

OUTCOMES OF THE 17th SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 16 APRIL 2015

PURPOSE

To inform participants at the 5th Working Party on Neritic Tunas (WPNT05) of the recommendations arising from the 17th Session of the IOTC Scientific Committee (SC) held from 8–12 December 2014, specifically relating to the work of the WPNT.

BACKGROUND

At the 17th Session of the SC, the SC noted and considered the recommendations made by the WPNT in 2014 that included requests to address the deficiencies in data collection, monitoring and reporting by CPCs, as well as to carry out targeted research on understanding stock structure of the neritic tuna species under the IOTC mandate.

| IOTC code | English name | Scientific name |
|-----------|--------------------------------|--------------------------------|
| LOT | Longtail tuna | <i>Thunnus tonggol</i> |
| FRI | Frigate tuna | <i>Auxis thazard</i> |
| BLT | Bullet tuna | <i>Auxis rochei</i> |
| KAW | Kawakawa | <i>Euthynnus affinis</i> |
| COM | Narrow-barred Spanish mackerel | <i>Scomberomorus commerson</i> |
| GUT | Indo-Pacific king mackerel | <i>Scomberomorus guttatus</i> |

Based on the recommendations arising from the WPNT04, the SC17 adopted a set of recommendations, provide at [Appendix A](#) of this paper.

The recommendations contained in [Appendix A](#) were provided to the Commission for consideration at its 19th Session held in April 2015. A separate paper, IOTC–2015–WPNT05–04 addresses the responses and actions of the Commission.

In addition, the SC17 reviewed and endorsed a Program of Work (2015–19) for the WPNT, including a revised stock assessment schedule, as detailed in [Appendix B](#) and [Appendix C](#). A separate paper (IOTC–2015–WPNT05–08) will outline the review and development process for a Program of Work for the WPNT for the next five years.

DISCUSSION

In addition to the recommendations outlined in [Appendix A](#), [Appendix B](#) and [Appendix C](#), the SC made several other comments relevant to the WPNT, which participants are asked to consider:

Kawakawa – Maldives pole and line fishery catch rate standardisation: 2004–12

The SC **REQUESTED** that the Maldives undertake further investigation of the quality of the catch-and-effort data (i.e., the zero catch records, incidence of one day fishing per month records), and development of a criteria for identifying kawakawa targeted catch, in order to improve the quality of future abundance estimates. Results should be presented at the WPNT05 meeting. (SC17. Para. 29)

Stock structure research

The SC **RECALLED** that in 2013, it had made an additional recommendation on stock structure research, targeted primarily at neritic tunas under the IOTC mandate. Subsequently, at the request of the EU (DG-MARE), a concept note was developed to examine if there is a population structure of neritic tunas throughout the Indian Ocean. The IOTC Secretariat proposed that the list of species be expanded from only neritic tunas, to other IOTC species, including billfish, tropical, temperate tunas and sharks. The concept note has since been approved by the EU who will contribute €1.3 million and require an additional 20% co-contribution (€260,000) from either the IOTC regular budget or in combination with collaborating Institutions. The project will encourage a collaborative approach to the extent

feasible to meet the needs of the Commission. The need to work collaboratively with scientists in other oceans to assess stock structure as well as with scientists within the Indian Ocean region was highlighted. (SC17. Para. 30)

Capacity building activities

NOTING the request from the WPNT for further increasing the IOTC Capacity Building budget line in 2015 and 2016, the SC **ACKNOWLEDGED** the need for capacity building workshops/training to be carried out to support the collection, reporting and analysis of catch and effort data for neritic tuna and tuna-like species. The amount of funding being allocated to these capacity building activities and the difficulties in assessing the impact in terms of improvements in the quality of data submissions and analyses is of high importance to the SC and should be incorporated into the Program of Work. (SC17. Para. 124)

The SC **AGREED** that capacity building activities can be considered successful in the short-term if the objectives of the activity have been met during the time in which support was provided. The assessment of whether longer-term objectives have been met involves assessing whether the activities have been maintained beyond the lifetime of the activity which can be highly variable among recipient CPCs. In cases where there has been no continuation or follow-up on the work undertaken, then this is taken into consideration for future requests which are subsequently given lower priority. Therefore CPCs which actively continue to support and build on these activities are prioritised in future. (SC17. Para. 125)

