-test improved protocols. A one country pilot is likely the most feasible option. Argentina is ready to go.
- a) Compile feedback from field tests, and prepare final, ground-tested versions of protocols and guidelines.
- b) Submission of final protocols and guidelines to ACAP.

See **PaCSWG2 Inf 01** for a report on the biosecurity protocol and best practice guidelines for southern giant petrel (SGP) breeding sites in Argentina.

See **SBWG7 Doc 24** for sample collection protocols from bycaught birds report.

***ACAP 2013-23 Reducing incidental mortality of albatrosses and petrels in trawl fisheries in the Argentine Sea. A comprehensive approach for the conservation of threatened species (Guillermo Cañete, Fundación Vida Silvestre Argentina)***

**FUNDS GRANTED: AUD 10 000**

**Summary of activities/outcomes**

Four trips by scientists from the project team in the commercial fleet vessels, 213 days, achieved:

- Seabird abundance census: assemblies associated with the vessel and interactions were recorded. Species were identified, the state of maturity (in the case of albatrosses and giant petrels) and their activity. Between 15 and 19 species of birds were identified.
- Mitigation measures: Worked with BSLs, including the design and use of a third line for the sonde cable. Testing the Tamimi table.

- Interactions Census: Nets, warps and sonde were observed. Environmental variables, variables related to the operation of the vessel (vessel's activity, amount of discarding, etc.) and variables related to the activity of seabirds were recorded.
- Register of bird mortality.
- Experiments to test the effectiveness of streamer lines (BSLs): Each experiment had two treatments 15 minutes each: 1 - With BSLs, 2 - No BSLs and repeated several times per set.
- Working with the crew in the design and adaptation of devices.
- Workshops with crews (3-4 per trip according to conditions and availability).
- Follow-up visit to fishing vessels in the port of Ushuaia. Meetings and talks with crews and captains. INIDEP talks with observers to coordinate their work with BSLs. Presentation of results of previous trips. Delivery of materials
- Dissemination through media. Through the Ministry of Sustainable Development and Environment of Ushuaia we could access radio, graphics and television to publicize the current project to reduce the incidental catch of seabirds in fishing.
- Printing a poster designed to be used on board directed at the crew.

### 1. Evaluation of the effectiveness and use of mitigation measures, mainly streamer lines.

A high incidence of sonde cable interactions and bird mortality was identified. Additional streamer lines built onboard with the help of the crew were effective to mitigate that impact.

### 2. Evaluation of the effect of the strategic management of fisheries discard on the abundance of birds associated with the fishing operation and the risk of incidental mortality.

Discard management in relation not only to birds, but also on some of the trips, with chondrichthyans analyzed. The use of a crusher prevents the possibility of releasing live specimens of this group, but minimizes the supply of food for birds. When the shredder does not work, the supply of food for birds is higher and the likelihood of interaction with birds increases. It is necessary to review the rules and technical recommendations.

### 3. Creating crew awareness and promotion of responsible fishing practices.

Follow-up meetings and subsequent trips showed that officers are aware of the problems and solutions, and there are seafarers who voluntarily deploy BSLs. They stressed that they managed to reduce mortality in the cables between one to three seabirds per trip and some of them pledged to deploy on the next trip.

### Conclusions

- The BSLs should be used whenever possible, unfurling after the net becomes tense in each set. It is necessary to use the 3rd BSL in the sonde cable, especially when a pelagic net is used, due to increased mortality recorded in this gear.
- It is desirable that the deck crew carry out a monitoring operation of the BSLs to prevent possible entanglement.
- After several trips and meetings, deck crew have sufficient skills to handle BSLs and for assembly and repair.

- It is important that the use and operation of BSLs during following trips is monitored by the crew, captain and provincial observers and INIDEP.
- Complying with regulations that make the use of the BSL mandatory, coupled with the extension of the activities in this project to adapt and design BSLs on the boat as well as raising awareness among all involved, would reduce incidental albatross and petrel mortality.

Unfortunately, the economic situation of companies led some of them to withdraw from the fishery, which significantly reduced the number of vessels and thus the opportunities for the seminars.

***ACAP 2013-15 Updating maps for ACAP listed species (Ben Lascelles, BirdLife International)***

**FUNDS GRANTED: AUD 4 000**

**Summary of activities/outcomes**

30 range maps have been updated. Final versions will be available in May.

