Agreement on the Conservation of Albatrosses and Petrels

Eighth Meeting of the Seabird Bycatch Working Group

Wellington, New Zealand, 4 – 6 September 2017

Update on the seabird component of the Common Oceans Tuna Project

BirdLife South Africa

BirdLife International, through its local partner, BirdLife South Africa (BLSA), is implementing the seabird bycatch component of the Common Oceans Tuna Project. The overall aims of this component are to:

- ensure that the use of best practice seabird bycatch mitigation measures is enhanced and accelerated by fleets operating in critical fishing areas of the Atlantic and Indian Oceans and;
- strengthen the capacity of national institutions to manage and conduct analyses of seabird bycatch data and the effectiveness of bycatch mitigation measures and facilitate a joint tuna Regional Fisheries Management Organisation (RFMO) assessment of the current bycatch mitigation measures contained in the relevant Conservation and Management Measures in tuna longline fisheries.

It is comprised of four elements:

1. National Awareness Workshops
2. Observer Training Workshops
3. Port-based Outreach Pilot Project
4. Global Tuna RFMO Albatross Bycatch Assessment (regional and global workshops)

This paper reports on activities since submission of the SBWG7 paper, and the planned activities of the project for 2017-2019.

1. BACKGROUND

The Food and Agriculture Organization of the United Nations (FAO) is the implementing agency of the project, "Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction (ABNJ)" (also known as the "Common Oceans Tuna Project"). The project's aim is to achieve responsibility, efficiency and sustainability in tuna production and biodiversity conservation in the ABNJ, through the systematic application of an ecosystem approach in tuna fisheries via:

(i) supporting the use of sustainable and efficient fisheries management and fishing practices by the stakeholders of the tuna resources;
(ii) reducing illegal, unreported and unregulated [IUU] fishing; and
(iii) mitigating adverse impacts of bycatch on biodiversity.

BirdLife International, through its local partner, BirdLife South Africa (BLSA), is implementing the seabird bycatch component of the Common Oceans Tuna Project. This component responds to the recognition within Regional Fishery Management Organisations (RFMOs) that reduction of the current impacts of pelagic longline fisheries on albatross and petrel populations requires acceleration of implementation of best practice seabird bycatch measures across fleets overlapping with albatross distribution, and, more broadly, enhanced capacity within member states to monitor and assess bycatch impacts.

Delivery of this is being achieved through four interlinked elements:

1. National Awareness Workshops
2. Observer Training Workshops
3. Port-based Outreach Pilot Project
4. Global Tuna RFMO Albatross Bycatch Assessment

2. PROGRESS TO DATE

2.1 National Awareness Workshop (Element 1)

Element 1 aims to improve awareness of, enhance and accelerate the use of best practice bycatch mitigation measures by fleets operating in the critical areas of the Atlantic and Indian oceans. This objective is being pursued through a series of 2-day in-country workshops which bring together national observer agencies, national government (management, research and compliance sectors) and the fishing industry representatives. To date workshops have been conducted in South Korea, Indonesia, Namibia, China and the Seychelles. In addition, BLSA and Common Oceans staff participated in a workshop in South Africa, hosted and facilitated by Japan Tuna for the Japanese Bluefin Tuna fleet.

2.2. Observer Training Workshops (Element 2)

Observer programmes are mandatory within each Regional Fisheries Management Organization (RFMO); training of observers is vital for improving the quality and quantity of seabird bycatch data, and can also enhance the implementation of seabird bycatch mitigation measures by vessels. To date, a 5-day intensive training course has been delivered to South Korea, in Cape Town. Others being planned for four additional fleets outline in 3.2 below. The workshops focus on seabird identification, scientific research methods, best practice seabird bycatch mitigation measures and associated research and ecosystem considerations in tuna longline fishing.

2.3. Port-based Outreach Pilot Project (Element 3)

Cape Town is frequented by a significant portion of the ABNJ tuna fleet that fishes in areas overlapping with albatrosses in the Atlantic and Indian Oceans. For this reason, Cape Town was chosen to host the port-based outreach (PBO) pilot project. The PBO is aiming to quantify levels of crews' understanding about RFMO bycatch regulations, to provide materials and raise awareness where needed, and track how the whole project is changing practices onboard vessels through port-based visits to vessels (with the use of interpreters). As this is primarily an outreach and tracking element, there will be no compliance monitoring. To date 34 vessels, mainly from Asian-flagged fleets, have been boarded, awareness material discussed and distributed and mitigation measures recorded.

