
REVIEW OF CURRENT CONSERVATION AND MANAGEMENT MEASURES RELATING TO BILLFISH SPECIES

PREPARED BY: IOTC SECRETARIAT, 8TH AUGUST 2018

PURPOSE

To encourage participants at the 16th Working Party on Billfish (WPB16) to review some of the existing Conservation and Management Measures (CMM) relating to billfish, noting the CMMs contained in document IOTC–2018–WPB16–04; and as necessary to 1) provide recommendations to the Scientific Committee on whether modifications may be required; and 2) recommend whether other CMMs may be required.

BACKGROUND

In addition to the CMMs outlined in document IOTC–2018–WPB16–04, billfish in the Indian Ocean are currently subject to several other Conservation and Management Measures adopted by the Commission.

Resolution 15/01: *On the recording of catch and effort data by fishing vessels in the IOTC area of competence*

Resolution 15/02: *On the Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating non-Contracting Parties (CPCs)*

Resolution 16/04: *On the implementation of a Pilot Project in view of Promoting the Regional Observer Scheme of IOTC*

Resolution 16/07: *On the use of artificial lights to attract fish*

Resolution 16/08: *On the prohibition of the use of aircrafts and unmanned aerial vehicles as fishing*

In an attempt to focus the efforts of the WPB, it is our aim to have participants annually review some of the key CMMs based on scientific advice, or which match current requests from the Commission.

DISCUSSION

As part of best practice, the WPB is obliged to review existing CMMs and consider whether their science-based components need to be modified or updated. If this is the case, then the WPB should provide clear, science-based recommendations for the SC's consideration.

The participants of WPB16 are asked to **NOTE** the following from the report of the 22nd Session of the Commission:

Consideration of management measures related to Billfish

The Commission adopted IOTC Resolution 18/05 On management measures for the conservation of billfish, stripped marlin, black marlin, blue marlin and Indo-Pacific sailfish.

RECOMMENDATION

Noting the information contained in working paper IOTC–2018–WPB16–06, the WPB should aim to provide recommendations to the SC that clearly outline whether further changes to Resolutions 15/01, 15/02 and 18/05 are required, or amendments/additions to other CMMs.

APPENDICES

Appendix A: Resolution 15/01 *On the recording of catch and effort data by fishing vessels in the IOTC area of competence*

Appendix B: Resolution 15/02 *On the Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating non-Contracting Parties (CPCs)*



- Appendix C:** Resolution 16/04 *On the implementation of a Pilot Project in view of Promoting the Regional Observer Scheme of IOTC*
- Appendix D:** Resolution 16/07 *On the use of artificial lights to attract fish*
- Appendix E:** Resolution 16/08 *On the prohibition of the use of aircrafts and unmanned aerial vehicles as fishing*

APPENDIX A

RESOLUTION 15/01

ON THE RECORDING OF CATCH AND EFFORT DATA BY FISHING VESSELS IN THE IOTC AREA OF COMPETENCE

Keywords: Data recording; logbook; purse seine; longline; gillnet; pole and line; handline; trolling; fishing vessels.

The Indian Ocean Tuna Commission (IOTC),

RECALLING the commitment made by Contracting Parties under Article V of the IOTC Agreement to keep under review the conditions and trends of the stocks and to gather, analyze and disseminate scientific information, catch and effort statistics and other data relevant to the conservation and management of the stocks and to fisheries based on the stocks covered by the Agreement;

CONSIDERING the provisions set forth in Resolution 15/02 *Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)* (or any subsequent superseding Resolution), and in particular paragraph 4, which sets out the catch and effort reporting requirements for surface fisheries, longline and coastal fisheries;

ACKNOWLEDGING that the IOTC Scientific Committee has repeatedly stressed the importance of the timeliness and accuracy of data submissions for Members;

ALSO RECALLING the outcomes of the 9th Session of the IOTC Scientific Committee held in Victoria, Seychelles from 6 to 10 November 2006 where it was agreed that a standardized logbook would be advantageous and agreed on the minimum requirements for all purse seine and bait boat fleets operating in the IOTC area of competence in order to harmonize data gathering and provide a common basis for scientific analysis for all IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs);

FURTHER RECALLING the recommendations adopted by the KOBE II Workshop on Bycatch, held in Brisbane, Australia, 23–25 June 2010; in particular that RFMOs should consider adopting standards for bycatch data collection which, at a minimum, allows the data to contribute to the assessment of bycatch species population status and evaluation of the effectiveness of bycatch measures, and that the data should allow the RFMOs to assess the level of interaction of the fisheries with bycatch species;

FURTHER CONSIDERING the work of the small task force created by the IOTC Scientific Committee during its 10th Session held in Seychelles in November 2007, to harmonize the various forms currently used by the fleets and the IOTC Scientific Committee agreement on the minimum standard requirements for all purse seine, longline and gillnet fleets as well as the produced logbook template;

FURTHER CONSIDERING the deliberations of the 13th Session of the IOTC Scientific Committee held in Victoria, Seychelles from 6 to 10 December 2010, that recommended three options, one of which is mandatory reporting of a revised list of shark species in logbooks to improve the data collection and statistics on sharks in the IOTC area of competence;

FURTHER CONSIDERING the deliberations of the 14th Session of the IOTC Scientific Committee held in Mahé, Seychelles from 12 to 17 December 2011, that proposed a list of shark species for all gears and recommended minimum recording requirements for handline and trolling gears in the IOTC area of competence;

FURTHER CONSIDERING the recommendations of the 17th Session of the IOTC Scientific Committee referring to bycatch;

FURTHER CONSIDERING the call upon States, either individually, collectively or through regional fisheries management organizations and arrangements included in the United Nations General Assembly Resolution 67/79 on sustainable fisheries to collect the necessary data in order to evaluate and closely monitor the use of large-scale fish aggregating devices and

others, as appropriate, and their effects on tuna resources and tuna behavior and associated and dependent species, to improve management procedures to monitor the number, type and use of such devices and to mitigate possible negative effects on the ecosystem, including on juveniles and the incidental bycatch of non-target species, particularly sharks and turtles;

ADOPTS, in accordance with the provisions of Article IX, paragraph 1 of the IOTC Agreement, the following:

