

**SCIENTIFIC COMMITTEE**

**THIRTEENTH REGULAR SESSION**

Rarotonga, Cook Islands

9 – 17 August 2017

**PROVISIONAL THEME AGENDA**

**WCPFC-SC13-2017/03-Theme Agenda**

1. **DATA AND STATISTICS THEME**
   1. **Data gaps**
      1. Data gaps of the Commission

SPC-OFP will present the data gaps paper. SC13 will consider, comment, and where relevant, recommend actions on how to address any identified data gaps in the data holdings of the Commission.

**ST-WP-01** Scientific data available to the Western and Central Pacific Fisheries Commission

**ST-IP-01** SPC Estimates of annual catches in the WCPFC Statistical Area

**ST-IP-10** Group Seine Operations of Philippine Flagged Vessels in High Seas Pocket 1 (HSP1)

**ST-IP-12** PNA Purse Seine Activity

* + 1. Species composition of purse-seine catches (Project 60)

SC13 will review the research progress of Project 60 (Collection and evaluation of purse-seine species composition data), including operational aspects of spill sampling on purse seine vessels and annual estimates of purse seine catches based on:

1. unadjusted logsheet method,
2. YFT-BET correction method,
3. SKJ-YFT-BET correction, adjusted by grab sampling, and
4. SKJ-YFT-BET, unadjusted by grab sampling.

SC13 will review other key findings and provide further recommendations, if any, to the Commission.

**ST-WP-02** Better purse seine catch composition estimates: recent progress and future work plan for Project 60

**ST-WP-03** Improving the quality of Japanese purse seine catch composition estimates: a Project 60 collaboration

**ST-WP-04** Species composition in the USA purse seine fishery as estimated by Regional Purse Seine logsheets and Cannery Receipts

**ST-IP-03** Estimates of purse seine catches by species based on alternative data sources

* + 1. Potential use of cannery receipt data for the work of the WCPFC

SC13 will consider the potential use of cannery receipt data for the work of the WCPFC.

**ST-IP-04** Summary of cannery data with potential use to the WCPFC.

**ST-IP-05** Pilot Study of the Potential for using Non-ISSF Associated Cannery Receipt Data for the work of the WCPFC

* + 1. Estimates of purse seine bycatch

**ST-WP-05** Summary of purse seine fishery bycatch at a regional scale, 2003-2016

* 1. **FAD data management**

The Commission requested SC13 to consider the outcomes of the 2nd FADMgmtOptions-IWG (WCPFC13 Summary Report):

*601. The Commission adopted the Report of the 2nd meeting of the FADMgmtOptions-IWG (WCPFC13-2016-FADMgmtOptions-IWG02\_rev2), and agreed that the outcomes therein should be further considered at SC13 and TCC13.*

* + 1. Additional FAD data fields to be provided by vessel operators

SC13 will note the following recommendations from the FADMgmtOptions-IWG02, and provide recommendations as appropriate.

FADMgmtOptions-IWG02 Report:

*62. The FADMgmtOptions-IWG endorsed in principle the fields in the table on page 3 of the Working Paper to be provided by vessel operators and recommended that the fields be referred to the SC and TCC for further consideration (Attachment C).*

*64. The FADMgmtOptions-IWG recommended that the elaboration of the data fields to be provided by vessel operators should take into account the data fields for provision of FAD data by vessel operators by the IATTC.*

* + 1. FAD marking and monitoring

The FADMgmtOptions-IWG recommended to WCPFC13 that the consultant’s report on options and considerations of implementing a marking and identification system for FADs in the WCPO (FADMgmtOptionsIWG-02-04) be forwarded to SC13 and TCC13 for further consideration (Paragraph 51, FADMgmtOptions-IWG02 Report)

SC13 is invited to consider the consultancy report and provide recommendations as appropriate.

* 1. **Regional Observer Programme**
     1. ROP longline coverage

As agreed by WCPFC11 (Paragraphs 484-486, WCPFC11 Report), CCMs submitted their longline observer coverage in Annual Report Part 1 using their choice of coverage metric (Attachment L, WCPFC11 Report). SC13 may consider and comment on the compiled information on longline observer coverage and where necessary, provide recommendations to the Commission.

SC13 will review the calculated annual coefficients of variation for the CPUE data of various taxa collected from longline observer data for 2013, 2014 and 2015.

**ST-IP-02** Status of observer data management

* + 1. Review of ROP minimum standards data fields

As requested by the Commission, SC13 will review any new proposals to revise the ROP Minimum Data Standard Data Fields.

FADMgmtOptions-IWG02 Report:

*63. The FADMgmtOptions-IWG recommended that the issue of data to be provided by observers be referred to SC13 and TCC13, and CCMs were encouraged to provide delegation papers on this aspect*

**ST-WP-06** PNA FAD Data To Be Provided By Observers

WCPFC13 Summary Report:

*550.* WCPFC13 adopted the following:

*3. SC13 shall review, as appropriate, a revision of the ROP minimum standards data fields and develop safe release guidelines for Manta and Mobula rays, with a view to their adoption by WCPFC14.*

**ST-WP-07** Clarification of WCPFC Shark Designations in Response to WCPFC13 Decisions regarding Manta and Mobulid Rays

* 1. **Electronic Reporting outcomes from WCPFC13**

Noting decisions taken by the Commission (Paragraphs 583 – 585), SC13 shall review any progress and developments related to ER&EM, including the status of WCPFC E-reporting standards.