Identification cards

The SC **AGREED** that IOTC CPCs should disseminate the identification cards to their observers and field samplers (Resolution 11/04), and as feasible, to their fishing fleets targeting tuna, tuna-like and shark species. This would allow accurate observer, sampling and logbook data on tuna and tuna-like species to be recorded and reported to the IOTC Secretariat as per IOTC requirements. (SC17. Para. 133)

Executive summaries for neritic tuna species

The SC also adopted revised Executive Summaries for each of the neritic tuna species that can be found as appendices to the SC17 report, and which can be downloaded from the IOTC website in English and French:

English: <http://iotc.org/science/scientific-committee>

French: <http://iotc.org/fr/science/comit%C3%A9-scientifique>

These Executive Summaries are also available via the IOTC **Stock Status dashboard**:

www.iotc.org/science/status-summary-species-tuna-and-tuna-species-under-iotc-mandate-well-other-species-impacted-iotc

RECOMMENDATION/S

That the WPNT:

- 1) **NOTE** paper IOTC–2015–WPNT05–03 which outlined the main outcomes of the 17th Session of the Scientific Committee (SC17), specifically related to the work of the WPNT.
- 2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

Appendix A: Consolidated set of recommendations of the 17th Session of the Scientific Committee (8-12 December 2014) to the Commission, relevant to the Working Party on Neritic Tunas.

Appendix B: Program of work (2015–2019) for the IOTC Working Party on Neritic Tunas (WPNT).

Appendix C: Schedule of stock assessments for the WPNT (2015–19).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 17th SESSION OF THE SCIENTIFIC COMMITTEE (8–12 DECEMBER 2014) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON NERITIC TUNAS

Extract of the Report of the 17th Session of the Scientific Committee

(IOTC–2014–SC17–R; Appendix XLIII, PAGES 301–312)

STATUS OF TUNA AND TUNA-LIKE RESOURCES IN THE INDIAN OCEAN

Tuna and seerfish – Neritic species

SC17.03 (para. 148) The SC **RECOMMENDED** that the Commission note the management advice developed for each neritic tuna (and mackerel) species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2014 (Fig. 6):

- Bullet tuna (*Auxis rochei*) – [Appendix XXI](#)
- Frigate tuna (*Auxis thazard*) – [Appendix XXII](#)
- Kawakawa (*Euthynnus affinis*) – [Appendix XXIII](#)
- Longtail tuna (*Thunnus tonggol*) – [Appendix XXIV](#)
- Indo-Pacific king mackerel (*Scomberomorus guttatus*) – [Appendix XXV](#)
- Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – [Appendix XXVI](#)

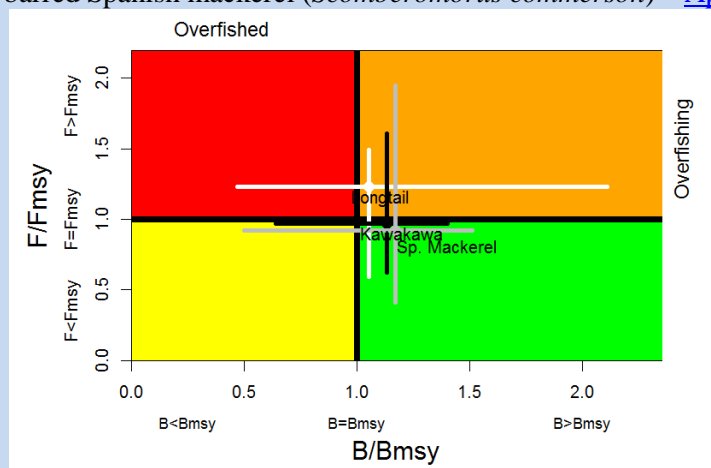


Fig. 6. Combined Kobe plot for kawakawa (black: 2014), longtail tuna (white: 2014) and narrow-barred Spanish mackerel (grey: 2014), showing the estimates of current stock size (B) and current fishing mortality (F) in relation to interim target spawning stock size and interim target fishing mortality. Cross bars illustrate the range of uncertainty from the model runs.

