REVISION OF THE PROGRAM OF WORK (2015–19) FOR THE IOTC SCIENCE PROCESS

PREPARED BY: IOTC SECRETARIAT, 23 NOVEMBER 2014

PURPOSE

To provide the Scientific Committee (SC) with a proposed Program of Work for each of its Working Parties (WP), including preliminary prioritisation of the elements requested by each WP. The aim of is to develop an overall Program of Work Plan for 2015–19 which will deliver the information the Commission has requested to meet the objectives of the IOTC.

BACKGROUND

At the 16th Session of the SC:

(Para. 192) The SC **NOTED** paper IOTC–2013–SC15–16 which outlined the proposed research priorities for each of the Working Party meetings held in 2013, with the aim of developing an IOTC Science Work Plan for 2014, and future years.

(Para. 193) The SC **NOTED** the proposed work plans and priorities of each of the Working Parties and **AGREED** to the revised work plans as outlined in Appendix XXXIV [of the SC16 Report]. The Chairs and Vice-Chairs of each working party shall ensure that the efforts of their working party is focused on the core areas contained within the appendix, taking into account any new research priorities identified by the Commission at its next Session.

(Para. 194) The SC **REQUESTED** that all Working Parties provide their work plans with items prioritised based on the requests of the Commission of the SC.

(Para. 195) The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2014–18, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key shark species of interest, as outlined in Appendix XXXV [of the SC16 Report].

(Para. 196) The SC **REQUESTED** that the IOTC Secretariat develop a template for each working party to use in developing their works plans in 2014, with the aim of standardising the way in which each working party presents a prioritised plan each year for the SC's consideration.

DISCUSSION

The SC is requested to consider the priorities set by the Commission, via Conservation and Management Measures, and consider and revise as necessary, its Program of Work to match those priorities.

The draft schedule of stock assessments for IOTC species and species of interest from 2015–2019, and for other working party priorities is provided in Appendix I.

The high priority projects agreed to by each WP meeting in 2014 are provided at Appendix II.

RECOMMENDATION

That the Scientific Committee:

1) **NOTE** paper IOTC–2014–SC17–10, which encouraged the SC to further develop and refine its Program of Work for 2015–19, which is based on those of its Working Parties, to ensure it is aligned with the requests and directives from the Commission.
2) **ADOPT** a revised Program of Work for 2015–19.

APPENDIX

Appendix I: Draft: Schedule of stock assessments for IOTC species and species of interest from 2015–2019, and for other WP priorities

Appendix II: High priority projects agreed to by each of the Scientific Committee Working Parties.

APPENDIX I
DRAFT: SCHEDULE OF STOCK ASSESSMENTS FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2015–2019, AND FOR OTHER WORKING PARTY PRIORITIES

Species	2015	2016	2017	2018	2019
Working Party on Billfish					
Black marlin		**Full assessment***		**Full assessment***	
Blue marlin		**Full assessment***			**Full assessment***
Striped marlin	**Full assessment***		**Full assessment***		**Full assessment***
Swordfish	Indicators	Indicators	**Full assessment***		
Indo-Pacific sailfish	**Full assessment***			**Full assessment***	
Working Party on Neritic Tunas					
Bullet tuna	Indicators	Indicators	Indicators	**Stock assessment**	Indicators
Frigate tuna	Indicators	Indicators	Indicators	**Stock assessment**	Indicators
Kawakawa	**Stock assessment**	Indicators	**Stock assessment**	Indicators	Indicators
Longtail tuna	**Stock assessment**	Indicators	**Stock assessment**	Indicators	Indicators
Indo-Pacific king mackerel	**Stock assessment**	Indicators	Indicators	**Stock assessment**	Indicators
Narrow-barred Spanish mackerel	**Stock assessment**	Indicators	Indicators	**Stock assessment**	Indicators
Working Party on Temperate Tunas					
Albacore	–	**Stock assessment**	–	**Stock assessment**	–
Working Party on Tropical Tunas					
Bigeye tuna	Indicators	**Full assessment**	Indicators	Indicators	**Full assessment**
Skipjack tuna	Indicators	Indicators	**Full assessment**	Indicators	Indicators
Yellowfin tuna	**Full assessment**	Indicators	Indicators	**Full assessment**	Indicators
Working Party on Ecosystems and Bycatch					
Blue shark	**Full assessment***		Indicators	Revisit ERA	**Full assessment***
Oceanic whitetip shark	–	Indicators; Review of measures in Res. 13/06	**Full assessment***	Revisit ERA	–
Scalloped hammerhead shark	–	Indicators	–	Revisit ERA	Indicators
Shortfin mako shark	–	Indicators	–	Revisit ERA	–
Silky shark	Indicators	–	–	Revisit ERA	Indicators
Bigeye thresher shark	–	–	Indicators	Revisit ERA	–
Pelagic thresher shark	–	Indicators	–	Revisit ERA	–
Marine turtles	Review of mitigation measures in 12/04	–	Revisit ERA	–	Review of mitigation measures in 12/04
Seabirds	Review of mitigation measures in 12/06	–	Review of mitigation measures in 12/06	–	Review of mitigation measures in 12/06
Marine Mammals	–	–	–	–	–
Working Party on Methods					
Management Strategy Evaluation	Extension of the MSE process to tropical tunas	TBD	TBD	TBD	TBD

