

 **SCIENTIFIC COMMITTEE**

**TENTH REGULAR SESSION**

Majuro, Republic of the Marshall Islands

6-14 August 2014

**PROVISIONAL THEME AGENDA**

**(Rev.1 – 04Aug2014)**

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

SPC-OFP will present the data gaps paper, and SC10 will consider and recommend actions to address any identified data gaps in the data holdings of the Commission.

* 1. **ST-WP-01** – Williams, P. Scientific data available to the Western and Central Pacific Fisheries Commission

***\*\*\* Related Information Papers (for reference only)***

***These papers provide more information on data provided for the work of the Commission.***

1. **ST-IP-01 -** Williams, P. Estimates of annual catches in the WCPFC Statistical Area.
2. **ST-IP-04** - Williams, P. Major changes in data available for the 2014 tropical tuna assessments.
3. **ST-IP-07** - Okamoto, H. Overview of size data for bigeye tuna caught by Japanese longline fishery in the Pacific Ocean

SC10 will consider Para 46 (Other commercial fisheries) of the CMM 2013-01 and recommend which fisheries should be included and what information is needed to develop appropriate management measures for those fisheries.

The “Other Commercial Fisheries” table prepared and presented at SC9 was updated according recommendations at SC9 and then passed on to TCC9, then WCPFC10 which accepted this table (WCPFC10 record, p.183), so no further action from SC10 required.

* + 1. ***Species composition of purse-seine catches***

SC10 will review the research outputs of Project 60 (Collection and evaluation of purse-seine species composition data) and provide key findings and further recommendations if any to the Commission.

* 1. **ST-WP-02** - Lawson, T. Comparison of the species composition of purse-seine catches determined from logsheets, observer data, market data, cannery receipts and port sampling data.
	2. **ST-WP-04** - Hare, S. R., S. J. Harley and J. Hampton. On the potential of identifying fad‐association in purse seine catches on the basis of catch sampling.

***\*\*\* Related Information Papers (for reference only)***

1. **ST-IP-02 -** Lawson, T. Final Report on Project 60: Collection and evaluation of purse seine species composition
2. **ST-IP-06** Satoh, K. and H. Okamoto. Preliminary analysis for accuracy of catch amount by species caught by purse seine comparing observer data and landing data.
	* 1. ***Data issues with the ISC***

SC10 will review the progress of data reconciliation of the Commission and ISC data holdings for northern stocks to identify and address data gaps.

The WCFPC-ISC data reconciliation process is now a regular annual activity and nothing to report at this stage.

* 1. **Regional Observer Programme**

SC10 will consider issues, if any, related with scientific data collected or to be collected and data gaps from regional observer programme.

* 1. **ST-WP-05 -** Ramiscal, R. V., A. C. Dickson, M. Demo-os, I. Tanangonan, and J. Jara. Group Seine Operations of Philippine Flagged Vessels in High Seas Pocket 1 (HSP1)
	2. **ST-WP-06 -** Ramiscal, R. V., A. C. Dickson, DFT, W. S. de la Cruz, I Tanangonan, M. Demo-os, J. A. Jara and J. O. Dickson DFT, Analysis of Purse Seine/Ring Net Fishing Operations in Philippine EEZ
	3. **ST-IP-10** - Dai, X. and F. Wu. Report of scientific observer programme from China longline fishery in the Pacific Ocean in 2013-2014

***\*\*\* Related Information Papers (for reference only)***

1. **ST-IP-03 -** Williams, P. I. Tuiloma and C. Falasi. Status of observer data management
2. **ST-IP-09 -** Abascal, F., S. Fukofuka, C. Falasi, P. Sharples and P. Williams. Preliminary analysis of the Regional Observer Programme data on FAD design
	1. **Electronic monitoring and electronic reporting**

The Electronic Monitoring and Electronic Reporting Workshop was held in Honiara, Solomon Islands, from 31 March – 1 April; the workshop report is posted on SC10 website (SC10-GN-IP-03).

The outcomes of the workshop will be briefly introduced. SC10 may provide comments/recommendations as required, for example, a recommendation to take this to TCC10 and WCFPC11. Some recent developments with initiatives in E-Monitoring and E-Reporting in the region will also be presented.

* 1. **GN-IP-03 -** WCFPC. E-MONITORING AND E-REPORTING WORKSHOP – Chair’s Report. (April 2014)
	2. **ST-WP-03 -** Hosken, M. et al. Preliminary Report on Solomon Islands Longline E-Monitoring Project.
	3. **ST-WP-07** - Karis, D., P. Lens, B. Kumasi and M.Oates. The Use of Electronic Reporting for Regional Purse Seine Log Book and Regional Observer Work Book Data

***\*\*\* Related Information Papers (for reference only)***

1. **ST-IP-05 -** Hosken, M., P. Williams & E. Schneiter. An update on E-reporting and E-monitoring initiatives in WCPFC fisheries
2. **ST-IP-08 -** Ramiscal R. V. A. C. Dickson, M. Demo-os, I Tanangonan and J. A. Jara. Pilot Test of MARLIN(Electronic Logsheet) Operation in High Seas Pocket 1