***ACAP 2013-16 Tracking data summary of ACAP listed species (Ben Lascelles, BirdLife International)***

**FUNDS GRANTED: AUD 5 000**

**Summary of activities/outcomes**

Existing tracking data for ACAP-listed species has been compiled and data gaps for species, sites and/or life-history stages were identified to provide priorities for future research.

A report presenting the results of this project has been submitted as **PaCSWG2 Doc 03**.

## **2. PROGRESS OF CONSERVATION PROJECTS OUTSTANDING FROM THE 2010 AND 2012 FUNDING ROUNDS**

***ACAP 2010-03 Evaluating alternative approaches to predicting at-sea distributions and fisheries overlaps of ACAP species in Ecological Risk Assessments (Richard Phillips, British Antarctic Survey)***

**FUNDS GRANTED: AUD 7 200**

**Summary of activities/outcomes**

Project activities involved cleaning and standardisation of input data for 7 ACAP species for which there were tracking data available for the relevant colony in the southwest Atlantic for the breeding and nonbreeding seasons (100+ tracks for most species). Separate maps were created for each stage of the breeding season (incubation, brood-guard and post-guard) and nonbreeding season for each species. These were weighted by the duration of each phase, and assuming that 50% of the population are nonbreeding birds, to create annual distribution

maps on a global projection with a 50km grid. These distributions were then compared with appropriately-weighted grids predicted using (i) BirdLife range maps (assuming homogeneous distribution throughout range), (ii) BirdLife range maps for the non-breeding distribution and the mean maximum foraging radius during the breeding season from tracking studies at that site and elsewhere to represent the breeding distribution, and (iii) BirdLife range maps for the non-breeding distribution and the mean maximum foraging radius calculated separately for each breeding stage from tracking studies at the focal colony to predict the breeding distribution. The comparisons were made by generating anomaly (difference) maps at the global (500km grid) and regional scale (southwest Atlantic; 100km grid).

The anomaly maps illustrated a number of advantages and disadvantages of different prediction methods, including problematic assumptions and inferences, particularly when grids are combined from different species or island groups. The results indicate that although predicted distributions are useful for highlighting areas where a species *may* be at risk from fisheries, overall there is a poor match between predicted and actual distributions (i.e. those based on tracking data), particularly at fine spatial scales. Hence, many areas of predicted high densities in reality hold few birds. For that reason, combining grids quantitatively, particularly for birds breeding at different sites, will lead to erroneous conclusions about relative spatial overlap for these highly pelagic species.

There was an unexpected delay in the start of the project because of personnel issues. There was also an analytical issue. The original intention was to quantify overlap predicted using different approaches with distributions based on tracking data using Bhattacharyya's affinity, which is considered to be the most appropriate index for quantifying the degree of similarity among utilisation distribution (UD) estimates. However, it was not possible to generate UDs using kernel functions for uniform distributions (global range maps).

See **PaCSWG3 Inf 04** for more details.

**ACAP 2012-03      *Seabird mitigation effectiveness of the Smart Tuna Hook in Tuna longline fishing*** (Barry Baker, Southern Seabird Solutions Trust; Graham Robertson, Australian Antarctic Division and Hans Jusseit, OceanSmart)

**FUNDS GRANTED: AUD 20 000**

#### **Summary of activities/outcomes**

We conducted an at sea trial in South Africa to demonstrate the efficacy of the Smart Tuna Hook in reducing seabird bycatch whilst improving the catch of target species. The experiment involved a direct comparison of a) conventional surface setting of pelagic longlines with weighted swivels as regulated (minimum of 60 g at 2m from the hook) using hooks without the 'Smart Hook' shield (the conventional method), and b) surface setting of pelagic longlines using the 'Smart Hook' shield (Smart Hook method). The experiment examined the capacity of the two hook methods to deter seabird species known to readily interact with pelagic longline fishing gear, particularly albatrosses, white-chinned petrels and shearwaters. The response variable was the capture of seabirds and commercial fish species.

