



**Agreement on the Conservation of Albatrosses and Petrels**

## **Third Meeting of Seabird Bycatch Working Group**

*Mar del Plata, Argentina, 08 – 09 April 2010*

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### **Albatross Task Force Interim Workshop**

### **Mitigation Research Programme 2010**

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## Albatross Task Force Interim Workshop

February 22 – 25, 2009

Buenos Aires, Argentina

Hosted by Aves Argentinas (BirdLife Partner)



### Introduction

In January 2009, during the first ATF Instructor's Workshop, teams identified mitigation research projects for each country.<sup>1</sup> A year after the initial identification of team projects a second ATF meeting was convened to consider the advances achieved on the current projects, report on preliminary results and review the priority mitigation measure research needs for each fleet for 2010.

### Update of mitigation research projects

Taking into account the developments and preliminary results from mitigation research projects during 2009 and considering the capacity, time scale and funding available for each team, new mitigation research projects were drafted and/or additional treatments were added to existing projects that will continue during 2010. In order to assist ACAP in identifying mitigation research priorities for 2010 and beyond, this report outlines the projects that will be conducted in ATF teams during 2010.

### Pelagic Longline

Current ATF pelagic longline projects are based in Brazil, Chile, Uruguay and South Africa.

Initial results from ATF mitigation research projects indicated that seabirds are able to attack baited hooks beyond the aerial extent of tori line designs trialled in 2009, due largely to slow line sink rates. It was therefore recognised that the next logical step in our pelagic longline research programme is to investigate the effect of increasing the sink rate of baited hooks in combination with tori lines with short and long streamers.

For these reasons, sink rate analysis was added to the mitigation research projects for all pelagic longline fisheries:

#### BRAZIL / CHILE

The key objective for Brazil and Chile is to investigate the effect of improved line weighting/line sink rate in combinations with tori line treatments with short and long streamers.

Four treatments are included in the experimental design for Brazil (Figure 1):

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<sup>1</sup> Argentina, Brazil, Chile, Namibia, South Africa and Uruguay. Ecuador, although part of the ATF team is involved in identifying base line seabird bycatch data for a large artisanal fleet and as such was not included in mitigation research.

- 1) Tori line with short streamers plus a 60 g swivel at 5.5 m from the hook;
- 2) Tori line with short streamers plus a 60 g swivel at 2.0 m from the hook;
- 3) Tori line with long streamers plus a 60 g swivel at 5.5 m from the hook;
- 4) Tori line with long streamers plus a 60 g swivel at 2.0 m from the hook.

In Chile the four treatments differ from those for Brazil due to current line weighting configurations (Figure 1):

- 1) Tori line with short streamers plus a 75 g swivel at 3.5 m from the hook;
- 2) Tori line with short streamers plus a 75 g swivel at 2.0 m from the hook;
- 3) Tori line with long streamers plus a 75 g swivel at 3.5 m from the hook;
- 4) Tori line with long streamers plus a 75 g swivel at 2.0 m from the hook.

For both Brazil and Chile the hypotheses include:

H<sub>0</sub>: There is no significant difference in seabird attack rate on baited hooks when using a short or long streamer tori line;

H<sub>0</sub>: There is no significant difference in seabird attack rate on baited hooks when comparing a 75 g swivel placed at 3.5m (Chile) or 60 g at 5.5m (Brazil) with weights placed 2m from the hook;

H<sub>0</sub>: The combination of tori line design (short-long streamer) and line weighting regime has no effect on seabird attack rates.

The response variable for both countries will be seabird attack rates on baited hooks during the set, plus seabird mortality rate. Other variables in data collection protocols will include tori line aerial extent, tori line entanglement rate, sink rate via Time Depth Recorder (TDR) deployment, plus the catch rate of target and bycatch species. TDRs will be placed on the middle (third) hook between buoys.

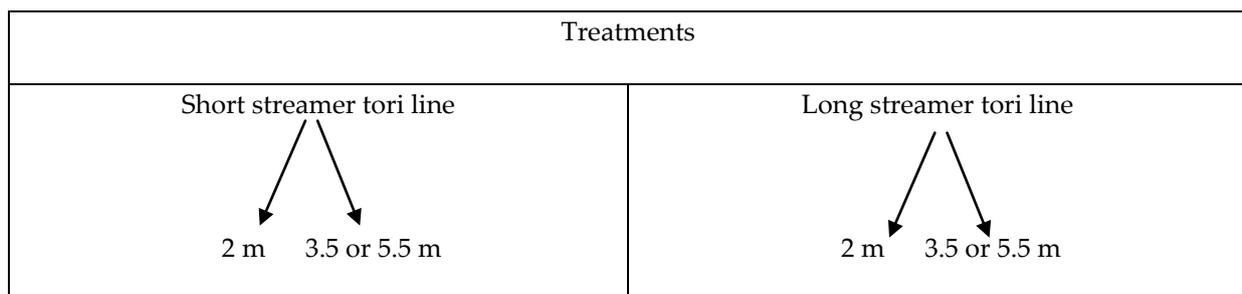


Figure 1: Experimental design for pelagic longline fisheries in Brazil and Chile.