WCPFC13 Summary Report:

*583. The Commission adopted the Summary Report of the ERandEM Working Group second meeting (WCPFC-TCC12-2016-17) and noted the update on progressing the development of draft standards, specifications and procedures for Electronic Reporting (WCPFC13-2016-28).*

*584. The Commission adopted the standards, specifications and procedures for Electronic Reporting, which presently include E-reporting standards for operational catch and effort data (Attachment T).*

*585. The draft E-reporting standards for observer data, high seas pocket reporting and reporting in the event of VMS malfunction should continue to be revised based on comments provided by CCMs in 2017.*

**ST-IP-07** A brief update on ER and EM progress in the region

**ST-IP-08** EM activities within the Fiji longline fleet [tentative]

**ST-IP-09** Automated visual detection of captures from EM video

**ST-IP-11** Test of MARLIN (Electronic Logsheet) in Philippine-flagged Vessels in High Seas Pocket 1

* 1. **Economic data**

FFA will present a paper on draft guidelines for the CCM's voluntary submission of economic data to the Commission for SC13's consideration.

**ST-WP-08** FFA Analyses and projections of economic conditions in WCPO fisheries

**ST-WP-09** FFA Development of Guidelines for the Voluntary Submission of Economic data to the Commission

**DATA AND STATISTICS THEME PAPERS**

|  |  |
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| ***ST THEME – Working Papers*** | |
| **ST-WP-01** | Scientific data available to the Western and Central Pacific Fisheries Commission |
| **ST-WP-02** | Better purse seine catch composition estimates: recent progress and future work plan for Project 60 |
| **ST-WP-03** | Improving the quality of Japanese purse seine catch composition estimates: a Project 60 collaboration |
| **ST-WP-04** | Species composition in the USA purse seine fishery as estimated by Regional Purse Seine logsheets and Cannery Receipts |
| **ST-WP-05** | Summary of purse seine fishery bycatch at a regional scale, 2003-2016 |
| **ST-WP-06** | PNA FAD Data To Be Provided By Observers |
| **ST-WP-07** | Clarification of WCPFC Shark Designations in Response to WCPFC13 Decisions regarding Manta and Mobulid Rays |
| **ST-WP-08** | FFA Analyses and projections of economic conditions in WCPO fisheries |
| **ST-WP-09** | FFA Development of Guidelines for the Voluntary Submission of Economic data to the Commission |
| ***THEME – Information Papers*** | |
| **ST-IP-01** | SPC Estimates of annual catches in the WCPFC Statistical Area |
| **ST-IP-02** | Status of observer data management |
| **ST-IP-03** | Estimates of purse seine catches by species based on alternative data sources |
| **ST-IP-04** | Summary of cannery data with potential use to the WCPFC. |
| **ST-IP-05** | Pilot Study of the Potential for using Non-ISSF Associated Cannery Receipt Data for the work of the WCPFC |
| **ST-IP-06** | Withdrawn |
| **ST-IP-07** | A brief update on ER and EM progress in the region |
| **ST-IP-08** | EM activities within the Fiji longline fleet (tentative) |
| **ST-IP-09** | Automated visual detection of captures from EM video |
| **ST-IP-10** | Group Seine Operations of Philippine Flagged Vessels in High Seas Pocket 1 (HSP1) |
| **ST-IP-11** | Test of MARLIN (Electronic Logsheet) in Philippine-flagged Vessels in High Seas Pocket 1 |
| **ST-IP-12** | PNA Purse Seine Activity |

1. **STOCK ASSESSMENT THEME**
   1. **WCPO tunas**
      1. **WCPO bigeye tuna (*Thunnus obesus*)**
         1. Review of research and information
      2. Project 35 and relevant research

**SA-WP-01**Age, growth and maturity of bigeye tuna in the Pacific: Project 35

*IP-01,02,03,04 will be referred to if needed.*

* + 1. Improvement of MULTIFAN-CL software for stock assessments

Work to improve the MULTIFAN-CL software is ongoing. SC13 will review the progress and provide comments and recommendations as required.

*IP-05 will be referred to if needed.*

* + 1. Review of 2017 bigeye tuna stock assessment

SC13 will review the results of the 2017 bigeye tuna stock assessment, any future research, including budget implications, and provide recommendations to the Commission, as required.

**SA-WP-03** Geo-statistical analyses of operational longline CPUE data

**SA-WP-04** Use of operational vessel proxies to account for vessels with missing identifiers in the development of standardised CPUE time series

**SA-WP-05** Stock assessment of bigeye tuna in the WCPO

*WP-02, IP-01,02,06 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Stock status and trends
2. Management advice and implications
   * 1. **WCPO yellowfin tuna (*Thunnus albacares*)**
        1. Review of research and information
3. Review of 2017 yellowfin tuna stock assessment

SC13 will review the results of the 2017 yellowfin tuna stock assessment, any future research, including budget implications, and provide recommendations to the Commission, as required.

**SA-WP-06** Stock assessment of yellowfin tuna in the WCPO

*WP-02,03,04, IP-01,02,04,06,07　will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **WCPO skipjack tuna (*Katsuwonus pelamis*)**
        1. Review of research and information
3. Update of skipjack tuna stock assessment information

The last stock assessment was conducted in 2016. SC13 will review information on indicators for WCPO skipjack tuna.

