
Recommendations for addressing seabird bycatch data requirements in IOTC longline fisheries

Rachel Bristol, Samantha Petersen, Cleo Small & Mark Tasker

Introduction

The seabird resolution 06/04 calls for IOTC to develop effective mechanisms to enable CPCs to record and exchange data on seabird interactions. Independent observer data is well recognized as the only effective means for collecting this information. Several examples exist worldwide of effective observer schemes e.g. CCAMLR and in the Indian Ocean the South African observer programmes. This paper draws on experience gained from these two examples and highlights objectives of observer programmes, details data requirements and recommends a way forward for IOTC.

Objectives

1. To document and quantify seabird bycatch within IOTC fisheries;
2. To understand what factors (e.g. spatial, temporal, gear and operational) contribute to observed seabird bycatch rates recorded;
3. To scale up reliably observed information to that of the fishery;
4. To assess the effectiveness of mitigation measures aimed at reducing the incidental mortality of seabirds.

We recognize that the most effective data collection protocol should adopt a multi-species (including turtle, shark and marine mammals) approach. This should be incorporated into data requirements list below. Observer cannot be expected to collect detailed information on all species concurrently. Therefore specialized seabird bycatch data requires a dedicated observer or at least dedicated time periods within the observer schedule.

Observer scheme characteristics

CCAMLR experience has demonstrated the importance of a centralized observer programme using independent, appropriately trained observers and the need for a high observer coverage to assess bycatch levels adequately. We thus recommend high observer coverage over a limited period of time in order to evaluate bycatch levels after which time the necessary level of coverage is reviewed.

A suitable approach might be to collect seabird data south of 20 degrees south. Within this area data should be:

- Spatially and temporally representative of each of the fisheries operating in this area.
- Cover a minimum 20% of vessels/trips over a two year period
- Ensure at least 50% of hooks are monitored specifically for seabird bycatch.

Data requirements to ensure objectives are met are listed in the examples of possible data sheets in appendix 1 these include:

- Gear e.g. branch-line length, light-sticks, bait type
- Operational e.g. time of set, position
- Seabird catch e.g. number and species caught
- Seabird abundance estimate e.g. number of birds around the boat
- Mitigation e.g. use of a tori or bird-scaring line

In addition, data sheets will need to improve in order to record fishery-wide effort expressed by gear configuration and target species.

Recommendations for a way forward

We recognise that observer programmes are a major undertaking, but they are essential to addressing bycatch of vulnerable species e.g. seabirds, turtles and sharks, as well as collecting data on the target species and thus need to be implemented as a matter of urgency. In order to fulfil paragraph 1, resolution 06/04 we recommend the following steps be considered:

1. Agree on a timeline for development and implementation of observer programme
2. Agree minimum observer standards for collecting bycatch data
 - a. Establish a minimum coverage (temporal and spatial considerations)
 - b. Establish minimum data requirements
3. Set up a central database
4. Implement
 - a. Train observers
 - b. Deploy observers
 - c. Submit data to the central database
5. Assess total bycatch at the scale of the fishery

Appendix 1: Pelagic longline daily set and haul data collection

| Vessel | | | | | | Set & Haul No. | | |
|--|-------------------|----------------|------------|--------------------------------------|-----------------------------|------------------------|---|--|
| | Date | Time | Depth | Speed | Position (deg min.min) | | | |
| | <i>(dd/mm/yy)</i> | <i>(hh:mm)</i> | <i>m/f</i> | <i>Knots</i> | <i>dd °mm'ss(N/S)</i> | <i>ddd °mm'ss(E/W)</i> | | |
| Start Setting | / / | : | | | | | | |
| End Setting | / / | : | | | | | | |
| Start Hauling | / / | : | | | | | | |
| End Hauling | / / | : | | | | | | |
| Tori line used (Cross one) | | | | Yes: one | Yes: two | None flown | | |
| Estimated aerial coverage | | | | | | | | |
| No & length steamers | | | | | | | | |
| Did you observe any problems with the Tori line? | | | | | | | | |
| Offal dumped on side of hauling during haul | | | | Yes | No | | | |
| Did fishing line get entangled? With what? | | | | | | | | |
| Line setter/bait caster? Yes / No | | | | Speed of line setter/bait caster | | | | |
| How was the line weighted? | | | | | | | | |
| Are hooks removed from offal? | | | | | | | | |
| <i>Gear Details</i> | | | | | | | | |
| Total number of hooks set | | | | No of hooks observed during hauling* | | | | |
| Length of the branchline | | | | Length of bouyline | | | | |
| Bait (type and %) | | 1. | % | 2. | % | 3 | % | |
| Lightsticks (colour and no.) | | | | | Describe weighting regime** | | | |

| Weather Observations | | | | |
|-----------------------------|---------|------------------|-------------------------|------|
| | Setting | | Hauling | |
| Wind | Force: | Dir: | Force: | Dir: |
| Darkness @ night | Moon | Full Quarter New | Cloud cover at night*** | |

| Seabird abundance estimate**** | | | | | |
|--|--------------------------|---------------|---------------|------------|--|
| If setting during daylight – count at start of set and then hourly. | | | | | |
| Do counts at start of haul, 1hr after start of haul, 4hrs after, 7 hours after, 1hr after end. | | | | | |
| Time | Birds (species or group) | < 50m | 50-200m | Offal? | Fishing activity (e.g. Setting, hauling or soak) |
| e.g. 14hoo | Albatrosses | 5 | 10 | yes | Start of haul |
| | | | | | |
| | | | | | |
| Seabird, turtle & shark catch estimate***** | | | | | |
| Species (include age if known) | | Number caught | Dead or alive | Released | Carcass kept (sample no) |
| e.g. Juvenile Black-browed Alb | | 2 | Dead | No | Yes, #1, #2 |
| Shy Albatross | | 1 | Alive | Yes, alive | No |
| Blue sharks | | 2 | Alive | Yes, alive | No |

Notes:

* Important to record the numbers of hooks observed specifically for seabirds. If the observer is in the factory or collecting information elsewhere they may miss seabirds being hauled. Therefore it is important to be able to relate the numbers of birds caught to the number of hooks recorded. It is not possible to accurately record the number of birds killed if working in the factory or from the ships bridge.

** Describe line weighting regime e.g. size and position of weighted swivel (60g, 2 fathoms from hook) or integrated weighted line (5m of lead core line attached to hook)

***Record cloud cover as a percentage i.e. 50%=50% of the sky is covered in clouds. This gives us an indication of how dark the night is. Seabirds are generally caught on bright nights such as during full moon.

****Its important to get an estimate of abundance to standardise catch rates. Ideally you would aim for species by species counts. A minimum would be total seabirds around the vessel and a compromise could be number of albatrosses versus number of petrels.

*****Dead or alive column refers to status when caught, Released – record yes or no and whether dead or alive e.g. yes, dead