*Including data poor stock assessment methods; Note: the assessment schedule may be changed dependant on the annual review of fishery indicators, or SC and Commission requests.

APPENDIX II
HIGH PRIOITY PROJECTS/TOPICS AS PROPOSED BY EACH OF THE IOTC WORKING PARTIES

Working Party on Billfish (WPB)

(Extracts from IOTC–2014–WPB12–R: Appendix XIII, Table 2)

WPB: High priority topics, by project for billfish in the Indian Ocean

Topic	Sub-topic and project	Priority
Stock structure (connectivity)	Research to describe the population structure and connectivity of billfish (swordfish and striped marlin) within the Indian Ocean (and adjacent Pacific and Atlantic waters as appropriate) ➢ Next Generation Sequencing (NGS) to determine the degree of shared stocks for billfish (highest priority species: swordfish and striped marlin) in the Indian Ocean with the southern Atlantic Ocean and Pacific Ocean, as appropriate. ➢ Nuclear markers (i.e. microsatellite) to determine the degree of shared stocks for billfish (highest priority species: striped marlin) in the Indian Ocean with the southern Atlantic Ocean and Pacific Ocean, as appropriate. ➢ Tagging studies (P-SAT)	High
Biological and ecological information (parameters for stock assessment)	Age and growth research ➢ CPCs to provide further research reports on billfish biology, namely age and growth studies including through the use of fish otolith or other hard parts, either from data collected through observer programs or other research programs.	High
	Age-at-Maturity ➢ Quantitative biological studies are necessary for billfish throughout their range to determine key biological parameters including age/size-at-maturity and fecundity-at-age/length relationships, which will be fed into future stock assessments.	High
	Spawning time and locations ➢ Collect gonad samples from billfish to confirm the spawning time and location of the spawning area that are presently hypothesized for each billfish species	High
Historical data review	Changes in fleet dynamics ➢ Japan and Taiwan,China to undertake an historical review of their longline fleets and to document the changes in fleet dynamics. The historical review should include as much explanatory information as possible regarding changes in fishing areas, species targeting, gear changes and other fleet characteristics to assist the WPB understand the current fluctuations observed in the data.	High
	Species identification ➢ The quality of the data available at the IOTC Secretariat on marlins (by species) is likely to be compromised by species miss-identification. Thus, CPCs should review their historical data in order to identify, report and correct (if possible) potential identification problems that are detrimental to any analysis of the status of the stocks.	High
Sports/recreational fisheries	Fishery trends ➢ The catch and effort data for sports/recreational fisheries targeting marlins and sailfish in the Indian Ocean should be submitted to the IOTC Secretariat to assist in future assessments for these species. CPCs with active sports/recreational fisheries targeting marlins and sailfish should undertake a comprehensive analysis for provision to the WPB.	High
CPUE standardisation	Develop and/or revise standardised CPUE series for each billfish species and major fisheries/fleets for the Indian Ocean ➢ Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France),	High

