

The development of ACAP seabird bycatch indicators, methodological approaches and reporting requirements

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Bycatch Data Reporting and Assessment

What exactly are the objectives and how best to achieve them?

Measuring the success of the Agreement.....

Data issues



ACAP bycatch reporting objectives:

- Routinely review and update information on levels and trends of bycatch of ACAP species

- Assess the effectiveness of bycatch mitigation measures used in these fisheries



Indicators of seabird bycatch

- Bycatch Rates: Birds caught Per Unit Fishing Effort (e.g. number of birds caught per 1000 hooks set)
- Total number of birds killed per year fleet (preferably by species)



Estimating total number of birds killed

- Simple Ratio Estimate
- Stratified Ratio Estimate
- Model Based Extrapolation
- Quantitative Risk Assessment



General Considerations

- Level of taxonomic resolution – species level ID best, but coarser ID still useful
- Undetected mortality
- Data gaps and unobserved strata – for both bycatch rates and fishing effort
- Several assumptions needed to fill gaps – often leads to high but unquantified uncertainty in bycatch estimates



Proposed categorisation for birds unidentified to species level

Seabird sp	Large albatross sp	<i>Diomedea sp</i>	<i>Diomedea sanfordi</i>	Northern Royal Albatross
			<i>Diomedea epomophora</i>	Southern Royal Albatross
			<i>Diomedea exulans</i>	Wandering Albatross
			<i>Diomedea antipodensis</i>	Antipodean Albatross
			<i>Diomedea amsterdamensis</i>	Amsterdam Albatross
			<i>Diomedea dabbenena</i>	Tristan Albatross
	Smaller albatross sp	<i>Phoebastria sp</i>	<i>Phoebastria fusca</i>	Sooty Albatross
			<i>Phoebastria palpebrata</i>	Light-mantled Albatross
		<i>Phoebastria sp</i>	<i>Phoebastria irrorata</i>	Waved Albatross
			<i>Phoebastria nigripes</i>	Black-footed Albatross
			<i>Phoebastria immutabilis</i>	Laysan Albatross
			<i>Phoebastria albatrus</i>	Short-tailed Albatross
		<i>Thalassarche sp</i>	<i>Thalassarche chlororhynchos</i>	Atlantic Yellow-nosed Albatross
			<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross
			<i>Thalassarche chrysostoma</i>	Grey-headed Albatross
			<i>Thalassarche melanophrys</i>	Black-browed Albatross
			<i>Thalassarche impavida</i>	Campbell Albatross
			<i>Thalassarche bulleri</i>	Buller's Albatross
			<i>Thalassarche cauta</i>	Shy Albatross
			<i>Thalassarche steadi</i>	White-capped Albatross
	Petrel sp	<i>Macronectes sp</i>	<i>Macronectes giganteus</i>	Southern Giant Petrel
			<i>Macronectes halli</i>	Northern Giant Petrel
		<i>Procellaria sp</i>	<i>Procellaria aequinoctialis</i>	White-chinned Petrel
<i>Procellaria conspicillata</i>			Spectacled Petrel	
<i>Procellaria parkinsoni</i>			Black Petrel	
<i>Procellaria westlandica</i>			Westland Petrel	
<i>Procellaria cinerea</i>			Grey Petrel	
Shearwater sp		<i>Ardenna creatopus</i>	Pink-footed Shearwater	
		<i>Puffinus mauretanicus</i>	Balearic Shearwater	

Advice and tools to guide and support seabird bycatch mitigation

<http://www.acap.aq/en/resources/bycatch-mitigation>



ACAP SUMMARY ADVICE FOR REDUCING IMPACT OF PELAGIC LONGLINES ON SEABIRDS

Reviewed at the Eighth Meeting of the Parties to the Agreement on the Conservation of Albatrosses and Petrels, Punta del Este, Uruguay, 2011

Goal: Reduce the bycatch of seabirds to the lowest possible levels.