GENERAL RECOMMENDATIONS TO THE COMMISSION, TO SPECIFIC CPCs AND/OR OTHER BODIES

Review of Estimates of Input Fishing Capacity

SC17.25 (para. 88) **NOTING** that while there are currently forms available for the reporting of fishing capacity in the IOTC area of competence, the majority of CPCs do not report this information for its coastal fisheries, the SC **RECOMMENDED** that the Commission consider making reporting mandatory if an estimate of total fishing capacity is required

Report of the Third Session of the Working Party on Neritic Tunas (WPNT03)

Resolution 11/04 On a regional observer scheme

SC17.26 (para. 90) **NOTING** that the objective of the Regional Observer Scheme contained in Resolution 11/04, and the rules contained in Resolution 12/02 *On data confidentiality policy and procedures* makes no reference to the data collected not being used for compliance purposes, the SC **RECOMMENDED** that

at the next revision of Resolution 11/04, it be clearly stated that the data collected within the Regional Observer Scheme shall not be used for compliance purposes.

Summary discussion of matters common to Working Parties

Meeting participation fund

SC17.33 ([para. 118](#)) **NOTING** that the MPF was used to fund the participation of a reduced number of national scientists to the Working Parties in 2014, 49 national scientists to the Working Party meetings and the SC in 2014 (58 in 2013; 42 in 2012), all of which were required to submit and present a working paper at the meeting, the SC **RECOMMENDED** that the Commission consider the following:

- The IOTC Meeting Participation Fund (MPF), adopted by the Commission in 2010 (Resolution 10/05 *On the establishment of a Meeting Participation Fund for developing IOTC Members and non-Contracting Cooperating Parties*), and now incorporated into the IOTC Rules of Procedure (2014), was established for the purposes of supporting scientists and representatives from IOTC Contracting Parties who are developing States to attend and contribute to the work of the Commission, the Scientific Committee and its Working Parties.
- The Commission has made the following directives to the IOTC Secretariat:
 - a) The Commission had directed the IOTC Secretariat (via Resolution 10/05 and now via the IOTC Rules of Procedure (2014)) to ensure that: (para. 88 of the S18 Report)
 - i. the MPF be utilised, as a first priority, to support the participation of scientists from developing Contracting Parties in scientific meetings of the IOTC, including Working Parties, rather than non-science meetings.
 - ii. the MPF will be allocated in such a way that no more than 25% of the expenditures of the Fund in one year is used to fund attendance to non-scientific meetings.
 - iii. thus, 75% of the annual MPF shall be allocated to facilitating the attendance of developing Contracting Party scientists to the Scientific Committee and its Working Parties.
 - b) The Commission had directed the IOTC Secretariat that any cost savings made on the annual IOTC budget, shall also be used to further supplement the \$60,000 currently budgeted for the MPF.
- In accordance with para. 89 of the S18 Report, the IOTC Secretariat is actively seeking extra budgetary funding sources to supplement the MPF budget from individual Contracting Parties as well as other interested groups. However, the SC was informed by the IOTC Secretariat that other sources should actively be sought by interested candidates, including the UNFSA meeting fund, as well as through their own domestic budgetary processes.

SC17.34 ([para. 119](#)) The SC strongly **RECOMMENDED** that this fund be maintained into the future and increased back to its original allocation of \$200,000 per year.

SC17.35 ([para. 123](#)) The SC **RECOMMENDED** that the MPF rules of procedure be modified, so that a Draft working document, rather than an abstract, be submitted to the relevant Working Party MPF Selection Panel 45 days before the meeting, so that the Panel may review the full paper rather than just the abstract, and provide guidance on areas for improvement and the suitability of the application to receive funding using the MPF. The justification of this request is based upon the reduced funds available and the need to maximise benefits. The SC **AGREED** that until such time as the Commission revises the IOTC Rules of Procedure the MPF selection panels may choose to follow this proposal.

Capacity building activities

SC17.36 ([para. 126](#)) The SC **AGREED** that, while external funding is helping the work of the Commission, funds allocated by the Commission to capacity building are still too low, considering the range of issues identified by the SC and its Working Parties, and **RECOMMENDED** that the Commission consider allocating more funds to these activities in the future.

SC17.37 ([para. 127](#)) The SC **RECOMMENDED** that the Commission further increase the IOTC Capacity Building budget line so that capacity building workshops/training can be carried out in 2015, 2016 and future years on the collection, reporting and analyses of catch and effort data for IOTC species, with a special focus on neritic tuna and tuna-like species. Where appropriate these training sessions shall include information that explains the entire IOTC process from data collection to analysis and how the information collected is used by the Commission to develop Conservation and Management Measures.