#### URUGUAY

The key objective of the study is to investigate whether a single tori line reduces seabird bycatch rates in the Uruguayan pelagic longline fishery.

Two treatments are included in the experimental design:

- 1) Lines set with a single 'mixed' tori line;
- 2) Lines set without a tori line (control).

$H_0$ = A single tori line use does not reduce the incidental bycatch of seabirds in pelagic longline fisheries in Uruguay

In Uruguay this experimental work is a continuation of the project that was started in 2009. In order to complement the identification of an optimum pelagic tori line design, TDRs will be attached to branch lines during experimental setting operations.

TDR will be randomly deployed throughout the longline and placed in three sets of three TDRs on hook numbers 1, 2 and 3 (five hooks between each buoy).

#### SOUTH AFRICA

In South Africa the development of the current pelagic longline project will continue through 2010.

The key objective is to investigate the effect of adding weight to branch lines on catch rates of target and non-target fish species.

The experimental design includes two treatments:

- 1) A 60 g Safe Lead placed 3.7 m from the hook;
- 2) A 150 g Safe Lead placed 3.7 m from the hook.

$H_0$ = Increasing weight on branch lines from 60 g to 150 g has no effect on catch rate of target and non-target species in pelagic longline fisheries.

#### **Demersal Longline**

While effective suites of mitigation measures exist in demersal longline fisheries, several fleets still require initial seabird bycatch assessment and/or improved aspects of mitigation measures in order to comply with best practice mitigation.

#### NAMIBIA

In Namibia there is no accurate bycatch estimate for the demersal longline fleet but current indications suggest that bycatch levels are high. It is important to rapidly identify mitigation measures for this fishery.

The main objective will be to determine the effect of tori line use on seabird mortality.

Three treatments will be used including:

- 1) Sets with a single tori line;
- 2) Sets with a twin tori line;
- 3) Sets with a control of no mitigation.

The following hypotheses will be tested:

$H_0$ : Tori line use has no effect on seabird bycatch or seabird attack rate on baited hooks;

$H_1$ : There is no difference in seabird attack rate / seabird mortality when using a single or double tori line.

Additionally, TDRs will be used throughout the project to determine the line sink rate profile.

### Demersal Trawl

Current ATF trawl projects are based in Argentina, South Africa and Namibia.

Results from mitigation research projects in 2009 confirmed that tori lines rapidly reduce interactions of seabirds with trawl cables in demersal trawl fisheries and that towed devices improve the practical use of these mitigation measures by reducing entanglements (the crossing-over of tori lines and warp cables). While tori lines are an efficient means of reducing seabird mortality, the long term solution is related to the management of offal discharge.

The following projects will continue, or in the case of South Africa, begin in 2010:

#### SOUTH AFRICA

The primary objective of this project is to investigate the effect of experimentally reducing seabird interactions with trawl warps through offal discharge under pressure. Four treatments will be used:

- 1) Macerating and discarding away from the side of the vessel under pressure
- 2) Macerating and discarding from the scuppers
- 3) Discarding un-macerated offal away from the side of the vessel under pressure (the operational feasibility of this needs investigating).
- 3) No macerating and discarding from the scuppers (control)

#### Null Hypothesis

H<sub>0</sub>: Macerating and/or pumping factory discharge away from the side of the vessel under pressure does not affect seabird interaction rates.

#### ARGENTINA

The current project with the Argentinean trawl fleet will continue through 2010.

The objectives of the study are twofold:

- 1) To investigate the effectiveness of an off-setting towed device to minimise seabird collisions with the warp cable by reducing the exposure of the warp cables in cross winds;
- 2) To reduce entanglements of tori line streamers with warp cables.

Three treatments are included in the experimental design:

- 1) Standard tori line with a weighted buoy as the towed device;
- 2) Standard tori line with an off-setting towed device;
- 3) Control (no mitigation).

H<sub>0</sub> = Tori line use does not reduce seabird interactions with trawl warp cables.

$H_0$  = An off-setting towed device does not reduce entanglements between tori lines and warp cables.

#### NAMIBIA

As in Argentina, the experimental research project in the Namibian demersal trawl fishery will continue through 2010 to collect a full years/seasonal data.

The experiment was designed to compare seabird interactions with trawl warp cables in the presence and absence of tori lines.

Two experimental treatments are tested:

- 1) Trawls with tori lines deployed;
- 2) Trawls with no tori lines deployed (control).

$H_0$  = The use of tori lines in the demersal trawl fleet does not reduce seabird bycatch.

#### **Acknowledgements**

The successes of the ATF would not be possible without the membership contributions of The Royal Society for the Protection of Birds and BirdLife International, significant support from the David and Lucile Packard Foundation, Volvo, BBC Wildlife Fund and the Boston Environmental Fund plus a range of private sponsors.

BirdLife in-country partners including Aves y Conservación, SAVE Brazil, Aves Uruguay, Aves Argentinas and BirdLife South Africa greatly facilitate and support the work of the ATF. Non-BirdLife collaborators such as Centro Ballena Azul, the Universidad Austral de Chile, the Namibian Nature Foundation, Namibian Ministry of Fisheries and Marine Resources, Proyecto Albatroz, and Proyecto Albatros y Petreles – Uruguay are also critical to the success of the ATF.