	Japan, Indonesia ➢ Striped marlin: Priority fleets: Japan, Taiwan,China ➢ Black marlin: Priority fleets: Taiwan,China ➢ Blue marlin: Priority fleets: Taiwan,China ➢ IP Sailfish: Priority fleets: Priority LL fleets: EU(Spain, Portugal, France), Japan, Indonesia; Priority GN fleets: I.R. Iran and Sir Lanka	
Stock assessment / Stock indicators	Develop and compare multiple assessment approaches to determining stock status for billfish	High
	Develop and investigate new methods for data poor stocks (marlins and IP sailfish)	High
Target and Limit reference points	To advise the Commission, by end of 2016 at the latest on Target Reference Points (TRPs) and Limit Reference Points (LRPs). ➢ Used when assessing billfish stock status and when establishing the Kobe plot and Kobe matrices	High
Management measure options	To advise the Commission, by end of 2016 at the latest, on potential management measures having been examined through the Management Strategy Evaluation (MSE) process. ➢ These management measures will therefore have to ensure the achievement of the conservation and optimal utilisation of stocks as laid down in article V of the Agreement for the establishment of the IOTC and more particularly to ensure that, in as short a period as possible and no later than 2020, (i) the fishing mortality rate does not exceed the fishing mortality rate allowing the stock to deliver MSY and (ii) the spawning biomass is maintained at or above its MSY level.	High

Working Party on Neritic Tunas (WPNT)

(Extracts from IOTC–2014–WPNT04–R: Appendix VI, Table 2)

WPNT: High priority topics, by project for neritic tuna species in the Indian Ocean

Stock structure (connectivity)	Genetic research to determine the connectivity of neritic tunas throughout their distributions ➢ Determine the degree of shared stocks for all neritic tunas under the IOTC mandate in the Indian Ocean, so as to better equip the SC in providing management advice based on unit stocks delineated by geographic distribution and connectivity. ➢ Genetic research to determine the connectivity of neritic tunas throughout their distributions: Table 2b should be used as a starting point for research project development to delineate potential stock structure for neritic tunas in the Indian Ocean. ➢ The IOTC Secretariat to coordinate a review of the available literature on neritic tuna stock structure across the Indian Ocean to assess the data already available such as the location of spawning grounds to identify potential sub-stocks. The report shall be provided to the WPNT05 meeting in 2015.	High
Biological information (parameters for stock assessment)	Age and growth research; Age-at-Maturity ➢ Quantitative biological studies are necessary for all neritic tunas throughout their range to determine key biological parameters including age-at-maturity and fecundity-at-age/length relationships, age-length keys, age and growth, which will be fed into future stock assessments.	High
Ecological information	Review of literature on life history parameters to assess stock structure on morphometric data ➢ IOTC Secretariat: Fishery Officer (Science) to undertake a literature review of all available population parameters for kawakawa, longtail tuna and narrow-barred Spanish mackerel, to support further stock assessment of these species in 2015. Summary paper to be made available 30 days before the WPNT05 meeting.	High
CPUE standardisation	Develop standardised CPUE series for each neritic tuna species for the Indian Ocean ➢ There is an urgent need to develop standardised CPUE series for each neritic tuna species for the Indian Ocean as a whole, by sub-region, by fleet, as appropriate.	High
Stock assessment / Stock indicators	Develop alternative approaches to determining stock status via and indicator based assessment ➢ The Weight-of-Evidence approach should be used to determine stock status, by building layers of partial evidence, such as CPUE indices combined with catch data, life-history parameters and yield-per recruit metrics, as well as the use of data poor assessment approaches. ➢ An examination of a four quadrant Indian Ocean stock structure (NE, SE, NW, SW) using the algorithms presented on Stock Reduction Analysis techniques should be undertaken for consideration at the next WPNT meeting for longtail tuna and kawakawa. ➢ The following data should be collated and made available for collaborative analysis: 1) catch and effort by species and gear by landing site; 2) operational data: stratify this by vessel, month, and year for the development as an indicator of CPUE over time; and 3) operational data: collate other information on fishing technique (i.e. area fished, gear specifics, depth, environmental condition (near shore, open ocean, etc.) and vessel size (length/horsepower).	High

Working Party on Temperate Tunas (WPTmT)

(Extracts from IOTC–2014–WPTmT05–R: Appendix VII, Table 2)