2.4. Seabird Bycatch Assessment Workshops (Element 4)

Reporting of seabird bycatch rates and rates of mitigation measure use to RFMOs by countries is both variable and, to date, has not been sufficiently robust to allow estimates of the total numbers of birds caught within any RFMO's bailiwick. This element of the project is geared towards building capacity of national scientists to estimate seabird bycatch in their fisheries, and is aimed at government scientists/staff who curate data and develop reports for RFMOs. It is being undertaken as a collaborative process to develop standardized seabird bycatch reporting to RFMOs.

The first two of four workshops were held in early 2017, one in South Africa and one in Vietnam. Essentially the workshops were identical but provided two smaller groups to discuss the challenges in data collection, collation and analysis and future steps to work towards a collaborative global assessment. The following countries and organisations were present at the workshops: BirdLife South Africa, BirdLife International, Food and Agriculture Organization, ACAP, Indian Ocean Tuna Commission, International Convention for the Conservation of Atlantic Tuna, Secretariat of the Pacific Community, Mozambique, South Africa, Namibia, Seychelles, Brazil, Uruguay, Japan, Taiwan (Province of China (funded by BirdLife International)), New Zealand, Australia, Indonesia and China. A full workshop report is available on request but a summary of the outcomes and next steps can be found in Annex 1 below.

2.5. Additional components of the project

In the past report to ACAP, a pilot project to investigate the use of electronic monitoring for data collection relating to seabird bycatch was planned for the local tuna vessels in South Africa and Brazil. A range of issues in South Africa and Brazil prevented this element being taken further, requiring this element to be dropped in late-2016.

Namibian fisheries have become known to have some of the highest seabird bycatch rates globally. In 2015, seabird mitigation regulations were passed for the demersal trawl and longline fisheries, but not for the pelagic longline fishery. A Seabird Bycatch Mitigation Instructor was employed in 2016 to improve our understanding of the impact and scale of seabird bycatch within the local pelagic longline fleet. The Instructor is in the process of collecting seabird bycatch information across seasons and on a variety of vessels. To date two sea trips have been conducted.

3. FUTURE WORK

3.1 National Awareness Workshops (Element 1)

Workshops are planned for South Korea (wrapping up the extensive, collaborative at-sea trials), Mozambique, South Africa and Brazil (provisional plan).

3.2. Observer Training Workshops (Element 2)

Capacity building of the Chinese, Indonesian, South African and Namibian fisheries observer programmes will be the focus of 2017. These training events follow on from the National Awareness workshop. Two to five observers are trained during these sessions which are a combination of presentations, facilitated discussions and practicals.

3.3. Port-based Outreach Pilot Project (Element 3)

Following on from the pilot project in Cape Town, a second PBO pilot has been authorized to focus on the Chinese fleet operating from Suva, Fiji. This follows the China National Awareness workshop which raised awareness of the need for increased engagement with this fleet. A scoping visit is being conducted in July to engage with Fijian government and Chinese Industry representation and to finalize the implementation of this pilot. An inception workshop will be organised as soon as the position in Suva is filled. The Cape Town PBO pilot will conclude towards the end of 2018.

3.4. Seabird Bycatch Assessment Workshops (Element 4)

One of the outcomes of the first two workshops under this Element, is to conduct inter-sessional work with Distant Water Fishing Nations and Coastal States to ensure their data are standardized and ready to be included in data analyses. The culmination of the inter-sessional work will be a data preparation workshop followed by a Global Seabird Bycatch Assessment workshop. Inter-sessional work will be supported by BirdLife and invited experts (independent consultants). The data workshop is planned for the week of 20-24 February 2018 in Mexico, where one representative from each country will be present.

This final workshop (planned for end of 2018/ early 2019) will be complemented by a follow up workshop towards the end of the project (July/August 2019), which will serve as the final review of the global seabird bycatch assessment process.

ANNEX 1: SUMMARY OF THE OUTCOMES AND NEXT STEPS EMINATING FROM THE REGIONAL WORKSHOPS HELD IN 2017

During the 1st regional workshop a draft recommendations document was produced. During the 2nd workshop, the draft recommendations were presented and amended to include additional points and actions. The document is presented below, including a draft work plan for June 2017 onwards:

Overview of global tuna RFMO albatross assessment work plan

Participants at the two regional workshops in 2017 agreed to take steps towards a global tuna RFMO albatross assessment through the following phases.