**SA-WP-02** A compendium of fisheries indicators for tuna stocks

* + - 1. Project 67 (Skipjack fishery impacts on the margins of the Convention Area)

SC13 will review the results of Project 67 related to skipjack fishery impacts on the margins of the Convention Area.

**SA-WP-07** Lehody P. Impacts of Recent High Catches of Skipjack on Fisheries on the Margins of the WCPFC Convention Area

*IP-08,09 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **South Pacific albacore tuna (*Thunnus alalunga*)**
        1. Review of research and information
   1. Update of South Pacific albacore tuna stock assessment information

The last stock assessment was conducted in 2015. SC13 will review the recent trends in the South Pacific albacore fishery and the results of the 2017 South Pacific albacore stock indicator analysis, and provide comments and/or recommendations for any future research needs.

**SA-WP-08** Recent trends in the south Pacific albacore fishery

*WP-02, IP-10 will be referred to if needed.*

* + - 1. Review of research and information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   1. **Northern stocks**

Annex I of the Commission’s Rules of Procedure defines ‘northern stocks’ to be ‘stocks which occur mostly in the area north of 20° north parallel’ and currently are ‘northern Pacific bluefin[[1]](#footnote-1), northern albacore[[2]](#footnote-2) and the northern stock of swordfish[[3]](#footnote-3)’. According to the MOU between WCPFC and ISC, the ISC’s scientific information and advice will be presented at the annual meetings of the Scientific Committee.

The ISC Chair will be invited to brief SC13 on the activities of ISC since SC12, including the ISC’s 2017 stock assessments and future plans.

* + 1. **North Pacific albacore (*Thunnus alalunga*)** 
       1. Review of research and information

1. Review of 2017 North Pacific albacorestock assessment

SC13 will review the ISC’s 2017 stock assessment for North Pacific albacore tuna.

**SA-WP-09** ISC North Pacific Albacore Assessment

*IP-11 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **Pacific bluefin tuna (*Thunnus orientalis*)** 
        1. Review of research and information

The last stock assessment was conducted in 2016. SC13 may consider any updated information, if available, about the status of Pacific bluefin tuna.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **North Pacific swordfish (*Xiphias gladius*)**
        1. Review of research and information

The last stock assessment was conducted in 2014 and no stock assessment has been conducted since then. SC13 may consider any updated information, if available, about the status of North Pacific swordfish.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   1. **WCPO sharks**
      1. **Review of shark researches**

SC13 will review the progress and results of i) Project 78 (Review of shark data and modelling framework to support stock assessments) and ii) shark post-release mortality tagging studies, and provide recommendations, as appropriate, to the Commission.

* + 1. **Oceanic whitetip shark (*Carcharhinus longimanus*)**
       1. Review of research and information

The last stock assessment was conducted in 2012 and no stock assessment has been conducted since then. SC13 may review any updated information and indicator analysis, if available, for oceanic whitetip shark.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **Silky shark (*Carcharhinus falciformis*)**
        1. Review of research and information

The last stock assessment was conducted in 2013 and no stock assessment has been conducted since then. SC13 will review any updated information and indicator analysis, if available, for silky shark.

*IP-12 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **South Pacific blue shark (*Prionace glauca*)**
        1. Review of research and information

The last stock assessment was conducted in 2016. SC13 will review any updated information and indicator analysis, if available, for South Pacific blue shark.

*IP-13 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **North Pacific blue shark (*Prionace glauca*)**
        1. Review of research and information
3. Review of 2017 North Pacific blue sharkstock assessment

SC13 will review the ISC’s 2017 stock assessment for North Pacific blue shark.

**SA-WP-10** ISC North Pacific Blue Shark Assessment

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **North Pacific shortfin mako (*Isurus oxyrinchus*)**
        1. Review of research and information

ISC conducted an indicator analysis in 2015 and a full assessment is planned in 2018. SC13 may review any additional information, if available.

* + 1. **Pacific bigeye thresher shark (*Alopias superciliosus*)**
       1. Review of research and information

SC13 will review the results of the Pacific-wide sustainability risk assessment of bigeye thresher shark, and provide comments/recommendations to the Commission, as required. The report is available at:

<http://www.fao.org/fileadmin/user_upload/common_oceans/docs/Tuna/WCPFCStockStatusAssessmentReport.pdf>

**SA-WP-11** Fu D., M-J. Roux, S. Clarke, M. Francis, A. Dunn and S. Hoyle. Pacific-wide sustainability risk assessment of bigeye thresher shark (Alopias superciliosus)

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **Porbeagle shark (*Lamna nasus*)**
        1. Review of research and information

SC13 will review the results of the porbeagle shark assessment, and provide comments/recommendations to the Commission, as required.

**SA-WP-12** Hoyle, S.D. C.T.T. Edwards, M-J Roux, S.C. Clarke and M.P. Francis Indicators and risk assessment for porbeagle sharks in the southern hemisphere.

*IP-13,14,15,16,17,18 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   1. **WCPO billfishes**
      1. **South Pacific swordfish (*Xiphias gladius*)** 
         1. Review of research and information
   2. Review of 2017 South Pacific swordfishstock assessment

SC13 will review the results of the 2017 South Pacific swordfish stock assessment, any future research, including budget implications, and provide recommendations to the Commission, as required.