1. Each flag CPC shall ensure that all purse seine, longline, gillnet, pole and line, handline and trolling fishing vessels flying its flag and authorized to fish species managed by IOTC be subject to a data recording system.
2. The measure shall apply to all purse seine, longline, gillnet, pole and line, handline and trolling fishing vessels over 24 meters length overall and those under 24 meters if they fish outside the EEZs of their flag States within the IOTC area of competence. The data recording systems for developing CPCs vessels less than 24 meters operating within the EEZ of coastal States are subject to Paragraphs 11 and 12. The vessels of less than 24 meters operating within the EEZ of developed CPCs shall apply this measure.
3. All vessels shall keep a bound paper or electronic logbook to record data that includes, as a minimum requirement, the information and data in the logbook set forth in **Annex I, II and III**.
4. Each flag CPC shall submit to the IOTC Executive Secretary by 15 February 2016 a template of its official logbooks to record data in accordance with **Annex I, II and III**, for publishing on the IOTC website to facilitate MCS activities. For CPCs that use electronic logbook systems, a copy of the applicable regulations implementing the electronic logbook system in that CPC, a set of screen captures and the name of the certified software may be provided. If changes are made to the template after 15 February 2016, an updated template shall be submitted.
5. Where the logbook is not in one of the two languages of the IOTC, CPCs shall provide a complete field description of the logbook in one of the two languages of the IOTC together with the submission of the sample of the logbook. The IOTC Executive Secretary shall publish the sample of the logbook and the field description on the IOTC website.
6. **Annex I** includes information on vessel, trip and gear configuration for purse seine, longline, gillnet and pole and line, and shall only be completed once for each trip, unless the gear configuration changes during the trip.
7. **Annex II** contains information for purse seine, longline, gillnet and pole and line operations and catch, which shall be completed for each set/shot/operation of the fishing gear.
8. **Annex III** contains specifications for handline and trolling gears.
9. The logbook shall be completed by the Master of the fishing vessel and submitted to the flag State administration, as well as to the coastal State administration where the vessel has fished in that coastal State's EEZ. Only the part of the logbook corresponding to the activity deployed in the coastal State EEZ shall be provided to the coastal State administration where the vessel has fished in that coastal State's EEZ.
10. The Flag State shall provide all the data for any given year to the IOTC Secretariat by June 30th of the following year on an aggregated basis. The confidentiality rules set out in Resolution 12/02 Data Confidentiality Policy and Procedures (or any subsequent superseding Resolution) for fine-scale data shall apply.
11. Noting the difficulty in implementing a data recording system on fishing vessels from developing CPCs, the data recording systems for vessels less than 24 meters of developing CPCs operating inside the EEZ shall be implemented progressively from 1 July 2016.
12. The Commission shall consider development of a special program to facilitate the implementation of this Resolution by developing CPCs. Furthermore, developed and developing CPCs are encouraged to work together to identify opportunities for capacity building to assist the long-term implementation of this Resolution.
13. This Resolution supersedes Resolution 13/03 *On the recording of catch and effort by fishing vessels in the IOTC*

area of competence.

ANNEX I

Record once per trip (unless gear configuration changes)

1.1 REPORT INFORMATION

1. Date of the submission of logbook
2. Name of reporting person

1.2 VESSEL INFORMATION

1. Vessel name and/or registration number
2. IMO number, where available
3. IOTC number
4. Call sign: if call sign is not available, other unique identifying code such as fishing license number should be used
5. Vessel size: gross tonnage and overall length (meters)

1.3 CRUISE INFORMATION

For multiday fishing operations record the:

1. Departure date (at your location) and port
2. Arrival date (at your location) and port

1.4 OTHER REQUIRED INFORMATION

Longline (Gear Configuration):

1. Average branch line length (meters): straight length in meters between snap and hook (**Figure 1**)
2. Average float line length (meters): straight length in meters from the float to the snap
3. Average length between branch (meters): straight length of main line in meters between successive branch lines
4. Main line material classified into four categories:
 - a) Thick rope (Cremona rope)
 - b) Thin rope (Polyethylene or other materials)
 - c) Nylon braided
 - d) Nylon monofilament
5. Material of the terminal tackle of the branch line (leader/trace) classified into two categories:
 - a) Nylon monofilament
 - b) Other (such as wire)

Purse Seine:

(Gear configuration):

1. Length of the purse seine net
2. Height of the purse seine net
3. Total number of FADs deployed per trip: refer to the Resolution 15/08 Procedures on a fish aggregating devices (FADs) management plan, including a limitation on the number of FADs, more detailed specification of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species (or any subsequent superseding Resolution)



(Search information):

1. Days searched
2. Spotter plane used (Yes/No)
3. Supply vessel used (Yes/No), if yes what is the name and registration number of the supply vessel

Gillnet (Gear Configuration):

1. Overall length of net (meters): record the total overall length of the net onboard
2. Mesh size of net (millimeters): record the mesh size (measured between opposite knots when fully stretched) used during the trip
3. Depth of assembled net (meters): height of assembled net in meters
4. Netting material: e.g. nylon braid, nylon monofilament, etc.

Pole and line (Gear Configuration):

1. Number of fishermen

ANNEX II
Record once per set/shot/operation

Note: for all gears in this annex use the follow format for date and time

For date: when recording date of the set/shot/operation: record the YYYY/MM/DD

For time: record 24hr time as either the local time, GMT or national time and clearly specify which time has been used.

2.1 OPERATION

For longline:

1. Date of set
2. Position in latitude and longitude: either position at noon or position of start of gear or area code of operation (e.g. Seychelles EEZ, High seas, etc.) may be optionally used
3. Time of starting setting and, when possible, retrieving the gear
4. Number of hooks between floats: if there are different hooks counts between floats in a single set then record the most representative (average) number
5. Total number of hooks used in the set
6. Number of light-sticks used in the set
7. Type of bait used in the set: e.g. fish, squid, etc.
8. Optionally, sea surface temperature at noon with one decimal point (XX.X°C)

For purse seine:

1. Date of set
2. Type of event: fishing set or deployment of a new FAD
3. Position in latitude and longitude and time of event, or if no event during the day, at noon
4. If fishing set: specify if the set was successful, nil, well; type of school (free swimming school or FAD associated. If FAD associated, specify the type (e.g. log or other natural objects, drifting FAD, anchored FAD, etc.). Refer to the [Resolution 15/08 Procedures on a fish aggregating devices \(FADs\) management plan, including a limitation on the number of FADs, more detailed specification of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species](#) (or any subsequent superseding Resolution)
5. Optionally, sea surface temperature at noon with one decimal point (XX.X°C)

For gillnet:

1. Date of set: record the date for each set or day at sea (for days without sets)
2. Total length of net (meters): floatline length used for each set in meters
3. Start fishing time: record the time when starting each set and, when possible, gear retrieving

4. Start and end position in latitude and longitude: record start and end latitude and longitude that represent the area that your gear is set between or, if no set, record the latitude and longitude at noon for days without sets
5. Depth at which net is set (meters): approximate depth at which the gillnet is set

For Pole and Line:

Fishing effort information in logbooks shall be recorded by day. Catch information in logbooks shall be recorded by trip or, when possible, by fishing day.

