



Report of the discussions regarding data
availability and preliminary work plan
Seabird Bycatch Component
Brazil
for component 3.2.1 of the

Sustainable Management
of Tuna Fisheries
and Biodiversity Conservation
in the ABNJ

14-15 December 2017
University of Veiga Almeida
Cabo Frio, Brazil

Prepared by Joel Rice for BirdLife South Africa



Food and Agriculture Organization
of the United Nations



Workshop Report

Project: FAO-GEF Project *Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the ABNJ* (GCP/GLO/365/GFF)

Reporting organisation: Joel Rice Consulting

Report prepared by: Joel Rice

Report of discussions regarding data availability and preliminary work plan FAO Areas Beyond National Jurisdiction (ABNJ) Common Oceans Tuna Project – Seabird Bycatch Component Brazil 14 - 15 December 2017

Introduction

This report will focus specifically on discussions between BirdLife South Africa staff representing the Common Oceans project, and participants at the Brazil National Awareness Workshop (NAW), held 14-15 December 2017 in Cabo Frio, Brazil. The outcomes presented here are the result of discussions conducted in parallel with the general session of the NAW; a full Workshop Report is available elsewhere, this report covers discussions relating to the data availability and proposed analytical approaches by Brazilian researchers in support of the goals of the Seabird Bycatch Assessment (SBA). The main expected outcome of the SBA is to estimate the number of seabirds killed in tuna longline fisheries annually, from the most recent and credible set of annual observer and effort data (expected to be until 2015, and starting approximately in 2000).

The first phase of the project focuses on national scientists compiling national bycatch data from common data stratifications, and producing standardised reports using simple BPUE models and basic exploratory analysis. The second phase of the project (to run concurrently with phase 1) will have the national scientists undertaking collaborative, inter-sessional work to collate datasets and identify factors explaining the differences in bycatch rates between fleets (seabird Bycatch Per Unit Effort, BPUE). A National Awareness Workshop was held in Cabo Frio, Brazil on 14 and 15 December 2017 to, inter alia, further this aspect of the SBA workplan.

The following points summarise the discussions regarding data and a preliminary work plan discussed at the meeting. The meeting agenda and roster are included in Annex 1. For additional information regarding the meeting see the Brazil National Awareness Workshop Report compiled by BirdLife South Africa.

Summary of discussions regarding data availability and analysis

Work on estimating seabird bycatch in the Brazilian fleet has been undertaken previously, through the Brazilian government and non-governmental organisations, such as Projeto Albatroz. These studies have identified gaps and strengths in the data. Even though all datasets are incomplete, many are still useful. The strengths of the data lie in the information on the overall effort and scale of the fishery however, the largest gap in the data is considered to be information on seabird bycatch. In addition, there exists the problem of missing or non-integrated data. Officials in Brazil are working to find out what happened to the data after the national observer programme was terminated.

After evaluating the available information that was presented during the workshop, the following approaches were identified, to be pursued in 2018. Preliminary results will be presented at the Data Preparation Workshop in Peru (February 2018). A list of possible tasks include:

- 1) Multiple datasets exist that have not been examined. These include Brazilian logbook data, Brazil official database data, and Petrobras-funded datasets from Projeto Albatroz and Targarugas Marinhas (Brazilian Sea Turtle Conservation Project). In some years (particularly 2011) there appears to be a large reduction in catches. The following hypotheses could be reasons for the reduction:
 - a. Abundance of seabirds is low
 - b. Fishery changes were dramatic, implying lower bycatch
 - c. Reporting bias issues, incorrectly implying lower bycatch
 - d. Biased sampling design, incorrectly implying lower bycatch.

To assess which hypothesis is highly likely, we suggested examining the official logbook data (Brazil government database) against one or several other datasets (e.g. Projeto Albatroz's data). If there is consistency between different datasets, it probably represents an under-reported dataset, with a reporting bias. If the Projeto Albatroz dataset shows an increase, then it would be simplest to assume misreporting, and we can estimate bias correction factors using one database as a validation exercise.

- 2) For the broader analysis for estimating seabird bycatch the following approaches were proposed. However, species-specific estimation is difficult as the resolution of the data is low, but if some reliable data on species composition is available, we can use a simple proportions-based technique to reconstruct likely species-specific bycatch rates:
 - a. Simple estimators like the Horvitz Thompson estimator
 - b. Strata examined would be 1*1 or 5*5 degree datasets.
 - c. A more sophisticated model using a Generalized Linear Model (GLM) accounting spatial auto-correlation using Laplace approximations (INLA) could be performed. The following GLM would be examined:

The following models would be examined where there is no temporal stratification but spatial stratification exists (spatial stratification is continuous between years, spatial stratification distinct between years, and spatial stratification correlated between years).