**DATA AND STATISTICS THEME**

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| ***ST THEME – Working Papers*** | ***AGENDA*** |
| **ST-WP-01** | Williams, P. Scientific data available to the Western and Central Pacific Fisheries Commission. | 3.1.1 |
| **ST-WP-02** | Lawson, T. Comparison of the species composition of purse-seine catches determined from logsheets, observer data, market data, cannery receipts and port sampling data. | 3.1.2 |
| **ST-WP-03** | Hosken, M. et al. Preliminary Report on Solomon Islands Longline E-Monitoring Project. | 3.3 |
| **ST-WP-04** | Hare, S. R., S. J. Harley and J. Hampton. On the potential of identifying fad‐association in purse seine catches on the basis of catch sampling Rev 1 (18 July 2014) | 3.1.2 |
| **ST-WP-05** | Ramiscal, R. V., A. C. Dickson, M. Demo-os, I. Tanangonan, and J. Jara. Group Seine Operations of Philippine Flagged Vessels in High Seas Pocket 1 (HSP1) | 3.2 |
| **ST-WP-06** | Ramiscal, R. V., A. C. Dickson, DFT, W. S. de la Cruz, I Tanangonan, M. Demo-os, J. A. Jara and J. O. Dickson DFT, Analysis of Purse Seine/Ring Net Fishing Operations in Philippine EEZ. | 3.2 |
| **ST-WP-07** | Karis, D., P. Lens, B. Kumasi and M.Oates. The Use of Electronic Reporting for Regional Purse Seine Log Book and Regional Observer Work Book Data | 3.3 |
| **GN-IP-03** | WCFPC. E-MONITORING AND E-REPORTING WORKSHOP – Chair’s Report. (April 2014) | 3.3 |
| ***THEME – Information Papers*** | ***AGENDA*** |
| **ST-IP-01** | Williams, P. Estimates of annual catches in the WCPFC Statistical Area.  | 3.1.1 |
| **ST-IP-02** | Lawson, T. Final Report on Project 60: Collection and evaluation of purse seine species composition | 3.1.2 |
| **ST-IP-03** | Williams, P. I. Tuiloma and C. Falasi Status of observer data management | 3.2 |
| **ST-IP-04** | Williams, P. Major changes in data available for the 2014 tropical tuna assessments | 3.1.1 |
| **ST-IP-05** | Hosken, M., P. Williams & E. Schneiter. An update on E-reporting and E-monitoring initiatives in WCPFC fisheries | 3.3 |
| **ST-IP-06** | Satoh, K. and H. Okamoto. Preliminary analysis for accuracy of catch amount by species caught by purse seine comparing observer data and landing data | 3.1.2 |
| **ST-IP-07** | Okamoto, H. Overview of size data for bigeye tuna caught by Japanese longline fishery in the Pacific Ocean | 3.1.1 |
| **ST-IP-08** | Ramiscal R. V. A. C. Dickson, M. Demo-os, I Tanangonan and J. A. Jara. Pilot Test of MARLIN(Electronic Logsheet) Operation in High Seas Pocket 1 | 3.3 |
| **ST-IP-09** | Abascal, F., S. Fukofuka, C. Falasi, P. Sharples and P. Williams. Preliminary analysis of the Regional Observer Programme data on FAD design | 3.2 |
| **ST-IP-10** | Dai, X. and F. Wu. Report of scientific observer programme from China longline fishery in the Pacific Ocean in 2013-2014 | 3.2 |

**AGENDA ITEM 4: STOCK ASSESSMENT THEME**

* 1. **WCPO tunas**
		1. **WCPO bigeye tuna (*Thunnus obesus*)**
			1. Review of research and information
1. Progress on Project 70 (Improvement of stock assessments in line with recommendations from the report of the Peer Review for the 2011 Bigeye Tuna Stock Assessment)

**SA-WP-02** SPC-OFP. Implementing recommendations from the bigeye tuna assessment review.

1. Progress on Project 69 (Improvement of MultiFan Catch at Length)
2. Progress report on Project 35 (Refinement of bigeye parameters Pacific-wide)

 *SA-IP-15* will be referred to if needed,

1. Review of 2014 bigeye tuna stock assessment

**SA-WP-01** Harley, S., N. Davies, J. Hampton, and S. McKechnie. Stock assessment of bigeye tuna in the western and central Pacific Ocean.