Our experimental work was conducted on pelagic longline vessels targeting tuna and swordfish out of Cape Town, South Africa during the austral spring of 2014. Seabird bycatch was high and a total of 13 birds were caught across the three trips. Eleven of these birds were caught on the control treatments and 2 birds on the STH treatments. The use of the Smart Tuna Hook led to a reduction in the bycatch of seabirds of between 81.8% – 91.4% in one of the highest-risk fisheries to seabirds in the world. Importantly, there was no detectable difference between setting methods in the catch rates of commercially valuable species, indicating no detectable detrimental effect on fish catch for any species. In a fishery where the bycatch rate of seabirds exceeded 1 bird/1000 hooks (this study), and where the capture of more than 25 birds by a vessel each season leads to a suspension of fishing activity for that vessel, the Smart Tuna Hook clearly provided a significant deterrent to seabirds attacking baits, and offers a feasible option for pelagic fishers to significantly reduce the level of interactions with seabirds and hence remain active in the fishery.

See **SBWG7 Inf 07** for more details.

**ACAP 2012-07**      **Tracking Juvenile Tristan Albatrosses at Gough Island** (*Ross Wanless, BirdLife South Africa; Peter Ryan, Percy FitzPatrick Institute, University of Cape Town and Richard Cuthbert, Royal Society for the Protection of Birds*)

**FUNDS GRANTED: AUD 20 000**

#### **Summary of activities/outcomes**

An application was submitted to ACAP in early 2015 for a follow-up project to undertake additional deployments of tracking devices on juvenile Tristan Albatrosses, as all collaborators felt that we had too few data to make a robust assessment of the at-sea distributions of juvenile Tristans and consequent overlap with/risk from longline fishing. Unfortunately, ACAP did not approve any project applications from 2015. However, additional funding from other sources, sufficient to allow a further six deployments (in December 2015), was able to be secured. The current deployments will be regarded as part of the ACAP-funded project (even though no ACAP funds were used in this round). Given this, and with the hope that ACAP funding might be forthcoming for a final round of deployments for 2016/2017, this project is only likely to end in 2017. No data analysis will be attempted until sufficient data have been obtained.

### **3. PROGRESS AND OUTCOMES OF SECONDMENTS SUPPORTED IN THE 2015 FUNDING ROUND**

Five applications for secondment support were received by the Secretariat in the 2015 round, requesting a total of AUD 46 804. Two applicants were successful and AUD 24 070 was granted. Patricia Pereira Serafini's (CEMAVE, Brazil) successful application was on seabird pathogen surveillance, with the British Antarctic Survey and the University of Exeter as host institutions (AUD 13,000 granted). The other secondment supported was for Veronica Cortez (University of Barcelona, Spain) in collaboration with Albatross Task Force, Chile investigating ways to reduce artisanal demersal longliner bycatch of Shearwaters in the Western Mediterranean (AUD 11,070 granted).

***S 2015-04 “Reducción de las capturas accidentales de pardelas en los palangreros artesanales de fondo del Mediterráneo Occidental: traslado del sistema de palangre vertical utilizado en Chile.”***

***“Reducing artisanal demersal longliner bycatch of Shearwaters in the Western Mediterranean: Adopting the vertical longline system used in Chile.”***

**Seconded:** Verónica Cortés, Universidad de Barcelona, Spain

**Host Institution:** Albatross Task Force, Chile

**FUNDS GRANTED:** AUD 11 070

**Summary of activities/outcomes:**

It has been shown that the system of vertical longlines as used in artisanal fisheries in Chile has a reduced impact on birds due to the high sink rate of baited hooks, which makes them inaccessible to birds. The information gathered in this secondment will try to adapt this system to the demersal longliners of the Mediterranean. The similarity between the two fleets, in terms of features and target species, could favor a good adaptation of this system in the Spanish longliners.

The secondment took place between 28 December 2015 and 10 February 2016 in the region of Los Lagos in Chile. The study covered various fishing villages throughout the region. A total of 47 surveys were conducted with fishermen from 11 fishing villages located in Ancud, Calbuco, Puerto Montt and Hualaihué. Also trips in five different artisanal vessels were able to be undertaken. Generally, there are two types of artisanal vessels using longlines depending on their size and type of cover, and also there are two general types of line configurations. Fishing grounds do not vary throughout the year as all materials except longlines, are always anchored in the same area. Through the survey, it has been possible to determine the main variations between fishing gear used in the region. These variations in gear depend on the type of vessel (size and equipment) and techniques of each fisherman.