1. Date of operation: record the day or date
2. Position in latitude and longitude at noon
3. Number of fishing poles used during that day
4. Start fishing time (record the time immediately after bait fishing is complete and the vessel heads to the ocean for fishing. For multiple days, the time at which search starts should be recorded) and end fishing time (record the time immediately after fishing is complete from the last school; on multiple days this is the time fishing stopped from the last school). For multiple days, number of fishing days should be recorded.
5. Type of school: FAD associated and/or free school

2.2 CATCH

1. Catch weight (kg) or number by species per set/shot/fishing event for each of the species and form of processing in section 2.3:
 - a) For longline by number and weight
 - b) For purse seine by weight
 - c) For gillnet by weight
 - d) For pole and line by weight or number

2.3 SPECIES

For Longline:

Primary Species	FAO code	Other species	FAO code
Southern bluefin tuna (<i>Thunnus maccoyii</i>)	SBF	Shortbill spearfish (<i>Tetrapturus angustirostris</i>)	SSP
Albacore (<i>Thunnus alalunga</i>)	ALB	Blue shark (<i>Prionace glauca</i>)	BSH
Bigeye tuna (<i>Thunnus obesus</i>)	BET	Mako sharks (<i>Isurus</i> spp.)	MAK
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT	Porbeagle shark (<i>Lamna nasus</i>)	POR
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ	Hammerhead sharks (<i>Sphyrna</i> spp.)	SPN
Swordfish (<i>Xiphius gladius</i>)	SWO	Silky shark (<i>Carcharhinus falciformis</i>)	FAL
Striped marlin (<i>Tetrapturus audax</i>)	MLS	Other bony fishes	MZZ
Blue marlin (<i>Makaira nigricans</i>)	BUM	Other sharks	SKH

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Black marlin (<i>Makaira indica</i>)	BLM	Seabirds (in number) ¹	
Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)	SFA	Marine Mammals (in number)	MAM
		Marine turtles (in number)	TTX
		Thresher sharks (<i>Alopias</i> spp.)	THR
		Oceanic whitetip shark (<i>Carcharhinus longimanus</i>)	OCS
		Optional species to be recorded	
		Tiger shark (<i>Galeocerdo cuvier</i>)	TIG
		Crocodile shark (<i>Pseudocarcharias kamoharai</i>)	PSK
		Great white shark (<i>Carcharodon carcharias</i>)	WSH
		Mantas and devil rays (<i>Mobulidae</i>)	MAN
		Pelagic stingray (<i>Pteroplatytrygon violacea</i>)	PLS
		Other rays	

For Purse Seine:

Primary Species	FAO code	Other species	FAO code
Albacore (<i>Thunnus alalunga</i>)	ALB	Marine turtles (in number)	TTX
Bigeye tuna (<i>Thunnus obesus</i>)	BET	Marine mammals (in number)	MAM
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT	Whale sharks (<i>Rhincodon typus</i>) (in number)	RHN
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ	Thresher sharks (<i>Alopias</i> spp.)	THR
Other IOTC species		Oceanic whitetip shark (<i>Carcharhinus longimanus</i>)	OCS
		Silky sharks (<i>Carcharhinus falciformis</i>)	FAL
		Optional species to be recorded	FAO code
		Mantas and devil rays (<i>Mobulidae</i>)	MAN
		Other sharks	SKH
		Other rays	
		Other bony fish	MZZ

¹ When a CPC is fully implementing the observer program the provision of seabird data is optional

For Gillnet:

Primary Species	FAO code	Other species	FAO code
Albacore (<i>Thunnus alalunga</i>)	ALB	Shortbill spearfish (<i>Tetrapturus angustirostris</i>)	SSP
Bigeye tuna (<i>Thunnus obesus</i>)	BET	Blue shark (<i>Prionace glauca</i>)	BSH
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT	Mako sharks (<i>Isurus</i> spp.)	MAK
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ	Porbeagle shark (<i>Lamna nasus</i>)	POR
Longtail tuna (<i>Thunnus tonggol</i>)	LOT	Hammerhead sharks (<i>Sphyrna</i> spp.)	SPN
Frigate tuna (<i>Auxis thazard</i>)	FRI	Other sharks	SKH
Bullet tuna (<i>Auxis rochei</i>)	BLT	Other bony fish	MZZ
Kawakawa (<i>Euthynnus affinis</i>)	KAW	Marine turtles (in number)	TTX
Narrow barred Spanish mackerel (<i>Scomberomorus commerson</i>)	COM	Marine mammals (in number)	MAM
Indo-Pacific king mackerel (<i>Scomberomorus guttatus</i>)	GUT	Whale sharks (<i>Rhincodon typus</i>) (in number)	RHN
Swordfish (<i>Xiphias gladius</i>)	SWO	Seabirds (in number) ²	
Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)	SFA	Thresher sharks (<i>Alopias</i> spp.)	THR
Marlins (<i>Tetrapturus</i> spp, <i>Makaira</i> spp.)	BIL	Oceanic whitetip shark (<i>Carcharhinus longimanus</i>)	OCS
Southern bluefin tuna (<i>Thunnus maccoyii</i>)	SBF	Optional species to be recorded	
		Tiger shark (<i>Galeocerdo cuvier</i>)	TIG
		Crocodile shark (<i>Pseudocarcharias kamoharai</i>)	PSK
		Mantas and devil rays (Mobulidae)	MAN
		Pelagic stingray (<i>Pteroplatytrygon violacea</i>)	PLS
		Other rays	

For Pole and Line:

Primary Species	FAO code	Other species	FAO code
Albacore (<i>Thunnus alalunga</i>)	ALB	Other bony fish	MZZ
Bigeye tuna (<i>Thunnus obesus</i>)	BET	Sharks	SKH
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT	Rays	
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ	Marine turtles (in number)	TTX
Frigate and bullet tuna (<i>Auxis</i> spp.)	FRZ		

² When a CPC is fully implementing the observer program the provision of seabird data is optional

Kawakawa (<i>Euthynnus affinis</i>)	KAW		
Longtail tuna (<i>Thunnus tonggol</i>)	LOT		
Narrow barred Spanish mackerel (<i>Scomberomorus commerson</i>)	COM		
Other IOTC species			

2.4 REMARKS

1. Discard of tuna, tuna-like fish and sharks to be recorded by species in weight (kg) or number for all gears should be recorded in the remarks³
2. Any interactions with whale sharks (*Rhincodon typus*), marine mammals, and seabirds should be recorded in the remarks
3. Other information is also written in the remarks

Note: The species included in the logbooks are regarded as minimum requirement. Optionally other frequently caught shark and/or fish species should be added as required across different areas and fisheries.