**SA-WP-13** Stock assessment of swordfish in the SW Pacific

*IP-19 will be referred to if needed.*

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **Southwest Pacific striped marlin (*Kajikia audax*)**
        1. Review of research and information

No stock assessment was conducted since 2011. SC13 may review updated information if available for Southwest Pacific striped marlin.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **North Pacific striped marlin (*Kajikia audax*)**
        1. Review of research and information

No stock assessment was conducted since 2015. SC13 will review updated information if available for North Pacific striped marlin.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
   * 1. **Pacific blue marlin (*Makaira nigricans*)** 
        1. Review of research and information

The last stock assessment was conducted by ISC in 2016. SC13 will review updated information if available for Pacific blue marlin.

* + - 1. Provision of scientific information

SC13 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications

**STOCK ASSESSMENT THEME PAPERS**

|  |  |
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| ***SA THEME – Working Papers*** | |
| **SA-WP-01** | Age, growth and maturity of bigeye tuna in the Pacific: Project 35 |
| **SA-WP-02** | A compendium of fisheries indicators for tuna stocks |
| **SA-WP-03** | Geo-statistical analyses of operational longline CPUE data |
| **SA-WP-04** | Use of operational vessel proxies to account for vessels with missing identifiers in the development of standardised CPUE time series |
| **SA-WP-05** | Stock assessment of bigeye tuna in the WCPO |
| **SA-WP-06** | Stock assessment of yellowfin tuna in the WCPO |
| **SA-WP-07** | Lehody P. Impacts of Recent High Catches of Skipjack on Fisheries on the Margins of the WCPFC Convention Area |
| **SA-WP-08** | Recent trends in the south Pacific albacore fishery |
| **SA-WP-09** | ISC North Pacific Albacore Assessment |
| **SA-WP-10** | ISC North Pacific Blue Shark Assessment |
| **SA-WP-11** | Fu D., M-J. Roux, S. Clarke, M. Francis, A. Dunn and S. Hoyle. Pacific-wide sustainability risk assessment of bigeye thresher shark (Alopias superciliosus) |
| **SA-WP-12** | Hoyle, S.D. C.T.T. Edwards, M-J Roux, S.C. Clarke and M.P. Francis Indicators and risk assessment for porbeagle sharks in the southern hemisphere. |
| **SA-WP-13** | Stock assessment of swordfish in the SW Pacific |
| ***SA THEME – Information Papers*** | |
| **SA-IP-01** | Pilling G. and S. Brouwer. Report of the workshop on analysis of CPUE for stock assessments, Noumea, April 2017. |
| **SA-IP-02** | Pilling G. and S. Brouwer. Report from the SPC pre-assessment workshop, Noumea, April 2017. |
| **SA-IP-03** | Karen Evans, K., P. Grewe, R. Gunaskera and M. Lansdell. Connectivity of tuna and billfish species targeted by the Australian Eastern Tuna and Billfish Fishery with the broader Western Pacific Ocean. |
| **SA-IP-04** | Matsumoto, T. and K. Satoh. Summary report of tag data for yellowfin and bigeye tuna by Japanese tagging programs. |
| **SA-IP-05** | Developments in the MULTIFAN-CL software 2016-2017 |
| **SA-IP-06** | Background analyses for the 2017 stock assessments of bigeye and yellowfin tuna in the western and central Pacific Ocean |
| **SA-IP-07** | Bigelow K. and E. Garvilles. Relative abundance of yellowfin tuna for the purse seine and handline fisheries operating in the Philippines Moro Gulf (Region 12) and High Seas Pocket #1 |
| **SA-IP-08** | Tanaka F., S. Ohashi, Y. Aoki and H. Kiyofuji. Reconsideration of skipjack otolith microstructural analysis for age and growth estimates in the WCPO. |
| **SA-IP-09** | Aoki Y., M. Masujima and H. Kiyofuji. Skipjack migration in the western central Pacific Ocean estimated from the particle tracking simulation with dynamic energy budget model. |
| **SA-IP-10** | Wang J., X. Chen, J. Zhua, J. Caoc and Y. Chen. Impacts of misspecification of spawner-recruitment relationship on stock assessment: An example of South Pacific albacore tuna. |
| **SA-IP-11** | Jiang J., L Xu, G. Zhu and W. Zhu. Age and growth of North Pacific albacore tuna (Thunnus alalunga) based on sectioned fin ray. |
| **SA-IP-12** | Clarke S. Summary of Progress on Data Preparation for an Updated, Pacific-wide Silky Shark Assessment |
| **SA-IP-13** | Francis M. P. and K. Large Updated abundance indicators for New Zealand blue, porbeagle and shortfin mako sharks. |
| **SA-IP-14** | Cortés, Federico, Waessle, Juan A.1, Massa, Ana M. and Hoyle, Simon D. Aspects of porbeagle shark bycatch in the Argentinean surimi fleet operating in the Southwestern Atlantic Ocean (50 – 57º S) during 2006-2014 |
| **SA-IP-15** | Hoyle, S.D., Y. Semba, M. Ka and H. Okamoto. Development of Southern Hemisphere porbeagle shark stock abundance indicators using Japanese commercial and survey data |
| **SA-IP-16** | Francis M. P. Recalculation of historical landings of porbeagle shark |
| **SA-IP-17** | Hoyle, S., J. C. Quiroz, P. Zarate, D. Devia and J. Azocar Population indicators for porbeagle sharks in the Chilean swordfish fishery |
| **SA-IP-18** | Forselledo R., F. Mas, S. Hoyle & A. Domingo. Standardized CPUE of porbeagle shark (Lamna nasus) caught by the Uruguayan pelagic longline fleet (1982-2012) |
| **SA-IP-19** | Background analyses for the 2017 stock assessment of SW Pacific swordfish in the western and central Pacific Ocean |