As for interaction with birds, surveys showed that there is generally a low impact on the activity of fishermen. 57% of respondents replied that bycatch rarely occurred (0-1 per year), 15% that never or rarely occurred (2 to 5 per year), while 13% felt that catches were frequent (> 5 to year). In most cases, the species most interacted with were shearwaters and seagulls. In general, the maximum number of catches per set was 1 or 2 units. However, 4 of the surveys provided maximum figures of hundreds of specimens collected in a single set (100 - 500 individuals). However, fishermen commented that these massive catches were very anecdotal and generally had occurred only once. Regarding the perception of fishermen about the economic losses that birds generate, 63% said they were nonexistent, 40% low, and 2% high.

This internship has led to extensive knowledge about different system configurations and procedures for artisanal fishing vessels in Chile. This information will allow the design of a vertical longline system suitable for different vessels in the Mediterranean, adapting the system according to the characteristics of the longliners operating in the area and their fishing habits.

**S 2015-05 “Pathogen surveillance in seabirds at South Georgia.”**

**Secondee:** Patricia Pereira Serafini, Centro Nacional de Pesquisa e Conservação de Aves Silvestres – CEMAVE, Instituto Chico Mendes de Conservação da Biodiversidade – ICMBio, Ministério do Meio Ambiente - MMA, Brazil.

**Host Institution:** British Antarctic Survey, Natural Environment Research Council and University of Exeter, United Kingdom

**FUNDS GRANTED: AUD 13 000**

**Summary of activities/outcomes:**

The project focused on training in techniques used to determine the prevalence, diversity and specificity of potential pathogens, as well as possible impacts on host fitness. A 3-month visit was undertaken to University of Exeter (Penryn, UK) and to British Antarctic Survey (Cambridge, UK) to further develop the skills of the secondee in surveillance methods for parasites, and to screen for parasites in samples from four seabird species.

As part of the training, Patricia took part in lab inductions, as well as training sessions on *Sequencing Methods, Cutting Bands on Electrophoresis Gels, Analysis of extracted DNA quality, Formulation of Assessment Forms for Laboratorial Risk Assessment (RA)* and for *Control of Substances Hazardous to Health (COSHH)*, among others. Focus was given during the secondment to extraction of DNA from blood samples, to several methods of DNA amplification procedures (PCR) investigating the presence of parasites, as well as to sequencing of the amplicons and analysis of the sequences on Bioedit and MEGA software in order to get a phylogenetic tree regarding the relationships between parasites identified and published genetic sequences.

Samples available were blood drops on FTA cards, blood smears on microscope slides and oral/cloacal swabs, obtained in summer 2014/15 at Bird Island, South Georgia (Islas Georgias del Sur)<sup>1</sup>, from 32 adults of each of three ACAP species representative of different taxonomic groups and foraging guilds: wandering albatross *Diomedea exulans*, northern giant petrel *Macronectes halli* and white-chinned petrel *Procellaria aequinoctialis* – and from a non-ACAP species, the brown skua *Catharacta lonnbergi*. The parasites to be investigated, *Plasmodium spp.*, *Haemoproteus spp.*, *Leucocytozoon* and *Borrelia spp.* were chosen previously during the preparatory months of the secondment.

DNA extraction was successful for the investigation of parasite prevalence in all 128 individuals sampled. DNA samples are stored at -20°C at the University of Exeter and can be retested or screened for different pathogens in the future. The presence of hemoparasites in all four seabird species analysed was detected. Two hemoparasites genera have been identified, *Haemoproteus* and *Plasmodium*. Regarding Haemosporidia, the northern giant petrels and the brown skuas have proven to be the most parasitized of the species analysed so far.

Another positive outcome of this training was the exchange of experience and methodological procedures for long term biological samples storage and cataloguing

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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.

process, made possible during visit accomplished at the British Antarctic Survey collection at Cambridge, UK.

One important next step within the following months is to finish light microscopy screening and sequencing for low quality sequences/shorter sequences as well as further statistical analysis of the information regarding the presence of parasites and its relationships and correlations with bird's life history, breeding data and morphological information.

Unfortunately, funding available for laboratory consumables were not sufficient to carry out further DNA extractions on swabs samples and additional pathogens amplifications (e.g. *Pasteurella multocida*, *Samolnella* sp and *Erysipelothrix* sp.). Those parasites should be investigated in a next phase of this research, with additional funding for laboratory consumables.