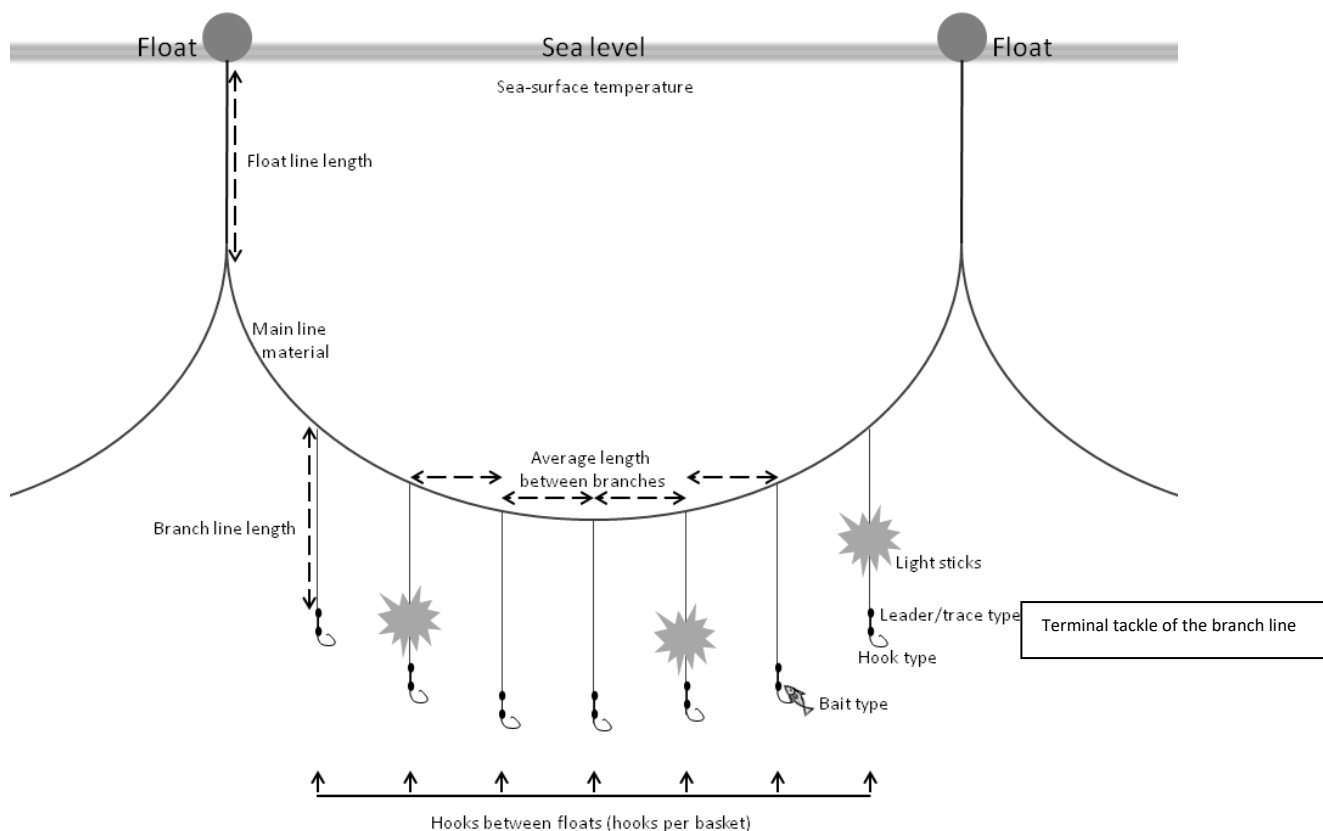


Figure 1. Longline (Gear Configuration): Average branch line length (meters): straight length in meters between snap and hook.

³ Recall the Recommendation 10/13 *On the implementation of a ban on discards of skipjack tuna, yellowfin tuna, bigeye tuna and non-target species caught by purse seiners* [superseded by [Resolution 13/11](#); then by [Resolution 15/06](#)]

ANNEX III**Specifications for handline and trolling**

Note: for all gears in this annex use the follow format for date and time

For date: when recording date of the set/shot/operation: record the YYYY/MM/DD

For time: record 24hr time as either the local time, GMT or national time and clearly specify which time has been used.

I - HANDLINE

All logbook information shall be recorded by day; where more than one fishing event is recorded for the same day, it is advisable to record each fishing event separately

Record once in one cruise, or month where daily operation

1.1 REPORT INFORMATION

1. Fishing day (or Date of submission of the logbook, where multiple fishing days)
2. Name of reporting person

1.2 VESSEL INFORMATION

1. Vessel name and registration number and IMO number, where available
2. IOTC number, where available
3. Fishing License number
4. Vessel size: Gross tonnage and/or length overall (in metres)

1.3 CRUISE INFORMATION

1. Departure date and port
2. Arrival date and port

2.1 OPERATION

1. Date of fishing
Record the date of fishing. Each fishing day should be recorded separately
2. Number of fishermen
Record the number of fishermen on the boat by fishing day
3. Number of Fishing Gear
Record the number of fishing lines used during the fishing day. If the exact number is not available a range may be used i) 5 or less lines, ii) 6–10 lines; iii) 11 or more lines
4. Number and type of school (Anchored or drifting FAD, marine mammal, free, other) fished

Record the number and type of school fished (i.e. anchored FAD, drifting FAD, marine mammal associated or free) fished during the day

5. Position of the catch

Position in latitude and longitude: either position at noon or position of start of gear or area code of operation (e.g. Seychelles EEZ, High seas, etc.) may be optionally used. Record the latitude and longitude at noon for non-fishing days, where not in port

Where information is recorded by day, record the 1° x 1° area(s) where fishing took place

6. Bait

Record the type of bait used (e.g. fish, squid), where applicable

2.2 CATCH

Catch in number and/or weight (kg) by species

1. Catch number and/or Weight

For each species shown in section 2.3 caught and retained, record the number and estimated live weight (kg), per fishing day