1. **MANAGEMENT ISSUES THEME**
   1. **DEVELOPMENT OF A HARVEST STRATEGY FRAMEWORK**
      1. **Reference Points**

South Pacific Albacore

With reference to Paragraph 315 in the WCPFC13 Summary Report below, SC13 will have an opportunity to review a report on intersessional progress to develop a TRP for SP albacore.

*315. The Commission directed that further discussion of the TRP should take place over the course of 2017 as part of the ongoing consultative process for the development of a Bridging Measure for the Conservation and Management of the South Pacific Albacore stock, and should include a report on progress by the Convenor of that process to the 13th WCPFC Scientific Committee.*

**MI-WP-01:** Analysis Implications of a range of Target Reference Points for the south Pacific albacore stock

* + 1. **Performance Indicators and Monitoring Strategies**

As requested by the Harvest Strategies Workplan (Attachment N, WCPFC13 Summary Report), SC13 will provide advice on a range of performance indicators to evaluate performance of harvest control rules for bigeye and yellowfin tuna fisheries. As requested by the Small Working Group on Management Objectives at WCPFC13, SC13 will provide advice on refined candidate performance indicators for south Pacific albacore fisheries.

Following discussions in the SWG on management objectives at WCPFC13, and commensurate with the candidate performance indicators for the relevant fisheries, SC13 will provide advice on the corresponding monitoring strategy to assess performance of harvest strategies.

**MI-WP-02:** Performance indicators and monitoring strategies for South Pacific Albacore compatible with candidate management objectives for the Southern Longline Fishery.

**MI-WP-03:** Performance indicators and monitoring strategies for Bigeye and Yellowfin Tuna compatible with candidate management objectives for the Tropical Longline Fishery.

**MI-IP-01:** Operationalising the monitoring strategies for tropical purse seine and southern longline fisheries: Information requirements and data availability.

* + 1. **Harvest Control Rules and Management Strategy Evaluation**

As requested by the Harvest Strategies Workplan (Attachment N, WCPFC13 Summary Report), SC13 will provide advice on progress toward the evaluation of candidate harvest control rules for South Pacific albacore and skipjack tuna.

**MI-WP-04:** Developments in the MSE modelling framework.

**MI-IP-02:** Generating pseudo data in MFCL.

**MI-IP-09:** Report of the 1st Joint Tuna RFMO Management Strategy Evaluation Working Group.

* 1. **MANAGEMENT ISSUES RELATED TO FADs**
     1. **FAD Tracking**

SC13 is invited to consider the report of the FAD tracking programme undertaken by PNA.

**MI-WP-05**: Preliminary analyses of data from the 2016/2017 PNA FAD tracking programme.

* + 1. **FAD Management**

SC13 is invited to consider the report of the Global FAD Science Symposium held 20-23 March 2017 in Santa Monica, California, USA.

**MI-WP-06**: Global FAD Science Symposium (2017): What does well-managed FAD use look like within a tropical purse seine fishery?

**MI-IP-03**: Report of Joint t-RFMO FAD Workshop meeting.

* 1. **IMPLEMENTATION OF CMM-2016-01**

SC13 will review any updated information related to CMM 2016-01, including bigeye tuna hotspot analysis and footnote 5 of Paragraph 18 relating to eligibility for exemption from the high seas FAD closure, and provide recommendations to the Commission as appropriate.

**MI-WP-07:** Report from Project 77: Development of potential measures to reduce interactions with bigeye tuna in the purse seine fishery in the western and central Pacific Ocean (‘bigeye hotspots analysis’).