WPTmT: High priority topics, by project for albacore in the Indian Ocean

Topic	Sub-topic and project	Priority	Est. budget and/or potential source	Timing				
				2015	2016	2017	2018	2019
1. Stock structure (connectivity and diversity)	1.1 Genetic research to determine the connectivity of albacore throughout its distribution and the effective population size.	High	1.3 m Euro: European Union					
	1.1.1 Determine albacore stock structure, migratory range and movement rates in the Indian Ocean.		TBD					
	1.1.2 Determine the degree of shared stocks for albacore in the Indian Ocean with the southern Atlantic Ocean.		Ifremer					
	1.1.3 Population genetic analyses to decipher inter- and intraspecific evolutionary relationships, levels of gene flow (genetic exchange rate), genetic divergence, and effective population sizes.		TBD					
2. Biological information (parameters for stock assessment)	2.1 Age and growth research (collaborative research to estimate ages across research facilities; stratification of sampling across fishery and stock)	High	CPCs directly					
	2.1.1 China and other CPCs to provide further research reports on albacore biology, including through the use of fish otolith studies, either from data collected through observer programs or other research programs, at the next WPTmT meeting.		CPCs directly					
	2.1.2 Growth curve analysis: Uncertainty about the growth curve is a primary source of uncertainty in the stock assessment. Depending on the shape of the growth curve, it is likely that only limited information about total mortality can be obtained from catch-at-size data. As an additional information source, data on the age structure of the catch may be very informative about total mortality and may considerably reduce uncertainty in the assessment. Research needs to be undertaken to investigate the potential and the best approaches to be used. MSE process to look at improvement in precision of estimates given different amounts of age structure data, depending on fishery, growth curve, and		CPCs directly					

	effective sample sizes.			
	2.2 Natural mortality (M)	High		
	2.2.1 Examine the impacts of a range of M values on stock assessments, from constant rates of 0.2, 0.3. and 0.4 over time, to M values which change with age, from 0.4 to 0.2.		CPCs directly	
	2.2.2 Review evidence of currently available estimates are realistic, and whether more recent data is available on this key parameter.		CPCs directly	
	2.3 Age-at-Maturity	High		
	2.3.1 Quantitative biological studies are necessary for albacore throughout its range to determine key biological parameters including age-at-maturity and fecundity-at-age/length relationships, age-length keys, age and growth, which will be fed into future stock assessments.		CPCs directly	
3. Ecological information	3.1 Spawning time and locations	High		
	3.1.1 Collect gonad samples from albacore to confirm the spawning time and location of the spawning area that are presently hypothesised for albacore.		CPCs directly	
4. CPUE standardisation	4.1 Develop standardised CPUE series for each albacore fishery for the Indian Ocean, with the aim of developing a single CPUE series for stock assessment purposes (either a combined or single fleet series approved by the WPTmT).	High	CPUE Workshop (TBD)	
	4.1.1 Changes in species targeting is the most important issue to address in CPUE standardisations.		CPCs directly	
	4.1.2 Appropriate spatial structure needs to be considered carefully as fish density (and targeting practices) can be highly variable on a fine spatial scale, and it can be misleading to assume that large areas are homogenous when there are large shifts in the spatial distribution of effort.		CPCs directly	
	4.1.3 If there are many observations with positive effort and zero catch, it is worth considering models which explicitly model the processes that lead to the zero observations (e.g. negative binomial, zero-inflated or delta-lognormal models). Adding a small constant to the lognormal model may be fine if there are few zero's, but may not be appropriate for areas with many zero catches (e.g. north of 10oS). Sensitivity to the choice of constant		CPCs directly	

		should be tested.				
		4.1.4 The appropriate inclusion of environmental variables in CPUE standardisation is an ongoing research topic. Often these variables do not have as much explanatory power as, or may be confounded with, fixed spatial effects. This may indicate that model-derived environmental fields are not accurate enough at this time, or there may need to be careful consideration of the mechanisms of interaction to include the variable in the most informative way.		CPCs directly		
		4.1.5 It is difficult to prescribe analyses in advance, and model building should be undertaken as an iterative process to investigate the processes in the fishery that affect the relationship between CPUE and abundance.		CPCs directly		
5.	Stock assessment / Stock indicators	5.1 Develop and compare multiple assessment approaches to determining stock status for albacore (SS3, ASPIC etc).	High			
		5.1.1 A consultant be hired to assist in building capacity among the WPTmT participants by supplementing the skill set available within IOTC CPCs to further develop the SS3 model. An indicative budget is provided below:		US$26,000 in 2016 and 2018 IOTC Regular Budget	*	*
		Estimated budget (US$) required to hire a consultant to further develop the SS3 stock assessment model on albacore tuna in 2016 and 2018.				
6.	Target and Limit reference points	6.1 To advise the Commission, by end of 2014 at the latest on Target Reference Points (TRPs) and Limit Reference Points (LRPs).	High			
		6.1.1 Assessment of the interim reference points as well as alternatives: Used when assessing the albacore stock status and when establishing the Kobe plot and Kobe matrices. Agreed to pass this task temporarily to WPM.				