Based on these analyses, the following advice could be ascertained:

- 1) Bias adjusted corrected catch estimates will be generated if differences exist across databases.
- 2) If we assess that data are biased (i.e. sampling design is flawed), we can provide advice on improvements to the sampling design plans and frames.

Timeline on these analyses are outlined below:

- 1) Preliminary approach and analyses presented at the Data Preparation Workshop in Peru, February 2018.
- 2) Inter-sessional work done by Rodrigo Sant'Ana and project consultants. Final product will be delivered with 2 peer-review research papers in 2019. The first proposed paper would outline sampling bias issues (using a simulation and tests, and then examining the multiple databases to assess bias). The second paper would report on methods and results in generating an estimate of seabird bycatch using the simple estimator and comparing with the INLA approach. Again testing of which approach is better will be done using a simulation exercise.

- 3) Set up a sub-committee (of interested Brazilian parties) that will handle data in the future. After the Data Preparation Workshop in Peru, Rodrigo Sant'Ana can communicate outcomes of this workshop to rest of the group.

ANNEX 1 Agenda and Roster

Day 1

Time	Session	Presenter(s)
08:30-08:40	Welcome from the host country	Tatiana Neves – Projeto Albatroz Eduardo Pimenta – Projeto Albatroz
08:40-08:50	Welcome from BirdLife South Africa	Ross Wanless – BirdLife South Africa
08:50-09:10	Introduction of participants	All
09:10-09:40	Why are we talking about seabirds today? Seabird biology, bycatch impacts on seabird conservation, needs and opportunities	Andrea Angel – BirdLife South Africa
09:40-10:00	Introduction of the Common Oceans Project – general objectives of the workshop and expectations of participants	Nini van der Merwe – BirdLife South Africa
10:00-10:30	The importance of understanding patterns of seabird abundance and distribution to estimate seabird bycatch	Rishi Sharma – National Oceanic and Atmospheric Administration
10:30-11:00	Tea	All
11:00-13:00	Understanding the Brazilian fleet – characterisation, numbers and dynamics	Rodrigo Sant’Ana – Universidade de Vale do Itajai Humberto Hazin - The Federal Rural University of the Semi-arid Region
13:00-14:30	Lunch	All
14:30-15:15	Understanding the Brazilian fleet – seabird bycatch	Dimas Gianuca – Projeto Albatroz Rodrigo Sant’Ana - Universidade de Vale do Itajai
15:15-15:30	The NEW National Plan of Action for Albatrosses and Petrels – actions related with the workshop objectives	Anna Carolina Lins - Chico Mendes Institute for Biodiversity Conservation
15:30-16:00	Tea	All
16:00-16:45	Developing heuristics for estimating effort in absence of logbooks – facilitated discussions	Facilitated discussion with Rodrigo Sant’Ana and Rishi Sharma
16:45-17:00	Close out, housekeeping, reminders	All

Day 2

Time	Break-out group – Projeto Albatroz and BirdLife South Africa	Presenter(s)
08:00-08:30	Pro-Tuna Project – Observers Programme	Camila Camilo - Ministry of Industry, International Trade and Services
08:30-09:00	Facilitated discussion – Observer coverage in Brazil fleet: possible solutions	BirdLife South Africa and Projeto Albatroz
09:30-11:30	In an exploratory way, propose possible methods of data analysis	Rodrigo Sant’Ana and Rishi Sharma
11:30-12:00	Next steps	BirdLife South Africa and Projeto Albatroz
12:00-12:15	Monitoring and evaluation	Nini van der Merwe – BirdLife South Africa
12:15-12:30	Closing	BirdLife South Africa and Projeto Albatroz

ANNEX 2 List of workshop participants: Cabo Frio, Brazil

Name	Affiliation
Thais E Coutinho	Ministry of Environment
Bruno Giffoni	TAMAR (Targarugas Marinhas, Brazilian Sea Turtle Conservation Project)
Anna Carolina Lins*	ICMbio (Chico Mendes Institute for Biodiversity Conservation)
Eduardo Pimenta	Projeto Albatroz
Augusto Costa	Projeto Albatroz
Luíza Garcia	Projeto Albatroz
Rishi Sharma*	NOAA (National Oceanic and Atmospheric Administration)
Camila Camilo*	MDIC (Ministry of Industry, International Trade and Services)
Igor Brito	IBAMA (Brazilian Institute of the Environment and Renewable Natural Resources)
Caio G. Marques	Projeto Albatroz
Tatiana Neves*	Projeto Albatroz
Rodrigo Sant'Ana*	UNIVALI (Universidade de Vale do Itajai)
Andrea Angel*	BLSA (BirdLife South Africa)
Nini van der Merwe*	BLSA
Dimas Gianuca*	Projeto Albatroz
Humberto Hazin*	UFERSA (The Federal Rural University of the Semi-arid Region)
Ross Wanless*	BLSA