**MI-IP-04:** Updating indicators of effort creep in the WCPO purse seine fishery.

**MI-IP-05:** Evaluation of the consequences of size-based limits and catch retention.

**MI-IP-06:** Analysis of purse seine set times and school association using observer data.

**MI-IP-07:** Tables of yellowfin catch by gear and flag, 2010-2016.

**MI-IP-08:** Tables of bigeye purse seine catch by gear and flag, 2010-2016.

**PAPERS FOR MANAGEMENT ISSUES THEME**

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| ***MI THEME – Working Papers*** | |
| **MI-WP-01** | FFA. *Implications of a range of Target Reference Points for the south Pacific albacore stock* |
| **MI-WP-02** | Scott, R. *Performance indicators and monitoring strategies for South Pacific Albacore compatible with candidate management objectives for the Southern Longline Fishery*. |
| **MI-WP-03** | Scott, R. *Performance indicators and monitoring strategies for Bigeye and Yellowfin Tuna compatible with candidate management objectives for the Tropical Longline Fishery*. |
| **MI-WP-04** | Scott R. Developments in the MSE modelling framework. |
| **MI-WP-05** | Escalle, L. *Preliminary analyses of data from the 2016/2017 PNA FAD tracking programme* |
| **MI-WP-06** | Hampton et al. Global FAD Science Symposium (2017): *What does well-managed FAD use look like within a tropical purse seine fishery*? |
| **MI-WP-07** | Escalle, L. Report from Project 77: *Development of potential measures to reduce interactions with bigeye tuna in the purse seine fishery in the western and central Pacific Ocean (‘bigeye hotspots analysis’).* |
| ***MI THEME – Information Papers*** | |
| **MI-IP-01** | Scott R. *Operationalising the monitoring strategies for tropical purse seine and southern longline fisheries: Information requirements and data availability*. |
| **MI-IP-02** | Scott R. *Generating pseudo data in MFCL: skipjack examples*. |
| **MI-IP-03** | Anon. *Report of Joint t-RFMO FAD Workshop meeting.* |
| **MI-IP-04** | Pilling, G. *Updating indicators of effort creep in the WCPO purse seine fishery*. |
| **MI-IP-05** | Brouwer, S. *Evaluation of the consequences of size-based limits and catch retention.* |
| **MI-IP-06** | Brouwer, S. *Analysis of purse seine set times and school association using observer data*. |
| **MI-IP-07** | Williams, P. *Tables of yellowfin catch by gear and flag, 2010-2016.* |
| **MI-IP-08** | Williams, P. *Tables of bigeye purse seine catch by gear and flag, 2010-2016.* |
| **MI-IP-09** | Kobe MSE Working Group. *Report of the 1st Joint Tuna RFMO Management Strategy Evaluation Working Group* |

1. **ECOSYSTEM AND BYCATCH MITIGATION THEME**
   1. **Ecosystem effects of fishing**
      1. SEAPODYM

SC13 will consider updates to the SEAPODYM modelling framework, review recent model runs and provide comments and/or recommendations on SEAPODYM, including the process and methodology of the modelling framework if needed.

**EB-WP-01** Lehodey et al. Modelling the impact of climate change including ocean acidification on Pacific yellowfin tuna.

* + 1. Ecosystem indicators

SC13 will consider fishery and environmental impacts on ecosystem, based on updated information, if available, including the development of ecosystem indicators.

**EB-IP-02** Gilman, E. et.al. Ecological data from observer programmes underpin ecosystem-based ﬁsheries management

**EB-IP-10** FAO.Report of the joint meeting of tuna RFMOs on the implementation of the ecosystem approach to fisheries management

* + 1. FAD impacts
       1. Case studies on FADs

SC13 will review FAD-related researches to assess the impacts of FAD fishing and to mitigate their negative impacts on marine ecosystem, including non-target and associated or dependent species

**EB-WP-02** SPC Review of research into drifting FAD designs to reduce bycatch entanglement and bigeye/yellowfin interactions

**EB-WP-03** Lee, C-W et. al.Prediction of shooting trajectory of purse seine fishing

**EB-WP-04** Lopez et. al.Initiatives to reduce tropical tuna FAD fishery ecological impacts: from traditional to non-entangling and biodegradable FADs

**EB-IP-16** Wang et. al. An evaluation of differences in habitat quality between FADs-associated and unassociated schools of skipjack tuna Katsuwonus pelamis using quantile regressions.

**EB-IP-05** Wang et. al. Comparison of condition factor between FADs-associated and unassociated schools of skipjack tuna Katsuwonus pelamis on the Western and Central Pacific Ocean

* + - 1. FAD research plan

As recommended by the FADMgmtOptions-IWG, SC13 will review the proposed priority researches in the revised draft FAD research plan proposal (Paragraph 71 and Attachment D, FADMgmtOptions-IWG02 Report), especially related to Implementation of FAD trials within the WCPO.

**EB-WP-05** SPC Project proposals related to purse seine FAD use within the WCPO, as requested by the WCPFC FAD Intersessional Working Group

* 1. **Sharks** 
     1. Review of conservation and management measures for sharks

Subject to proposal(s) available under Agenda 6.2.2, SC13 will review relevant paragraphs of each shark CMM below, and provide comments or recommendations as required to the Commission.

* + - 1. CMM 2010-07 (CMM for Sharks)

SC13 will review any updated information and research outputs related with the CMM for Sharks, especially related with Paragraphs 4, 8, and 13 with reference to data provision, fin to carcass ratios, and the need for a revised or new CMM.

* + - 1. CMM 2011-04 (CMM for oceanic whitetip shark)

According to Paragraph 5 of the CMM, SC13 will review a detailed proposal, if submitted, for any biological sampling from oceanic whitetip sharks that are dead within longline or purse seine fisheries in the WCPO.

* + - 1. CMM 2012-04 (CMM for protection of whale sharks from purse seine fishing operations)

SC13 may consider additional mitigation measures based on CCMs’ reports through Annual Report Part 1 on any instances in which whale sharks have been encircled by the purse seine nets of their flagged vessels.

* + - 1. CMM 2013-08 (CMM for silky sharks)

According to Paragraph 5 of the CMM, SC13 will review a detailed proposal, if submitted, for any biological sampling from silky sharks that are dead within longline or purse seine fisheries in the WCPO.

* + - 1. CMM 2014-05 (CMM for sharks)

Paragraph 2 of this CMM stipulates that CCMs must develop a management plan for longline fisheries targeting sharks, including specific authorizations to fish and a TAC or other measure to limit the catch of shark to acceptable levels.