Description	**Unit price**	**Units required**	**2016 Total (US$)**	**2018 Total (US$)**
SS3 Stock assessment for albacore (fees)	550	40	22,000	22,000
SS3 Stock assessment for albacore (travel)	4,000	1	4,000	4,000
		Total estimate	**26,000**	**26,000**

7.	Management measure options	7.1 To advise the Commission, by end of 2014 at the latest, on potential management measures having been examined through the Management Strategy Evaluation (MSE) process. Agreed to pass this task temporarily to WPM.		

Working Party on Tropical Tunas (WPTT)

(Extracts from IOTC–2014–WPTT16–R: Appendix IX, Table 2)

WPTT: High priority topics, by project for tropical tunas in the Indian Ocean

Topic	Sub-topic and project	Priority
Stock structure (connectivity)	Research to describe the population structure and connectivity of billfish within the Indian Ocean (and adjacent Pacific and Atlantic waters as appropriate) ➢ Next Generation Sequencing (NGS) to determine tropical tuna stock structure, and migratory range. Determine the degree of shared stocks for tropical tunas in the Indian Ocean with the Pacific Ocean. ➢ Tagging movements and analysis to incorporate in stock assessments	High
Biological information (parameters for stock assessment)	Age and growth research ➢ CPCs to provide further research reports on tropical tuna biology, namely age and growth studies including using through the use of fish otoliths, either from data collected through observer programs or other research programs.	High
	Age-at-Maturity ➢ Quantitative biological studies are necessary for tropical tunas throughout their range to determine key biological parameters including age/size-at-maturity and fecundity-at-age/length relationships, which will be fed into future stock assessments.	High
Ecological information	Spawning time and locations ➢ Collect gonad samples from tropical tunas to confirm the spawning time and location of the spawning area that are presently hypothesized for each tropical tuna species	High
Historical data review	Changes in fleet dynamics need to be documented by fleet. ➢ Priority fleets: Japan and Taiwan,China LL ➢ FAD issues to be analysed for incorporation in CPUE series.	 High High
CPUE standardisation	Develop standardised CPUE series for each tropical tuna fleet/fishery for the Indian Ocean There is an urgent need to investigate the CPUE issues as detailed for bigeye tuna, skipjack tuna and yellowfin tuna in the WPTT15 report, and for these to be a high priority research activity for the tropical tuna resources in the Indian Ocean. That standardised CPUE index for juvenile yellowfin tuna and bigeye tuna caught by the EU purse seiner fleets, be estimated and submitted to the WPTT before the next round of stock assessments of tropical tunas. The standardisation of purse seine CPUE be made where possible using the operational data on the fishery. Develop and/or revise standardised CPUE series for each tropical tuna species and fishery for the Indian Ocean ➢ Bigeye tuna: High priority fleets: High (2016) ➢ Skipjack tuna: High priority fleets: High (2017) ➢ Yellowfin tuna: High priority fleets: High (2015)	High
Stock assessment / Stock indicators	Develop and compare multiple assessment approaches to determining stock status for tropical tunas	High
Target and Limit reference points	To advise the Commission, by end of 2016 at the latest on Target Reference Points (TRPs) and Limit Reference Points (LRPs). ➢ Used when assessing tropical tuna stock status and when establishing the Kobe plot and Kobe matrices	High
Management measure options	To advise the Commission, by end of 2016 at the latest, on potential management measures having been examined through the Management Strategy Evaluation (MSE) process. ➢ These management measures will therefore have to ensure the achievement	High

	of the conservation and optimal utilisation of stocks as laid down in article V of the Agreement for the establishment of the IOTC and more particularly to ensure that, in as short a period as possible (i) the fishing mortality rate does not exceed the fishing mortality rate allowing the stock to deliver MSY and (ii) the spawning biomass is maintained at or above its MSY level.