IOTC species identification cards

SC17.38 (para. 129) **NOTING** the recent online survey distributed by the IOTC Secretariat, the SC strongly **RECOMMENDED** that the IOTC Secretariat ensure that hard copies of the identification cards continue to be printed as many CPCs scientific observers, both on board and port, still do not have smart phone technology/hardware access and need to have hard copies on board. At this point in time, electronic formats, including ‘applications or apps’ are only suitable for larger scale vessels, and even in the case of EU purse seine vessels, the use of hard copies is relied upon due to on board fish processing and handling conditions, as well as weather conditions.

Identification cards: Tuna and tuna-like species

SC17.39 (para. 130) **NOTING** the excellent work undertaken by the IOTC Secretariat and other experts to develop and finalise the cards for the *Identification of tuna and tuna-like species in the Indian Ocean fisheries*, the SC **RECOMMENDED** that the cards be translated, in priority order to the following languages, according to the proportion of total catches of neritic tuna species reported by country, and that the IOTC Secretariat utilise funds from both the IOTC budget, as well as external funding sources to translate and print in hard copy, the identification cards. Funds were approved by the Commission in the 2014 budget for this purpose, however the IOTC Secretariat indicated the funds are yet to be received from Members. Number in brackets represents the recent proportion of the total neritic tuna catch in the IOTC area of competence:

- 1) Bahasa-Indonesian (Indonesia 29%) and Malaysian (Malaysia 4%)
- 2) Persian (Farsi-I.R. Iran 20%) and Arabic (Oman 3%)
- 3) Hindi (India 18%) and Sinhala (Sri Lanka 5%)
- 4) Urdu (Pakistan 7%)

Proposed revisions to Resolution 11/04 on a regional observer scheme

SC17.42 (para. 159) **RECALLING** the objectives of Resolution 11/04 *on a regional observer scheme* as follows: “Para 1: The objective of the IOTC Observer Scheme shall be to collect verified catch data and other scientific data related to the fisheries for tuna and tuna-like species in the IOTC area of competence” and **NOTING** that the objective of the ROS contained in Resolution 11/04, and the rules contained in Resolution 12/02 *On data confidentiality policy and procedures* makes no reference to the data collected not being used for compliance purposes, the SC **RECOMMENDED** that at the next revision of Resolution 11/04, it be clearly stated that the data collected shall not be used for compliance purposes.

Electronic Monitoring

SC17.43 (para. 166) **NOTING** that electronic monitoring (including video) has been trialled and successfully implemented in many fisheries worldwide (e.g. Australia, European Union, USA, New Zealand), with the aim of supplementing scientific observers on board vessels; and given the current difficulties cited as reasons for not deploying scientific observers under the IOTC Regional Observer Scheme (ROS) on board large-scale gillnet vessels operating in the Indian Ocean; the SC **RECOMMENDED** that the Commission considers assigning the IOTC Secretariat, in consultation with interested IOTC scientists, to develop a project on electronic monitoring in the IOTC area of competence. This would allow an evaluation of the efficacy of electronic monitoring in the collection of information on catch, discards and fishing effort as a means to supplement scientific observer coverage for large-scale gillnet vessels. The trial will include an evaluation of the main challenges of using electronic monitoring data such as the accurate identification of IOTC and bycatch species, weight and size of catches and the time taken to process the footage and extract the required data. The concept note/proposal shall also include a clear indication that the IOTC data confidentiality policy (Resolution 12/02) will need to be modified to ensure any data/information collected is for the sole purpose of scientific analysis and not for compliance purposes. The concept note should include a detailed budget and be communicated to a range of potential funding organisations.

APPENDIX B

RESEARCH RECOMMENDATIONS AND PRIORITIES

*Extract of the Report of the 17th Session of the Scientific Committee
(IOTC–2014–SC17–R; Appendix XXXVIII, PAGE 328)*

The SC **NOTED** the proposed Program of Work and priorities for each of the Working Parties and **AGREED** to a consolidated Program of Work as outlined in [Appendix XXXVIII](#). 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 (IOTC–2014–SC17–R, Para. 177).

