
**A NEED FOR IMPROVED REPORTING ON SEABIRD BYCATCH IN
IOTC LONGLINE FISHERIES**

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Abstract

The National Reports produced by CPCs between 2011 and 2014 were reviewed to determine if the reporting requirements by CPCs reflect the objectives of relevant resolutions. Resolution 10/06 is the relevant resolution against which CPCs reported; this was superseded in 2012 by Resolution 12/06, but mandatory implementation of 12/06 only came into force on 1 July 2014. Specifically we tested if National Reports allow the assessment of seabird bycatch levels. CPCs were generally compliant, with compliance in reporting improving between 2011 and 2014, with the exception of three CPCs that had very poor reporting for seabird interactions. The lack of a structured reporting format resulted in information provided by CPCs being non-standardised, the effect of which is that the objectives of Resolution 12/06 are met inadequately. We propose an approach based on that currently used within the CCSBT, where CPCs are required to report on fishing effort, observer coverage, and seabird bycatch and interactions south of 25°S in their national reports. With minor modifications to the current bycatch data table required by the IOTC and the addition of some information on mitigation measures used by vessels operating south of 25°S, the objectives of Resolution 12/06 would be met and IOTC's reporting would be harmonised with that of the CCSBT.

Keywords: mitigation measures; fisheries observer; Resolution 12/06

1. Introduction

We reviewed the National Reports submitted by CPCs between 2011 and 2014, tracking the reported information on seabird bycatch data and use of mitigation measures as required by the IOTC Resolution 12/06 (National Reports 2011-2014).

In National Reports, CPCs are required to report on the following (IOTC Guidelines 2014):

1. *A brief summary of key national strategies related to seabirds including,*
 - a. *National Plan of Action (NPOA) for seabirds,*
 - b. *seabird mitigation measures used by fleet,*
 - c. *recovery plans (i.e. measures in place required to recover and protect particular seabird species, usually part of a NPOA), and*
 - d. *interactions*
2. *Provide a table of observed annual catches of species of special interest (incl. seabirds) by species, by gear for the national fleet, in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2009–2013 or to the extent available)*

Resolution 12/06 requires CPCs to use at least two mitigation measures when operating south of 25°S. It further requires in Paragraph 7:

7. *CPCs shall provide to the Commission, as part of their annual reports, information on how they are implementing this measure and all available information on interactions with seabirds, including bycatch by fishing vessels carrying their flag or authorised to fish by them. This is to including details of species where available to enable the IOTC Scientific Committee to annually estimate seabird mortality in all fisheries within the IOTC area of competence.*

This work represents the first attempt to assess whether the reporting by CPCs is providing data that are adequate (in both quantity and format) to meet the requirement of Res 12/06 to estimate seabird mortality in all fisheries.

2. Methods

The IOTC's catch and effort database was interrogated for CPCs reporting effort south of 25°S. Where effort was reported in 2010 and 2013, and that effort was non-trivial, we assessed their corresponding National Reports (from 2011 and 2014).

Relevant National Reports were assessed against the following criteria:

1. Do CPCs comply with annual reporting requirements for seabird interactions, as laid out in the National Report template?
2. Do CPCs report on seabird bycatch mitigation measures used?
3. Do CPCs report on seabird interactions (or, more specifically, seabird bycatch)?
4. Do CPCs report that an observer programme is in place?
5. Do CPCs report observer coverage?

For each criterion, we checked if reporting had improved or not between the two years. Additionally we assessed whether or not the reports or the reporting requirements from IOTC reflect adequately the intent and required information expressed in Resolution 12/06. The following were considered:

1. Do CPCs' annual reporting requirements reflect objectives of data collection and implementation of seabird conservation measures as specified by Resolution 12/06? This included a key question – whether or not it is possible to extrapolate total observed seabird mortality per fleet/CPC from reported data (noting that this does not mean that all raw information needs to be presented in the National Reports, just that it is reported as provided to the IOTC)
2. Is the reported information made available, and does it facilitate assessment (by the IOTC Scientific Committee or its subsidiary body, the Working Party on Ecosystems and Bycatch) of current seabird bycatch levels and progress towards the implementation of mitigation measures?