**EB-IP-06** ABNJ Report of the Expert Workshop on Shark Post-Release Mortality Tagging Studies, 24 – 27 January 2017

**EB-IP-07** Japan 2016 Implementation report of the Management Plan for Longline Fisheries Targeting Sharks

* + 1. Development of a comprehensive shark and ray measure

SC13 will consider how SC can best support the development of a comprehensive shark and ray measure, as envisaged by the WCPFC13 (Paragraph 507).

(WCPFC13 Summary Report)

*507. WCPFC13 requested that SC13 and TCC13, with support from the Secretariat, work towards the development of a comprehensive approach to shark and ray conservation and management with a view to adopting a new CMM at the Commission’s annual meeting in 2018. The new CMM should seek to i) unify the WCPFC’s existing shark CMMs; ii) take account of relevant national and international policies and measures; and iii) provide a framework for adopting new components as needs and datasets evolve. Elements that could be considered for the new CMM include:*

* *policies on full utilization/prohibition on finning;*
* *no retention policies;*
* *safe release and handling practices;*
* *gear mitigation, size limits or closures;*
* *management plans/catch limits;*
* *key species and their assessment schedules;*
* *species-specific limit reference points; and*
* *any data reporting requirements beyond those contained in “Scientific Data to be Provided to the Commission.”*

**EB-WP-06** Clarke, S. Development of a comprehensive shark conservation and management measure for the WCPFC

* + 1. Safe release guidelines

SC13 will continue to develop *New guidelines for the survival of sharks (other than whale sharks) to be released from longline or purse-seine gear* (Attachment G, SC11 Summary Report), based on any updated information and scientific evidence.

SC13 will also review, as appropriate, *Safe release guidelines for manta and mobula rays*, with a view to its adoption by WCPFC14 (WCPFC13 Summary Report para 550).

**EB-IP-08** Hutchinson, M. Developing best handling practice guidelines for the safe release of mantas and mobulids captured in commercial fisheries

**EB-IP-12** Jones E. and M. Francis. Protected rays – occurrence and development of mitigation methods in the New Zealand tuna purse seine fishery

* + 1. Shark Research Plan
    2. Progress of shark research plan

SC13 will review the progress of the Shark Research Plan and update the information as needed, noting that

(WCPFC13 Summary Report)

*550. Manta and Mobula rays shall be considered WCPFC key shark species for assessment and thus listed under the Shark Research Plan, noting that data gaps may preclude a traditional stock assessment approach.*

**EB-WP-07** SPC Review of shark data and modelling framework to support stock assessments (Project 78)

**EB-IP-09** SPC Progress on the WPCFC stock assessments and shark research plan (summary table)

* 1. **Seabirds**

As requested by CMM 2015-03, SC13 will review the progress of Project 68 (*Estimation of seabird mortality across the WCPO Convention Area*) and provide comments/recommendations as needed.

(CMM 2015-03)

*9. CCMs shall annually provide to the Commission, in Part 1 of their annual reports, all available information on interactions with seabirds reported or collected by observers, including mitigation used, observed and reported species specific seabird bycatch rates and numbers, to enable the Scientific Committee to estimate seabird mortality in all fisheries to which the Convention applies. (see Annex 2 for Part 1 reporting template guideline). Alternatively, statistically rigorous estimates of species-specific seabird interaction rates (for longline, interactions per 1,000 hooks) and total numbers should be reported.*

SC13 may also review any other updated information on seabird interactions with longline fisheries in the Convention Area in relation to the application of CMM 2015-03 (CMM for mitigating impacts of fishing on seabirds).

**EB-WP-08** Goad D. and I. Debski. Tori line designs and specifications for small pelagic longline vessels

**EB-IP-18** SPC A short note on the development of WCPFC seabird bycatch estimates for Project 68 (tentative)

**EB-IP-03** Clay, T. et al. Identifying Areas, Seasons and Fleets of Potential Highest Bycatch

Risk to South Georgia Albatrosses and Petrels.

**EB-IP-11** Walker K. and G. Elliott. Conservation concern for Antipodean wandering albatross

**EB-IP-13** Abraham E. et. al.. Assessment of the risk of commercial surface longline fisheries in the southern hemisphere to ACAP seabird species

**EB-IP-14** Maree B. Update on the seabird component of the Common Oceans Tuna Project – Seabird Bycatch Assessment Workshops

**EB-IP-17** Ochi, D., et. al. An at-sea trial of seabird mitigation gears including three weighted branch line specifications for tuna longline fisheries

* 1. **Sea turtles**

SC13 will review scientific aspects of the CMM 2008-03 (Conservation and management of sea turtles), and any other information related to additional or new mitigation measures for sea turtles, including the Joint Analysis of Sea Turtle Mitigation Effectiveness (<https://www.wcpfc.int/node/28673>).

**EB-WP-10** ABNJ Joint Analysis of Sea Turtle Mitigation Effectiveness – Final Report.

**EB-IP-01** Gilman, E. and H-W. Huang. Review of effects of pelagic longline hook and bait type on sea turtle catch rate, anatomical hooking position and at-vessel mortality rate

* 1. **Data exchange**

SC13 will review any update on Bycatch Data Exchange Protocol if available. Launch of the new website for the Bycatch Management Information System on the WCPFC website (<https://www.wcpfc.int/bycatch-management>) will be introduced as needed.