2. Discard number and/or Weight

For each species shown in section 2.3 caught and not retained record the number and estimated live weight (kg) discarded, per fishing day

2.3 SPECIES

Primary Species	FAO code
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT
Bigeye tuna (<i>Thunnus obesus</i>)	BET
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ
Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)	SFA
Black marlin (<i>Makaira indica</i>)	BLM
Other billfish	
Longtail tuna (<i>Thunnus tonggol</i>)	LOT
Kawakawa (<i>Euthynnus affinis</i>)	KAW
Frigate tuna/Bullet tuna (<i>Auxis</i> spp.)	FRZ
Narrow barred Spanish mackerel (<i>Scomberomorus commerson</i>)	COM
Indo-Pacific king mackerel (<i>Scomberomorus guttatus</i>)	GUT
Sharks	
Other fishes	
Rays	
Marine turtles (by number)	

2.4 REMARKS

1. Other relevant information is also written in the remarks

Note: These species included in the logbook are regarded as minimum requirement. Optionally other species should be added as species may differ depending on the area fished and type of fishery

II - TROLLING VESSELS

All logbook information shall be recorded by day; where more than one fishing event is recorded for the same day, it is advisable to record each fishing event separately

Record once in one cruise

1.1 REPORT INFORMATION

1. Fishing day (or Date of submission of the logbook, where multiple fishing days)
2. Name of reporting person

1.2 VESSEL INFORMATION

1. Vessel name and registration number and IMO number, where available
2. IOTC number, where available
3. Fishing License number
4. Vessel size: Gross tonnage and/or length overall (in metres)

1.3 CRUISE INFORMATION

1. Departure date and port
2. Arrival date and port

2.1 OPERATION

1. Date of fishing

Record the date of fishing. Each fishing day should be recorded separately

2. Number of fishermen

Record the number of fishermen on the vessel by fishing day

3. Number of Fishing Gear

Record the number of lines used during the fishing day. If the exact number is not available a range may be used i) 3 or less lines, ii) more than 3 lines

4. Number and type of school (Anchored or drifting FAD, marine mammal, free, other) fished

Record the number and type of school fished (i.e. anchored FAD, drifting FAD, marine mammal associated or free) fished during the day

5. Position of the catch

Position in latitude and longitude: either position at noon or position of start of gear or area code of operation (e.g. Seychelles EEZ, High seas, etc.) may be optionally used. Record the latitude and longitude at noon for non-fishing days, where not in port

Where information is recorded by day, record the 1° x 1° area(s) where fishing took place

6. Bait

Record the type of bait or indicate if lures are used

2.2 CATCH

Catch in number and/or weight (kg) by species

1. Number and/or Weight of fish retained

For each species shown in section 2–3 caught and retained, record the number or estimated live weight (kg), per fishing day

2. Discard number and/or Weight

For each species shown in section 2–3 caught and not retained record the number and estimated live weight (kg) discarded, per fishing day

2.3 SPECIES

Primary Species	FAO code
Yellowfin tuna (<i>Thunnus albacares</i>)	YFT
Bigeye tuna (<i>Thunnus obesus</i>)	BET
Skipjack tuna (<i>Katsuwonus pelamis</i>)	SKJ
Albacore (<i>Thunnus alalunga</i>)	ALB
Swordfish (<i>Xiphias gladius</i>)	SWO
Blue marlin (<i>Makaira nigricans</i>)	BUM
Black marlin (<i>Makaira indica</i>)	BLM
Striped marlin (<i>Tetrapturus audax</i>)	MLS
Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)	SFA
Other billfish	
Longtail tuna (<i>Thunnus tonggol</i>)	LOT
Kawakawa (<i>Euthynnus affinis</i>)	KAW
Frigate tuna/Bullet tuna (<i>Auxis</i> spp.)	FRZ
Narrow barred Spanish mackerel (<i>Scomberomorus commerson</i>)	COM
Indo-Pacific king mackerel (<i>Scomberomorus guttatus</i>)	GUT
Sharks	



Other fishes	
Rays	
Marine turtles	

2.4 REMARKS

1. Other relevant information is also written in the remarks

Note: These species included in the logbook are regarded as minimum requirement. Optionally other species should be added as species may differ depending on the area

APPENDIX B

RESOLUTION 15/02

MANDATORY STATISTICAL REPORTING REQUIREMENTS FOR IOTC CONTRACTING PARTIES AND COOPERATING NON-CONTRACTING PARTIES (CPCs)

Keywords: Data reporting; total catch; catch and effort; size data; fish aggregating devices (FAD); surface fisheries; longline fisheries; coastal fisheries

The Indian Ocean Tuna Commission (IOTC)

GIVEN that the Agreement for the implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) encourages coastal States and fishing States on the high seas to collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort;

NOTING that the United Nations Food and Agricultural Organization (FAO) Code of Conduct for Responsible Fishing provides that States should compile fishery-related and other supporting scientific data relating to fish stocks covered by sub-regional or regional fisheries management organizations and provide them in a timely manner to the organization;

RECALLING the commitment made by Contracting Parties under Article V of the IOTC Agreement to keep under review the conditions and trends of the stocks and to gather, analyze and disseminate scientific information, catch and effort statistics and other data relevant to the conservation and management of the stocks and to fisheries based on the stocks covered by the Agreement;

COGNISANT that the above commitment can only be achieved when Contracting Parties meet the requirements of Article XI of the IOTC Agreement i.e. to provide statistical and other data and information to minimum specifications and in a timely manner;

ACKNOWLEDGING that the IOTC Scientific Committee has repeatedly stressed the importance of the timeliness of data submissions;

GIVEN that the activities of support vessels and the use of Fish Aggregating Devices (FAD) are an integral part of the fishing effort exerted by the purse seine fleet;

CONSIDERING the provisions set forth in Resolution 15/02 on *mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)*, adopted by the Commission in 2015;

NOTING the Scientific Committee's concern that the lack of data from CPC fisheries under the mandate of the IOTC on the mortality of marine turtles and marine mammals undermines the ability to estimate levels of marine turtle and marine mammals bycatch and consequently the IOTC's capacity to respond and prevent adverse effects of fishing on these marine species;

FURTHER NOTING the Scientific Committee's concern about the impossibility to undertake assessments on the status of seabirds in the Indian Ocean, while acknowledging that some species are currently critically endangered, and that the lack of reporting of seabird interactions by CPCs seriously undermines the ability of IOTC to respond and prevent adverse effects of fishing on seabirds;