3. Results and Discussion

The following nations have meaningful longline effort south of 25°S: Australia, China, EU nations (UK, Spain and Portugal), Indonesia, Japan, Korea, Seychelles, South Africa and Taiwan (Table 1). Of those, only three CPCs did not provide a table detailing seabird bycatch (China, EU (UK) and Seychelles); this non-provision of tables was consistent in both 2011 and 2014 (Table 1). In 2011, 7 CPCs reported on the use of seabird bycatch mitigation measures, and in 2014 that increased to 8 (Table 1). The details of which measures were used

were slightly less well reported, with just 4 CPCs specifying which measures were used in 2011, improving to 6 in 2014 (Table 1). Nine of the 11 CPCs had an observer programme in place in 2014 (only EU (UK) and Seychelles didn't), and all that did so also reported on observer coverage levels (Table 1). By 2014 some CPCs (notably Australia, EU (Portugal), South Korea and South Africa) are commendably diligent in meeting their reporting obligations in relation to seabird bycatch, several were more patchy in reporting, and the three CPCs (China, EU (UK) and Seychelles) reported very few data.

The ultimate sentence of Paragraph 7 of Resolution 12/06 establishes the need for data to be presented in a way that allows an annual estimate of seabird bycatch. However, this assessment reveals that in 2014, such an estimate was only possible for five CPCs. The Seabird Executive Summary (IOTC-WPEB 2014) notes that information on seabird interactions should be reported in National Reports, stratified by season, area and with effort (expressed as a bycatch rate or similar). Resolution 12/06 distinguishes between seabird conservation measures north and south of 25°S, but does not explicitly state that bycatch data for effort south of 25°S should be reported. Thus CPCs only report on total numbers of birds caught and observer coverage on total effort. CPCs are not currently requested by IOTC to report total effort south of 25°S in their National Reports, nor how much of that effort was observed. Therefore the numbers of birds caught (which we must presume are largely or entirely from effort south of 25°S) is not related to effort (observed or total) south of 25°S in their National Reports. As a result, unless a CPC provides an estimated seabird CPUE (bycatch rate), this cannot be reliably estimated from the information in National Reports and the Catch and Effort statistics curated by the Secretariat. Therefore, despite CPCs largely complying with reporting requirements as laid out in the National Report Template, this does not reflect the objectives of Resolution 12/06. This is to the detriment of understanding seabird bycatch levels, which cannot be assessed with the current reporting system.

It is seldom possible to extract information from the National Reports regarding what proportion of each fleet uses which combinations of the three mitigation measures required when operating south of 25°S. This makes the assessment of levels of implementation and effectiveness of Resolution 12/06 (as required in the Resolution) particularly challenging.

To determine overall or, preferably, spatially and temporally stratified seabird mortality (a desired outcome of Resolution 12/06), the seabird bycatch section of the National Report should include:

- total effort south of 25°S
- total observed effort south of 25°S
- total observed seabird bycatch south of 25°S
- the ultimate fate of seabird bycatch i.e. dead or alive or unknown when released
- species ID and numbers caught
- spatial (e.g. 10x10 degree squares) and temporal (e.g. season) stratification

3. Recommendations

The table currently required in the guidelines does not require specific reporting fields and CPCs therefore report in a non-standardised manner.

The following table proposes minimum reporting requirements to enable the estimation of seabird bycatch and mortality rates north and south of 25°S. The table has been modified from that used by the CCSBT for all non-commercial bycatch species groups.

Observer seabird interaction data sheet for the IOTC longline fleet

Name of member state: _____;

Reporting period* or calendar year _____

Species _____

| Fishery | | Observed | | | | | Estimate |
|-------------------|--------------|------------------------------------|--------------------------------|-------------------|----------------------|------------------------|-----------------------------|
| Area ¹ | Total effort | Total observed effort ² | Observer coverage ³ | Captures (number) | Mortalities (number) | Live releases (number) | Mortality estimate (number) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Total | | | | | | | |

*This field can be used to specify a temporal stratification to the data e.g. season

¹Spatial stratification (5x5, 10x10 or other – to be determined)²Number of hooks observed hauled³Percentage of all hooks set that were observed hauled

In addition to this table, there is a clear need to understand how CPCs are implementing Resolution 12/06, and the existing National Report Template requires that CPCs report on “*seabird mitigation measures used by fleet*”. Again, due to a lack of formal structure to facilitate this flow of information, CPC responses to this section is non-standardised and often incompletely absent. To improve this situation, we recommend the following mandatory questions be added to the National Report Template:

1. How many vessels operated south of 25°S in the period covered by this report?
2. What proportion of effort south of 25°S used the following combinations of mitigation measures:
 - a) Bird scaring lines and night setting _____%
 - b) Bird scaring lines and line weighting _____%
 - c) Night setting and line weighting _____%

Example

National Report for Country X would have the following responses:

1. 10 vessels
 - a) 50% (in other words, half the effort used BSLs and night setting)
 - b) 40%
 - c) 10%

Should the IOTC’s National Report template be amended as recommended, the work of the WPEB to understand CPCs efforts to avoid seabird bycatch would be very significantly improved.