The SC **REQUESTED** that during the 2015 Working Party meetings, each group not only develop a Draft Program of Work for the next five years containing low, medium and high priority projects, but that all High Priority projects are ranked. The intention is that the SC would then be able to review the rankings and develop a consolidated list of the highest priority projects to meet the needs of the Commission. Where possible, budget estimates should be determined, as well as the identification of potential funding sources (IOTC–2014–SC17–R, Para. 178).

The SC **AGREED** that identifying research priorities among its Working Parties ([Appendix XXXVIII](#)) will assist individual CPCs and the IOTC Secretariat to identify funding sources for the implementation of priority research projects. Accordingly, and in the interest of transparency, the SC **REQUESTED** the IOTC Secretariat to follow the following consultative process involving the SC and Working Party Chairs and Vice-Chairs and the IOTC Secretariat:

- **Step 1:** Working Parties to identify research needs (based on the needs of the Commission), rank them by order of priority, provide cost estimates and list potential funding sources;
- **Step 2:** The SC and Working Party Chair and Vice-Chair, in liaison with the IOTC Secretariat should develop a consolidated document taking into account the different Working Party research needs and priorities, with the objective of ranking the research needs among all Working Parties;
- **Step 3:** The Chair of the SC shall present these to the SC, to be discussed and endorsed as the consolidated research priorities for the IOTC Science process;
- **Step 4:** The IOTC Secretariat, in consultation with the Chair and Vice-Chair of the SC and Chair and Vice-Chair or relevant Working Parties, shall identify funding possibilities to undertake the consolidated research priorities;
- **Step 5:** Once the funding sources have been committed to a particular research priority, the panel mentioned above in Step 2 shall develop terms of reference of the ‘Expression of Interest’ (including tasks, timelines and deliverables) and the selection procedure/criteria;
- **Step 6:** IOTC Secretariat to advertise a call for ‘Expression of Interest’ among the IOTC Commissioner’s and Science contact lists, and via the IOTC website;
- **Step 7:** The Chair of the SC, Chair(s) and Vice-Chair(s) of the WP(s) concerned, in liaison with the IOTC Secretariat shall determine the most appropriate project proposal, based on the criteria defined in Step 5 and in line with the financial rules of the Commission and FAO. Potential contracted candidate will be contacted by the IOTC Secretariat to confirm availability.

Working Party on Neritic Tunas (WPNT)

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

| | | |
|--|---|------|
| Stock structure (connectivity) | <p>Genetic research to determine the connectivity of neritic tunas throughout their distributions</p> <ul style="list-style-type: none"> ➤ 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) | <p>Age and growth research; Age-at-Maturity</p> <ul style="list-style-type: none"> ➤ 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 | <p>Review of literature on life history parameters to assess stock structure on morphometric data</p> <ul style="list-style-type: none"> ➤ 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 | <p>Develop standardised CPUE series for each neritic tuna species for the Indian Ocean</p> <ul style="list-style-type: none"> ➤ 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 | <p>Develop alternative approaches to determining stock status via and indicator based assessment</p> <ul style="list-style-type: none"> ➤ 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: <ol style="list-style-type: none"> 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 |

APPENDIX C

ASSESSMENT SCHEDULE FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2015–2019

Extract of the Report of the 17th Session of the Scientific Committee

(IOTC–2014–SC17–R; Appendix XXXIX, PAGE 342)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2015–19, 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 XXXIX](#) (IOTC–2014–SC17–R, Para. 180).

| Species | 2015 | 2016 | 2017 | 2018 | 2019 |
|---------------------------------------|-------------------------|------------|-------------------------|-------------------------|------------|
| <i>Working Party on Neritic Tunas</i> | | | | | |
| Bullet tuna | Indicators | Indicators | Indicators | Full assessment* | Indicators |
| Frigate tuna | Indicators | Indicators | Indicators | Full assessment* | Indicators |
| Kawakawa | Full assessment* | Indicators | Full assessment* | Indicators | Indicators |
| Longtail tuna | Full assessment* | Indicators | Full assessment* | Indicators | Indicators |
| Indo-Pacific king mackerel | Full assessment* | Indicators | Indicators | Full assessment* | Indicators |
| Narrow-barred Spanish mackerel | Full assessment* | Indicators | Indicators | Full assessment* | Indicators |