CONSIDERING the recommendations of the 17th Session of the IOTC Scientific Committee;

FURTHER CONSIDERING the call upon States, either individually, collectively or through regional fisheries management organizations and arrangements included in the United Nations General Assembly Resolution 67/79 on sustainable fisheries

to collect the necessary data in order to evaluate and closely monitor the use of fish aggregating devices and their effects on tuna resources and tuna behavior and associated and dependent species, to improve management procedures to monitor the number, type and use of such devices and to mitigate possible negative effects on the ecosystem, including on juveniles and the incidental bycatch of non-target species, particularly sharks and turtles;

ADOPTS, in accordance with the provisions of Article IX, paragraph 1 of the IOTC Agreement, the following:

1. Contracting Parties and Cooperating Non-Contracting Parties (CPCs) shall provide the following information to the IOTC Secretariat according to the timelines specified in paragraph 7:

2. Total catch data:

Estimates of the total catch by species and gear, if possible quarterly, that shall be submitted annually as referred in paragraph 7 (separated, whenever possible, by retained catches in live weight and by discards in live weight or numbers) for all species under the IOTC mandate as well as the most commonly caught elasmobranch species according to records of catches and incidents as established in Resolution 15/01 on the recording of catch and effort data by fishing vessels in the IOTC area of competence (or any subsequent superseding Resolution).

3. Concerning cetaceans, seabirds and marine turtles data should be provided as stated in Resolutions 13/04 on Conservation of Cetaceans, Resolution 12/06 on reduction the incidental bycatch of seabirds in longline fisheries and Resolution 12/04 on the conservation of marine turtles (or any subsequent superseding resolutions).

4. Catch and effort data⁴:

a) **For surface fisheries:** catch weight by species and fishing effort shall be provided by 1° grid area and month strata. Purse seine and pole and line fisheries data shall be stratified by fishing mode (e.g. free swimming schools or schools in association with floating objects). The data shall be extrapolated to the total national monthly catches for each gear. Documents describing the extrapolation procedures (including raising factors corresponding to the logbook coverage) shall also be submitted routinely. Effort units reported should be consistent with those effort requirements of Resolution 15/01 (or any subsequent superseding revision).

b) **Longline fisheries:** catch by species, in numbers or weight, and effort as the number of hooks deployed shall be provided by 5° grid area and month strata. Documents describing the extrapolation procedures (including raising factors corresponding to the logbook coverage) shall also be submitted routinely. For the work of relevant working parties under the IOTC Scientific Committee, longline data should be of a resolution of 1° grid area and month or finer. These data would be for the exclusive use of IOTC Scientific Committee and its Working Parties, subject to the approval of the data owners and IOTC Resolution 12/02 Data confidentiality policy and procedures, and should be provided for scientific use only in a timely fashion. Effort units reported should be consistent with those effort requirements of Resolution 15/01 or any subsequent revision of such resolution.

c) **For coastal fisheries:** catches by species that shall be submitted annually as referred in paragraph 7, fishing gear and fishing effort shall be submitted frequently and may be provided using an alternative geographical area if it better represents the fishery concerned. Effort units reported should be consistent with those effort requirements of Resolution 15/01 (or any subsequent superseding revision).

Provisions on catch and effort data, applicable to tuna and tuna-like species, shall also be applicable to the most commonly caught elasmobranch species according to records of catches and incidents as established in

⁴ Longline fisheries: Fisheries undertaken by vessels in the IOTC Record of Authorized Vessels that use longline gear.

Surface fisheries: All fisheries undertaken by vessels in the IOTC Record of Authorized Vessels other than longline fisheries; in particular purse seine, pole-and-line, gillnet fisheries, handline and trolling vessels.

Coastal fisheries: Fisheries other than longline or surface, as defined above, also called artisanal fisheries.

Resolution 15/01 on the recording of catch and effort by fishing vessels in the IOTC area of competence (or any subsequent superseding Resolution).

5. Size data:

Size data shall be provided for all gears and for all species according to paragraph 4 and following the guidelines set out by the procedures described in the *Guidelines for the reporting of fisheries statistics to the IOTC*. Size sampling shall be run under strict and well described random sampling schemes which are necessary to provide unbiased figures of the sizes taken. Sampling coverage shall be set to at least one fish measured by ton caught, by species and type of fishery, with samples being representative of all the periods and areas fished. Alternatively, size data for longline fleets may be provided as part of the Regional Observer Scheme where such fleets have at least 5% observer coverage of all fishing operations. Length data by species, including the total number of fish measured, shall be submitted by a 5° grid area by month, by gear and fishing mode (e.g. free swimming schools or schools in association with floating objects for the purse seiners). Documents covering sampling and raising procedures shall also be provided, by species and type of fishery.

6. Given that the activities of purse seine supply vessels and the use of **Fish Aggregating Devices** (FAD) are an integral part of the fishing effort exerted by the purse seine fleet, the following data shall be provided by CPCs:

- a) The number and characteristics of purse seine supply vessels: (i) operating under their flag, (ii) assisting purse seine vessels operating under their flag, or (iii) licensed to operate in their exclusive economic zones, and that have been present in the IOTC area of competence;
- b) Number of days at sea by purse seine and purse seine supply vessels by 1° grid area and month to be reported by the flag state of the supply vessel;
- c) The total number set by the purse seine and purse seine supply vessels per quarter, as well as:
 - i. The positions, dates at the time of setting, FAD identifier and FAD type (i.e. drifting log or debris, drifting raft or fad with a net, drifting raft or FAD without a net, anchored FADs and other FADs e.g. Payao, dead animal etc.);
 - ii. The FAD design characteristics of each FAD (consistent with Annex 1 to Resolution 15/08 *Procedures on a fishing aggregating devices (FADs) management Plan, including a limitation on the number of FADS, more detailed specifications of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target species*).

These data would be for the exclusive use of IOTC Scientific Committee and its Working Parties, subject to the approval of the data owners and in accordance with Resolution 12/02 *Data confidentiality policy and procedures*, and should be provided in a timely fashion.

7. Timeliness of data submission to the IOTC Secretariat:

- a) Longline fleets operating in the high seas shall provide provisional data for the previous year no later than 30 June. Final data shall be submitted no later than 30 December;
- b) All other fleets (including supply vessels) shall submit their final data for the previous year no later than 30 June;
- c) In case where the final statistics cannot be submitted by that date, at least preliminary statistics should be provided. Beyond a delay of two years, all revisions of historical data should be formally reported and duly justified. These reports should be made on forms provided by the IOTC Secretariat and reviewed by the IOTC Scientific Committee. The IOTC Scientific Committee will advise the IOTC Secretariat if revisions are then accepted for scientific use.