4. References

National Reports, 2011 – 2014. Reports reviewed: Australia, China, EU nations (UK, Spain and Portugal), Indonesia, Japan, Korea, Seychelles, South Africa and Taiwan.
Available from: <http://www.iotc.org/documents>

IOTC Guidelines, 2014. Guidelines for the preparation of National Reports for the IOTC Scientific Committee in 2014. IOTC-2014-SC17. Downloaded on 04 July 2015 from: <http://www.iotc.org/documents/2014-guidelines-preparation-national-reports-iotc-scientific-committee>.

IOTC-WPEB10 2014. Report of the 10th Session of the IOTC Working Party on Ecosystems and Bycatch. Yokohama, Japan, 27–30 October 2014. IOTC-2014-WPEB10-R[E]: 94 pp.

Table 1. Reported levels of implementation of, and detailed reporting against IOTC Resolution 10/06 for CPCs operating south of 25°S in 2011 and 2014

| | Australia 2011 | Australia 2014 | China 2011 | China 2014 | Portugal (EU) 2011 | Portugal (EU) 2014 | Spain (EU) 2011 | Spain (EU) 2014 | UK (EU) 2012 | UK (EU) 2014 | Indonesia 2011 | Indonesia 2014 | Japan 2011 | Japan 2014 | Korea 2011 | Korea 2014 | Taiwan 2011 | Taiwan 2014 | Seychelles 2011 | Seychelles 2014 | South Africa 2011 | South Africa 2014 | |
|---|----------------|----------------|------------|------------|--------------------|--------------------|-----------------|-----------------|--------------|--------------|----------------|----------------|------------|------------|------------|------------|-------------|-------------|-----------------|-----------------|-------------------|-------------------|-----|
| Are CPCs implementing Res 10/06? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | |
| Are mitigation measures reported as used south of 25°S? | Yes | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes | No | No | No | No | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | |
| Do CPCs report which measures are used? | Yes | Yes | No | No | Yes | Yes | No | No | No | Yes | No | No | No | No | Yes | Yes | No | Yes | No | No | Yes | Yes | |
| Do CPCs report if mitigation measures conform to minimum standards? | Yes | Yes | No | No | Yes | Yes | No | No | No | No | No | No | No | No | No | Yes | Yes | Yes | Yes | No | No | Yes | Yes |
| Seabird interactions | | | | | | | | | | | | | | | | | | | | | | | |
| Are seabird interaction data provided? | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |
| If yes, are data: 1) Estimates, 2) Total numbers, 3) By species, 4) Rates | 3,4 | 3,4 | 2 | 2 | | 3 | 2,4 | 2-4 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | | 2 | 4 | 4 | |
| If yes, are data: 1) from observed trips, 2) entire fleet, or 3) both? | 1 | 1 | 3 | 2 | | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 1 | 1 | |
| Is it possible to extrapolate total seabird mortality from reported data? | Yes | Yes | No | No | No | Yes | Yes | Yes | No | No | No | No | No | No | Yes | Yes | No | No | No | No | No | No | Yes |
| Is species ID information provided? | Yes | Yes | NA | NA | No | Yes | No | Yes | No | NA | No | No | Yes | Yes | Yes | Yes | No | No | No | No | Yes | Yes | |
| Is fate of released birds (dead/alive) reported? | No | No | NA | NA | No | Yes | No | Yes | No | NA | No | Yes | No | No | No | No | No | No | No | No | No | No | Yes |
| Observer Programme | | | | | | | | | | | | | | | | | | | | | | | |
| Is an observer programme operational? | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes |
| Is observer coverage reported? | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes |
| If yes: 1) as a % total effort, or 2) not specified | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | | | 1 | 1 | |
| Is spatial observer coverage mapped? | No | No | Yes | Yes | NA | Yes | No | Yes | NA | NA | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | NA | NA | Yes | Yes | |