The **first phase** of the project (June 2017 – January 2018) anticipates national scientists working together inter-sessionally, supported, where requested, by Common Oceans project consultants, to identify factors explaining differences in bycatch rates between fleets (Bird Per Unit Effort, BPUE. Participants agreed that this phase would likely be comprised of a meeting involving the distant water fishing nations (DWFN) and one or more meetings for coastal CPCs. This is was considered especially important for the DWFN fleets for which sizeable discrepancies in BPUE exist for fleets targeting the same tunas in similar areas. This could include a facilitated meeting between Common Oceans project consultants and two or three DWFN. The timing and location of these meetings depend on schedules of the participants and available funding, but should happen prior to the global data meeting (early 2018).

The **second phase** of the project is planned to progress concurrently with the first phase and will be focused on **national scientists compiling bycatch and fishery data, producing standardized reports** using simple BPUE models, producing common data stratification and basic exploratory data analysis. This will be initiated via a common data setup and analysis provided by the Common Oceans consultants. Approaches that could be undertaken include: i) examine spatial and temporal distribution of fleets and differences in gear characteristics and fishing operations, ii) generate a combined BPUE from multiple fleets and examine fleet effects by area, (iii) assess the effect of different data filtering approaches. During this phase the tracking data and colony population parameter data will also be compiled (with the support of a range of stakeholders), in order to develop the best available information on seabird distribution.

Participants agreed that the **third phase** of the project would be a **collaborative data preparatory workshop** under the Common Oceans Project (to be held in February 2018, with a stock assessment type approach to data ownership/confidentiality). The data preparatory meeting would consider the operational level data available by fleet, to inform the appropriate methodologies for estimating seabird BPUE and overall mortality and trend in seabird bycatch across the Southern Ocean. The group agreed it would be useful for all fleets to undertake a selected (simple) approach to data analysis prior to the data preparatory meeting. The meeting might consider, among other things, modelling approaches to BPUE estimation to account for spatial processes and gear factors and models that account for overdispersion/underdispersion and non-normality of the BPUE data.

The **fourth phase** of the project would continue the work developed in the data analysis workshop and focus on **inter-sessional work to develop model options and methodology.** This will give CPCs time to digest the information in the previous meeting and plan for the upcoming analysis.

The **fifth and final phase** of the project would be an **assessment meeting,** which is envisaged as a collaborative workshop to a produce global t-RFMO estimate of total catch of seabirds leading to jointly co-authored paper(s). Specific outputs of this analysis would be a flow chart of the best practice steps for the analysis of seabird bycatch data. E.g. data cleaning, create maps of observed versus total effort, identify data distribution (Poisson, etc), and create simple stratified ratio estimates before doing more complex modelling.

Participants at the 2017 regional workshops agreed that **additional** work could be directed towards **developing population impact models** and scenarios for high-information species.

Through discussions at the regional workshops it was clear that national scientists had a range of capacity-building needs for seabird bycatch assessment, ranging from data collection and seabird identification issues, to support for choice of analytical approach. Although these are beyond the scope of this was noted that some of these could be addressed by topical workshops under the Common Oceans project, and some by 1-1 support either through the Common Oceans project or collaborative working between national scientists. Some aspects, especially observer training, would greatly benefit from support from the tuna RFMO Secretariats for example similar to existing efforts in IOTC and WCPFC Regional Observer Programs.

Table 2 contains a draft list of next steps agreed upon at the second regional workshop under the Common Oceans project (Vietnam, April 2017), which are being communicated to the tuna RFMO ecosystem/bycatch working groups in 2017.

Proposed structure and general timeframes:

A. Prior to the data preparation meeting (Phase 1 and 2, July 2017 – Jan 2018):

- Develop confidentiality agreements between CPCs and NOAA (tbc)
- CPCs to work together to identify factors explaining the differences in areas where seabird BPUEs diverge between fleets (facilitated by BLI consultants)
- Pre-process the data and realize explanatory analysis, including
    - Identify data gaps and hurdles
    - Provide a common framework for the analysis of CPC data
        - Logbook and Observer data
    - Develop a ‘data catalogue’ for the spatial & temporal data of, logbook, observer and seabird data.

Data scripts/technical advice provided by the BLI consultants, CPCs to undertake the work.

B. At the Data preparation meeting (Phase 3, February 2018)

Structure of the data workshop (facilitated by NOAA personnel and consultant):

- Basic analysis, and data formatting done prior to the meeting
- During the meeting:
    - Presentations of EXPLORATORY DATA ANALYSIS
    - Construction of a DATA CATALOGUE
    - Collation of STANDARDIZED DATA SET
    - Development of a DATA ANALYSIS DECISION TREE
    - Develop standard methodology for the annual evaluation of BPUE and N (to assist national reporting of estimates to RFMOs, potentially make consistent with tuna and shark reporting).
- Discussion for next steps for the assessment workshop

- Compile overall dataset from logbook and observer data.
- Discuss and begin to develop methods for initial calculation of assessments of ***N (the number of birds killed annually in longline fisheries South of 25 degrees south)***

- Compile distribution data
  - Show the 'range' of data availability for effort & distribution of seabirds
  - Investigate 'seabird abundance' in time and space from 'at-sea' data or species richness (relative abundance).