8. This Resolution supersedes Resolution 10/02 on *mandatory statistical requirements for IOTC Members and Cooperating Non-Contracting Parties (CPCs)*.

APPENDIX C

RESOLUTION 16/04

ON THE IMPLEMENTATION OF A PILOT PROJECT IN VIEW OF PROMOTING THE REGIONAL OBSERVER SCHEME OF IOTC

The Indian Ocean Tuna Commission (IOTC),

TAKING INTO ACCOUNT the need to increase the scientific information, in particular to provide the IOTC Scientific Committee working material in order to improve the management of the tuna and tuna-like species fished in the Indian Ocean;

REITERATING the responsibilities of Flag States to ensure that their vessels conduct their fishing activities in a responsible manner, fully respecting IOTC Conservation and Management Measures;

CONSIDERING the need for action to ensure the effectiveness of the IOTC objectives;

CONSIDERING the obligation of all IOTC Contracting Parties and Cooperating Non-Contracting Parties (hereinafter CPCs) to fully comply with the IOTC Conservation and Management Measures;

AWARE of the necessity for sustained efforts by CPCs to ensure the enforcement of IOTC's Conservation and Management Measures, and the need to encourage Non-CPCs to abide by these measures;

UNDERLINING that the adoption of this measure is intended to promote the implementation of the Resolution 11/04 *on a Regional Observer Scheme*;

CONSIDERING the deliberations of the 18th Session of the IOTC Scientific Committee held in Bali, Indonesia from 23-27 November 2015, notably that CPCs should comply with IOTC data requirements as requested per Resolution 15/01 and 15/02, respectively *on the recording of catch and effort data by fishing vessels in the IOTC area of competence and on mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting parties (CPCs)*, given the gaps in available information in the IOTC database and the importance of basic fishery data in order to assess the status of stocks and for the provision of sound management advice.

ADOPTS, in accordance with the provisions of Article IX, paragraph 1 of the IOTC Agreement, the following:

1. Create a pilot project aiming to enhance the implementation of the Resolution 11/04 *on a Regional Observer Scheme* and to raise the level of compliance to the implementation of Resolutions 15/01 and 15/02, respectively *on the recording of catch and effort data by fishing vessels in the IOTC area of competence and on mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating non-Contracting parties (CPCs)*.
2. This pilot project will be funded through IOTC budget and/or from voluntary contributions. The pilot project will be prepared taking into account the following elements:
 - a) Identification and selection of voluntary participatory Contracting Parties or Cooperating Non-Contracting Parties (CPCs). Participatory CPCs should indicate their vessels that will participate in the project.
 - b) Terms of Reference (ToR) and selection of scientific observers, according to provisions of the Resolutions 11/04, 15/01 and 15/02.

- c) Definition of an Action Plan for the observers work, including indicatively, a working calendar and an area of activity.
 - d) Mid-term review and a final term review, the latter should include recommendation on how to expand the experiences and results of the pilot project to all IOTC area of competence.
 - e) Cooperation coordination mechanism between CPCs participating in the project.
 - f) Complementarity with the Regional Observer Scheme actions already in place.
3. The IOTC Scientific Committee will draft guidelines regarding the ToR and work of observers, and an indicative budget for approval by the Commission in 2017. This project will focus on developing states, with priority given to promote the implementation of the ROS to small island developing states (SIDS) and least developed countries (LDC).
 4. Contracting Parties will provide their comments and suggestions within one month after the IOTC Executive Secretary transmission of the draft project, following the Scientific Committee.
 5. The revised draft proposal, including a detailed budget, will be submitted to the Compliance Committee and to the Standing Committee on Administration and Finance for review, and submitted for consideration and approval at the annual meeting of the Commission in 2017.
 6. The pilot project will explore the possibilities offered by electronic observation and observation in port.
 7. The Scientific Committee will evaluate whether electronic observation or observation in port can be used to collect data matching IOTC standards. Scientific Committee will also propose minimum standards for the implementation of Electronic observation systems and how they can be used to increase levels of observer coverage for Indian Ocean fisheries.
 8. The pilot project will not preclude any Regional Observer Scheme's actions already implemented by Contracting Parties or Cooperating non-Contracting Parties and respective fleets.

Annex I

Minimal requirements for observers

Scientific observers

1. Without prejudice to whatever specific training and qualifications are recommended by the Scientific Committee, the designated observers shall have the following qualifications to accomplish their tasks:
 - a) a satisfactory knowledge of the IOTC Conservation and Management Measures;
 - b) the ability to observe and record information accurately;
 - c) a satisfactory knowledge of the language of the flag of the vessel observed;
 - d) sufficient experience to identify species and fishing gear;
 - e) proven training in security and survival at sea.

2. Observers shall:
 - a) record and report upon the fishing activities carried out;
 - b) observe and estimate catches and check consistency with entries made in the logbook;
 - c) note the position of the vessel when engaged in catching activity;
 - d) carry out scientific work such as collecting of IOTC mandatory statistical information and fulfilment of logbooks;
 - e) report the results of these duties on the fishing vessel in the observers report to the flag state fishing authority,
 - f) submit the observer report to Flag State authorities within 30 days from the end of the period of observation;
 - g) treat as confidential all information with respect to the fishing and transshipment operations of the fishing vessels and accept this requirement in writing as a condition of appointment as an observer;
 - h) comply with requirements established in the laws and regulations of the flag State which exercises jurisdiction over the vessel to which the observer is assigned;

- i) respect the hierarchy and general rules of behaviour which apply to all vessel personnel, provided such rules do not interfere with the duties of the observer under this program, and with the obligations of vessel personnel.

Obligations of the Master

3. The Master shall allow observers to:
 - a) visit the fishing vessel, if weather conditions permit, and to have access to vessel staff and to the gear and equipment but not interfering with the equipment on-board;
 - b) have access to the equipment listed below, if present on the vessels to which they are assigned, in order to facilitate the carrying out of their duties. This shall be done on a request basis. The equipment concerns
 - i) satellite navigation equipment; (consultation only)
 - ii) radar display viewing screens when in use; (consultation only)
 - iii) electronic means of communication;
 - c) Observers shall be provided with accommodation, including lodging, food and adequate sanitary facilities, equal to those of officers;
 - d) Observers shall be provided with adequate space on the bridge or pilot house for clerical work, as well as space on deck adequate for carrying out observer duties;

Obligations of the Flag State

4. The Flag States shall ensure that masters, crew and vessel owners do not obstruct, intimidate, interfere with, influence, bribe or attempt to bribe an observer in the performance of his/her duties.
5. No later than two months upon completion of a fishing trip, observer reports will be sent to the IOTC secretariat, who shall manage and keep record of the mentioned observer's reports in a manner consistent with IOTC confidentiality requirements, and will submit copies of the observer reports to the Scientific Committee.
6. Data collected in any Coastal State EEZ will also be provided to the Coastal State authorities within the same delays and conditions of the previous paragraph.