Working Party on Ecosystems and Bycatch (WPEB)

(Extracts from IOTC–2014–WPEB10–R: Appendix XVIII, Table 2)

WPEB: High priority topics, by project for bycatch in the Indian Ocean

Topic	Sub-topic and Project	Priority
SHARKS		
Fisheries and data collection	Historical data mining for the key species and IOTC fleets (e.g. as artisanal gillnet and longline coastal fisheries) and implementation of Regional Observer Schemes, including: • Capacity building of fisheries observers (including the provision of ID guides, training, etc.); • Define observer scheme (including minimum requirements) for fleets which are believed to have large catches on pelagic sharks (i.e. various longline and gillnet coastal fisheries) and where those statistics are mostly absent; • Historical data mining for the key species, including the collection of information about catch, effort and spatial distribution of those fleets; • Integration of data mining with observer programs to reconstruct species composition and catches of sharks.	High
Biology and ecology	Develop basic biology and ecology studies to fill essential knowledge gaps on the key IOTC shark species, including: • Age and growth studies for the blue (BSH), shortfin mako (SMA) and oceanic whitetip (OCS) sharks; • Stock delimitation identification (i.e., tagging and genetics[1]) for the blue (BSH), shortfin mako (SMA) and oceanic whitetip (OCS) sharks; • Migration and habitat use, including identification of hotspots and investigate associated environmental conditions affecting the sharks distribution, and making use of conventional and electronic tagging, for blue (BSH), shortfin mako (SMA) and oceanic whitetip (OCS) sharks; • Post-release mortality (electronic tagging), to assess the efficiency of management resolutions on no retention species (i.e. oceanic whitetip (OCS) and threshers sharks), shortfn mako sharks SMA) ranked as the most vulnerable species to longline fisheries.	High
Mitigation measures	Develop studies on shark mitigation measures (operational, technological aspects and best practices), including: • Longline selectivity, to assess the effects of hooks styles, bait types and trace materials on shark catch rates, hooking-mortality, bite-offs and fishing yield (socio-economics); • Gillnet selectivity, to assess the effect of mesh size, hanging ratio and net twine on sharks catches composition (i.e. species and size), and fishing yield (socio-economics); • Post-release mortality of whale sharks in purse-seine fisheries, to assess the efficiency of the best practice currently set in place; • Develop guidelines and protocols for safe handling and release of sharks caught on longlines and gillnets fisheries.	High
CPUE standardisation	Develop standardised CPUE series for each key shark species and fishery in the Indian Ocean • (High priority fleets: TWN-CHN LL, EU,Spain LL, Japan LL; Indonesia LL)	High
Stock assessment / Stock indicators	Develop and compare multiple assessment approaches to determining stock status for key shark species	High
Marine turtles	Review of bycatch mitigation measures Res. 12/04 (para. 11) The IOTC Scientific Committee shall request the IOTC Working Party on Ecosystems and Bycatch to: a) Develop recommendations on appropriate mitigation measures for gillnet, longline and purse seine fisheries in the IOTC area; b) Develop regional standards covering data collection, data exchange and training; c) Develop improved FAD designs to reduce the incidence of entanglement of marine	High

[1] Genetic studies might be integrated in a single study including other IOTC tuna and tuna-like species.

	turtles, including the use of biodegradable materials. The recommendations of the IOTC Working Party on Ecosystems and Bycatch shall be provided to the IOTC Scientific Committee for consideration at its annual session in 2012. In developing its recommendations, the IOTC Working Party on Ecosystems and Bycatch shall examine and take into account the information provided by CPCs in accordance with paragraph 10 of this measure, other research available on the effectiveness of various mitigation methods in the IOTC area, mitigation measures and guidelines adopted by other relevant organizations and, in particular, those of the Western and Central Pacific Fisheries Commission. The IOTC Working Party on Ecosystems and Bycatch will specifically consider the effects of circle hooks on target species catch rates, marine turtle mortalities and other bycatch species.	
	Res. 12/04 (para. 17) The IOTC Scientific Committee shall annually review the information reported by CPCs pursuant to this measure and, as necessary, provide recommendations to the Commission on ways to strengthen efforts to reduce marine turtle interactions with IOTC fisheries.	High
Seabirds	Review of bycatch mitigation measures: Res. 12/06 (para. 8) The IOTC Scientific Committee, based notably on the work of the WPEB and information from CPCs, will analyse the impact of this Resolution on seabird bycatch no later than for the 2016 meeting of the Commission. It shall advise the Commission on any modifications that are required, based on experience to date of the operation of the Resolution and/or further international studies, research or advice on best practice on the issue, in order to make the Resolution more effective.	High

Working Party on Data Collection and Statistics (WPDCS)

(Extracts from IOTC–2014–WPDCS10–R: Appendix TBA, Table 2)

Meeting will take place 2–4 December 2014

Working Party on Methods (WPM)

(Extracts from IOTC–2014–WPM05–R: Appendix TBA, Table 2)

Meeting will take place 5–6 December 2014