C. Intersessional work (Phase 4, March 2018 – September 2018)

D. Global Assessment meeting (Phase 5, late 2018/early 2019, facilitated by the BLI consultants)

- Discussion of the data meeting held (February 2018)
- Estimation methods for N
  - SRS ratio method (Taiwan Province of China-like analysis)
  - Model-based approach to standardized CPUE surface New Zealand-like analysis
  - INLA/VAST type model
- Integration of demographic/population level parameters
  - Australia-like methods of demographic modelling
  - PBR approach
- Plan for the continuation of the **periodic global evaluation,** in the future (see the CCSBT scoping paper)
- Calculate the vulnerability (by primary species, species/fishery specific)
  - Based on the overlap analysis
    - Leverage results from New Zealand (Dragonfly) analysis to identify data gaps and potential solutions.
- Develop a decision tree based on 'compiled data set' to estimate the total catch
  - Using data from RFMOs and distribution data from BLI, and observer data from CPC's to calibrate
- Identify methods to evaluate impacts of seabird CMMs
- Discuss or prepare for population impact models/scenarios where available.

One of the main discussions at the 1st workshop was to work through the data fields that are required for a seabird bycatch assessment to occur. The starting point for this discussion was the ACAP bycatch indicators paper (SBWG7 Doc 05). Data were discussed and only 'required' data fields (not desirable) were included to ensure the process is simplified for data collection by CPCs (especially coastal states). The selected fields are presented in Table 1 below.

Table 1: Draft of priority data fields to be collected by set for seabird BPUE standardization and estimation (per set unless otherwise stated)

Variable classification	Variable description
Dependent Variable	Number of seabirds caught (by spp) Condition (Dead/Alive/Injured)
Independent Variable	
Temporal	Date Deployed Start Time Gear Deployment End Time Gear Deployment
Spatial	Latitude at beginning of set Longitude at beginning of set
Physical	Moon Phase. (this can also be calculated by date)
Fishing Operation	Vessel Identification Observer Identification [Vessel Characteristics e.g. length, tonnage & target species, for extrapolation to unobserved fleets] HBF Number of hooks deployed Number of hooks observed at haul Catch composition or target species
Fishing Gear	
Conservation Management Measures (CMMs) related	Bird-scaring line used (Yes/No) Number of bird-scaring lines Text field for description of bird-scaring line Mass of added weight (grams) and distance from hook (metres)

Table 2: Proposed work plan, including the details of the meeting, time frame and proposed outcomes and

Meeting	Meeting Detail	Time Frame	Proposed Outcome	Notes
Inter-sessional Meetings with CPCs				
1	Data Meetings: DWFNs, 2-3 meetings	November 2017-January 2018	Standardization of Data set	Work with the DWFNs to identify the differences between fleet BPUEs
2	Data Meetings-Other CPCs (coastal states)	Nov 2017- Jan 2018	Standardization of Data set	Work with the coastal states to identify the differences

				between fleet BPUEs
Note: these meetings where possible will be aligned with other meetings such as RFMO meetings and will be conducted by Joel Rice (invited expert/independent consultant)				
Pre-assessment Data Meeting				
3	Pre-assessment Data Meeting: data preparation (attendance by select CPCs)	February 20-21 2018	Standardized Data Set	May not be required if the inter-sessional data meetings are successful
4	Pre Assessment Data Meeting: data analysis	February 22-24 2018	Calculate the vulnerability (by primary species, species/fishery specific)	Mexico
			Compile distribution, analyze overlap	
			Develop a decision tree based on 'compiled data set'	
			Steps toward, identify (best) practices to estimate the total catch	
			Using fishing effort data from RFMOs and seabird distribution data via BLI, and observer data from CPCs to calibrate	
			Identify impacts of seabird CMMs	
			Leverage results from previous analyses.	
			Prepare for population impact models/scenarios	
Global seabird bycatch assessment meeting				
Analysis meeting		October 2018	Estimate total number of seabirds killed globally in pelagic tuna longline fisheries. Evaluate BPUE trends. Identify impacts of seabird CMMs. Assess population viability using demographic and/or impact models	Time and Location TBD