Mutual recognition of observers

7. The observers selected to participate in this pilot project will be recognised by all CPCs participating in the project.

APPENDIX D**RESOLUTION 16/07****ON THE USE OF ARTIFICIAL LIGHTS TO ATTRACT FISH****The Indian Ocean Tuna Commission (IOTC),**

AWARE that the Commission is committed to adopt Conservation and Management Measures to reduce juvenile bigeye tuna and yellowfin tuna mortalities from fishing effort on Aggregating Devices;

RECALLING that the objective of the IOTC Agreement is to ensure, through appropriate management, the conservation and optimum utilisation of stocks covered by the mentioned Agreement and encouraging sustainable development of fisheries based on such stocks and minimising the level of bycatch;

RECOGNISING that all gears deployed to target resources under the competence of IOTC should be managed to ensure the sustainability of fishing operations;

MINDFUL of the call upon States, either individually, collectively or through regional fisheries management organisations and arrangements in the United Nations General Assembly Resolution 67/79 on Sustainable fisheries to collect the necessary data in order to evaluate and closely monitor the use of large-scale fish aggregating devices and others, as appropriate, and their effects on tuna resources and tuna behaviour and associated and dependent species, to improve management procedures to monitor the number, type and use of such devices and to mitigate possible negative effects on the ecosystem, including on juveniles and the incidental bycatch of non-target species, particularly sharks and marine turtles;

RECALLING that The Rome Consensus on World Fisheries adopted by the FAO Ministerial Conference on Fisheries, Rome, 14–15 March 1995, provides that “States should...reduce bycatches, fish discards...”;

ADOPTS, in accordance with paragraph 1 of Article IX of the IOTC Agreement, that:

1. Fishing vessels and other vessels including support, supply and auxiliary vessels flying the flag of an IOTC Contracting Party or Cooperating Non-Contracting Party (collectively CPCs) are prohibited from using, installing or operating surface or submerged artificial lights for the purpose of aggregating tuna and tuna-like species beyond territorial waters. The use of lights on DFADs is also already prohibited.
2. CPCs shall prohibit their flagged vessels from intentionally conducting fishing activities around or near any vessel or DFAD equipped with artificial lights for the purpose of attracting tuna and tuna-like species under the mandate of the IOTC and in the IOTC area of competence.
3. DFADs equipped with artificial lights, which are encountered by fishing vessels operating in the IOTC area of competence, should as far as possible be removed and brought back to port.
4. Notwithstanding paragraph 1, CPCs whose fishing vessels currently use such artificial lights for the purpose of aggregating tuna and tuna-like species may continue to allow such vessels to use such lights until 31st December 2017. The CPC that wishes to apply this provision shall so report to the Secretariat within 120 days after the adoption of this resolution.
5. Navigation lights and lights necessary to ensure safe working conditions are not affected by this resolution.
6. This Resolution supersedes Resolution 15/07 *On the use of artificial lights to attract fish to drifting fish aggregating devices*.

APPENDIX E

RESOLUTION 16/08

ON THE PROHIBITION OF THE USE OF AIRCRAFTS AND UNMANNED AERIAL VEHICLES AS FISHING AIDS

The Indian Ocean Tuna Commission (IOTC),

RECALLING that Article 5, paragraph c, of the Agreement for the Implementation of the Provisions of the United Nations Convention of the Law of the Sea of December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA), establishes the application of the precautionary approach as a general principle for sound fisheries management;

NOTING that recommendations 37 and 38 of the Performance Review Panel, adopted by the Commission as Resolution 09/01, indicate that pending the amendment or replacement of the IOTC Agreement to incorporate modern fisheries management principles, the Commission should implement the precautionary approach as set forth in the UNFSA;

RECOGNISING the need to ensure the sustainability of fisheries for tunas and tuna-like species for food security, livelihoods, economic development, multispecies interactions and environmental impacts in its decisions;

CONSIDERING the resolution 12/01 on the implementation of the precautionary approach, in accordance with relevant internationally agreed standards, in particular with the guidelines set forth in the UNFSA, and to ensure the sustainable utilization of fisheries resources as set forth in article V of the IOTC agreement;

RECALLING that the objective of the IOTC Agreement is to ensure, through appropriate management, the conservation and optimum utilisation of stocks covered by the mentioned Agreement and encouraging sustainable development of fisheries based on such stocks;

RECOGNISING that all gears deployed to target resources under the competence of IOTC should be managed to ensure the sustainability of fishing operations;

GIVEN that “Aircraft” means a contrivance used for navigation of, or flight in the air and specifically includes, but is not limited to, planes, helicopters, and any other device that allows a person to fly or hover above the ground. “Unmanned aerial vehicle” means any device capable of flying in the air which is remotely, automatically or otherwise piloted without an occupant, including but not limited to drones;

RECOGNISING that the use of aircraft and unmanned aerial vehicle as fishing/searching aids significantly contribute to the fishing effort of tuna fishing vessels by increasing their fish detection capacity;

ADOPTS, in accordance with paragraph 1 of Article IX of the IOTC Agreement, that:

1. Contracting Parties and Cooperating Non-Contracting Party (collectively CPCs) shall prohibit their flagged fishing vessels, support and supply vessels from using aircrafts and unmanned aerial vehicles as fishing aids.
2. Notwithstanding paragraph 1, CPCs whose fishing vessels currently use aircrafts and unmanned aerial vehicles as fishing aids may continue to allow such vessels to use them until 31st December 2017. The CPC that wishes to apply this provision shall so report to the Secretariat within 120 days after the adoption of this resolution.
3. Any occurrence of a fishing operation undertaken with the aid of aircraft or any unmanned aerial vehicle in the IOTC area of competence shall be reported to the flag State and the IOTC Executive Secretary, for communication to the Compliance Committee.



4. Aircraft and unmanned aerial vehicles used for scientific and MCS purposes are not subject to the prohibition set out in paragraph 1 of this measure”.