SUMMARY

A combination of weighted branch lines, bird scaring line mitigation in pelagic longline fisheries. These measures reduce fishing effort overlaps with seabirds vulnerable to bycatch to the lowest possible levels. Other factors such as safety of the fishery should also be recognised.

Currently, no single mitigation measure can reliably reduce seabirds in most pelagic longline fisheries. The most effective measures in combination.

INTRODUCTION

The incidental mortality of seabirds, mostly albatrosses and petrels, continues to be a serious global concern and was a major focus of the Agreement on the Conservation of Albatrosses and Petrels. Seabirds are killed when they become hooked and die from longline hooks as the gear is deployed. They also can be injured, however, many of these seabirds can be released alive. Mitigation measures are broadly applicable, the application varies with local longlining methods and gear configurations. Literature on seabird bycatch mitigation in pelagic fisheries relates to larger vessels, with little research attention to smaller vessels and the gear configuration and methods of deployment.



SEABIRD BYCATCH IDENTIFICATION GUIDE

UPDATED AUGUST 2015






Bycatch Mitigation FACT-SHEETS (Updated September 2014)

Practical information on seabird bycatch mitigation measures

Introduction: Seabird bycatch mitigation measures

This series of 15 Seabird Bycatch Mitigation Fact-sheets describes the range of potential mitigation measures available to reduce seabird bycatch in longline and trawl fisheries. The sheets assess the effectiveness of each measure, highlight their strengths, and make best practice recommendations for their effective adoption. They help decision-makers choose the most effective measures for their longline and trawl fisheries.

Seabirds are species that are often slow to mature and slow to breed. They often lay a maximum of a single egg in a breeding cycle, and many species only breed every other year. Seabirds are very long-lived, with natural adult mortality rates that are very low. These traits make any considerable increase in adult mortality potentially damaging, as even small increases in mortality can reduce population sizes.

Seabirds are the single greatest threat facing many albatrosses, in particular, are under extreme threat. In 2011, seabird bycatch is unnecessary and it not only has disastrous consequences for the fisheries but also makes them less efficient. Fortunately, there are many effective solutions that can prevent seabird bycatch in longline and trawl fisheries.

Bycatch in longline fisheries

Seabird mortality on longline hooks during the period of setting the vessel and striking the line of foraging seabirds. Mitigation measures reduce contact between seabirds and hooks.

Bycatch in trawl fisheries

Mortality of albatrosses and petrels in trawl fisheries is a major threat. The causes of mortality are varied and depend on the nature of the gear used and the species targeted. Mortality is categorized into two broad types: cable-related mortality, including collisions with netcode cables, warp cables and paravanes, and net-related mortality, which includes all deaths caused by net entanglement.



Figure 1. Streamer lines are an example of a cheap seabird bycatch mitigation measure, which can be used in combination with other measures to great effect.

Mitigation measures

There are several simple, inexpensive yet effective mitigation measures available that, when used conscientiously, can reduce the number of seabirds killed in longline and trawl fisheries. A mitigation measure can be defined as a modification to gear design or fishing operation that reduces the likelihood of catching seabirds.

Mitigation measures tested in trawl fisheries are either based on the principle of deterring birds from coming into contact with the warp, paravane or netcode cables, which are the parts of the trawl that cause the majority of seabird deaths, or reducing the attractiveness of the vessel by managing the discharge of offal/factory waste (Lakkaborg, 2008).

Mitigation measures for longline fishing have been classified somewhat differently, but are typically divided into four main categories:

1. Avoid fishing in areas and at times when seabird interactions are most likely and intense (night setting, area and seasonal closures).
2. Limit bird access to baited hooks (underwater setting funnel, weighted lines, shrew/bait, line shrouts, bait-casting machines, sink setting).
3. Deter birds from taking baited hooks (streamer bird-scaring lines, acoustic deterrents, water cannons).
4. Reduce the attractiveness or visibility of the baited hooks (dumping of offal, artificial baits, blue-dyed baits) (Lakkaborg, 2008).

Reporting Framework

Estimates and associated metadata

Sufficiently flexible

Work in progress