**EB-WP-09** SPC The redevelopment of the Bycatch Management Information System and future work including integrating regional bycatch data summaries

**EB-IP-15** SPC Bycatch data exchange protocol – Summary tables

* 1. **Other issues**

SC13 will consider other papers that are not related to any specific items on the existing agenda but are useful to the work of the Commission.

**EB-IP-04** De la Cruz W. S et. Al. Effects of Ringnet and Purse Seine Net Depth Reduction on the Catch of Bigeye Tuna (Thunnus obesus).

**ECOSYSTEM AND BYCATCH MITIGATION THEME PAPERS**

|  |  |  |
| --- | --- | --- |
| ***EB THEME – Working Papers*** | | ***Agenda***  ***Item*** |
| **EB-WP-01** | Lehodey et al. Modelling the impact of climate change including ocean acidification on Pacific yellowfin tuna. | 6.1.1 |
| **EB-WP-02** | SPC Review of research into drifting FAD designs to reduce bycatch entanglement and bigeye/yellowfin interactions | 6.1.3.1 |
| **EB-WP-03** | Lee, C-W et. al.Prediction of shooting trajectory of purse seine fishing | 6.1.3.1 |
| **EB-WP-04** | Lopez et. al.Initiatives to reduce tropical tuna FAD fishery ecological impacts: from traditional to non-entangling and biodegradable FADs | 6.1.3.1 |
| **EB-WP-05** | SPC Project proposals related to purse seine FAD use within the WCPO, as requested by the WCPFC FAD Intersessional Working Group | 6.1.3.2 |
| **EB-WP-06** | Clarke, S. Development of a comprehensive shark conservation and management measure for the WCPFC | 6.2.2 |
| **EB-WP-07** | SPC Review of shark data and modelling framework to support stock assessments (Project 78) | 6.2.4 |
| **EB-WP-08** | Goad D. and I. Debski. Tori line designs and specifications for small pelagic longline vessels | 6.3 |
| **EB-WP-09** | SPC The redevelopment of the Bycatch Management Information System and future work including integrating regional bycatch data summaries | 6.5 |
| **EB-WP-10** | ABNJ Joint Analysis of Sea Turtle Mitigation Effectiveness – Final Report. | 6.4 |
| ***EB THEME – Information Papers*** | |  |
| **EB-IP-01** | Gilman, E. and H-W. Huang. Review of effects of pelagic longline hook and bait type on sea turtle catch rate, anatomical hooking position and at-vessel mortality rate | 6.4 |
| **EB-IP-02** | Gilman, E. et.al. Ecological data from observer programmes underpin ecosystem-based ﬁsheries management | 6.1.2 |
| **EB-IP-03** | Clay, T. et al. Identifying Areas, Seasons and Fleets of Potential Highest Bycatch Risk to South Georgia Albatrosses and Petrels. | 6.3 |
| **EB-IP-04** | De la Cruz W. S et. Al. Effects of Ringnet and Purse Seine Net Depth Reduction on the Catch of Bigeye Tuna (Thunnus obesus). | 6.6 |
| **EB-IP-05** | Wang et. al. Comparison of condition factor between FADs-associated and unassociated schools of skipjack tuna Katsuwonus pelamis on the Western and Central Pacific Ocean | 6.1.3.1 |
| **EB-IP-06** | ABNJ Report of the Expert Workshop on Shark Post-Release Mortality Tagging Studies, 24 – 27 January 2017 | 6.2.1.5 |
| **EB-IP-07** | Japan 2016 Implementation report of the Management Plan for Longline Fisheries Targeting Sharks | 6.2.1.5 |
| **EB-IP-08** | Hutchinson, M. Developing best handling practice guidelines for the safe release of mantas and mobulids captured in commercial fisheries | 6.2.3 |
| **EB-IP-09** | SPC Progress on the WPCFC stock assessments and shark research plan (summary table) | 6.2.4 |
| **EB-IP-10** | FAO.Report of the joint meeting of tuna RFMOs on the implementation of the ecosystem approach to fisheries management | 6.1.2 |
| **EB-IP-11** | Walker K. and G. Elliott. Conservation concern for Antipodean wandering albatross | 6.3 |
| **EB-IP-12** | Jones E. and M. Francis. Protected rays – occurrence and development of mitigation methods in the New Zealand tuna purse seine fishery | 6.2.3 |
| **EB-IP-13** | Abraham E. et. al.. Assessment of the risk of commercial surface longline fisheries in the southern hemisphere to ACAP seabird species | 6.3 |
| **EB-IP-14** | Maree B. Update on the seabird component of the Common Oceans Tuna Project – Seabird Bycatch Assessment Workshops | 6.3 |
| **EB-IP-15** | SPC Bycatch data exchange protocol – Summary tables | 6.4 |
| **EB-IP-16** | Wang et. al. An evaluation of differences in habitat quality between FADs-associated and unassociated schools of skipjack tuna Katsuwonus pelamis using quantile regressions. | 6.1.3.1 |
| **EB-IP-17** | Ochi, D., et. al. An at-sea trial of seabird mitigation gears including three weighted branch line specifications for tuna longline fisheries | 6.3 |
| **EB-IP-18** | SPC A short note on the development of WCPFC seabird bycatch estimates for Project 68 | 6.3 |

1. Pacific bluefin tuna [↑](#footnote-ref-1)
2. North Pacific albacore [↑](#footnote-ref-2)
3. North Pacific swordfish [↑](#footnote-ref-3)