**SA-WP-06** Pilling, G. M., S. J. Harley, N. Davies, J. Rice and J. Hampton. Status quo stochastic projections for bigeye, skipjack, and yellowfin tunas

*SA-IP-01, 02, 03, 04, 05, 06, 07, 08, 10, 11* Will be referred to if needed

* + - 1. Provision of scientific information

SC10 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
	* 1. **WCPO yellowfin tuna (*Thunnus albacares*)**
			1. Review of research and information

Review of 2014 yellowfin tuna stock assessment

**SA-WP-03** Pilling, G., T, Usu, B. Kumasi, S. J. Harley and J. Hampton. Purse seine CPUE for skipjack and yellowfin in the PNG purse seine fishery

**SA-WP-09** Bigelow, K., E. Garvilles and N. Barut. Relative abundance of skipjack and yellowfin tuna in the Moro Gulf (Philippine Region 12)

**SA-WP-04** Davies, N. S. Harley, J. Hampton and S. McKechnie. Stock assessment of yellowfin tuna in the western and central Pacific Ocean

**SA-WP-06** Pilling, G. M., S. J. Harley, N. Davies, J. Rice and J. Hampton. Status quo stochastic projections for bigeye, skipjack, and yellowfin tunas

*SA-IP-01, 02, 03, 04, 05, 06, 07, 08, 10, 11* Will be referred to if needed

* + - 1. Provision of scientific information

SC10 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

Review of 2014 skipjack tuna stock assessment

**SA-WP-03** Pilling, G., T, Usu, B. Kumasi, S. J. Harley and J. Hampton. Purse seine CPUE for skipjack and yellowfin in the PNG purse seine fishery

**SA-WP-09** Bigelow, K., E. Garvilles and N. Barut. Relative abundance of skipjack and yellowfin tuna in the Moro Gulf (Philippine Region 12)

**SA-WP-05** Rice, J., S. Harley, N. Davies and J. Hampton. Stock assessment of skipjack tuna in the western and central Pacific Ocean.

**SA-WP-06** Pilling, G. M., S. J. Harley, N. Davies, J. Rice and J. Hampton. Status quo stochastic projections for bigeye, skipjack, and yellowfin tunas

**SA-WP-10** Kiyofuji, H., H. Ashida, M. Sugimoto, Y. Horii, and H. Okamoto. Abundance of skipjack migrating to the Pacific coastal water of Japan indicated by Japanese coastal troll and pole-and-line CPUE.

*SA-IP-01, 02, 06, 07, 08, 10, 11, 12, 16* will be referred if needed

* + - 1. Provision of scientific information

SC10 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

**SA-WP-07** Pilling, G., S. Harley, P. Williams, J. Hampton and WCPFC Secretariat. Recent trends in the south Pacific albacore longline fishery

* + - 1. Provision of scientific information

No stock assessment

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

**GN-IP-02** ISC. Report of the 14th Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. The ISC Chair will be invited to brief SC10 on the activities of the ISC since SC9, including ISC’s 2014 stock assessments and future plans.

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

**SA-WP-12** ISC ALB-WG. Stock Assessment of Albacore Tuna in the North Pacific Ocean in 2014. An updated stock assessment was conducted in 2014. The ISC Chair (or his designate) will provide updated information for NP swordfish.

* + - 1. Provision of scientific information

 SC10 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

**SA-WP-11** ISC PBT-WG. Stock Assessment of Bluefin tuna in the North Pacific Ocean in 2014. An updated stock assessment was conducted in 2014. The ISC Chair (or his designate) will provide updated information for NP swordfish.

* + - 1. Provision of scientific information

SC10 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

**SA-WP-13** ISC Billfish-WG. North Pacific Swordfish (*Xiphias gladius*) Stock Assessment in 2014. An updated stock assessment was conducted in 2014. The ISC Chair (or his designate) will provide updated information for NP swordfish.

* + - 1. Provision of scientific information

SC10 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications
	1. **WCPO sharks**
		1. **Oceanic whitetip shark (*Carcharhinus longimanus*)**
			1. Review of research and information
			2. Provision of scientific information

No stock assessment. SC10 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
			2. Provision of scientific information

No stock assessment. SC10 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
			2. Provision of scientific information

No stock assessment. SC10 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 2014 North Pacific blue shark stock assessment

**SA-WP-08** Rice et al. Stock assessment of blue shark in the north Pacific Ocean using stock synthesis

**SA-WP-14** ISC Shark WG. Stock Assessment and Future Projections of Blue Shark in the North Pacific Ocean. An updated stock assessment was conducted in 2014. The ISC Chair (or his designate) will provide updated information for NP blue shark.

*SA-IP-13, 14* Will be referred to if needed

1. Evaluation of North Pacific blue shark as a northern stock

No document. As requested by WCPFC10

* + - 1. Provision of scientific information

ISC/SPC-OFP conducted a stock assessment for NP blue shark in 2014. SC10 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

*SA-IP-17* will be referred if needed

* + - 1. Provision of scientific information

No stock assessment. SC10 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
			2. Provision of scientific information

No stock assessment. SC10 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
			2. Provision of scientific information

No stock assessment. SC10 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
			2. Provision of scientific information

No stock assessment. SC10 will provide agreed text for the following:

1. Status and trends
2. Management advice and implications

**STOCK ASSESSMENT THEME**

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| ***SA THEME – Working Papers*** | ***Agenda*** |
| **SA-WP-01** | Harley, S., N. Davies, J. Hampton, and S. McKechnie. Stock assessment of bigeye tuna in the western and central Pacific Ocean | 4.1.1.1.d |
| **SA-WP-02** | SPC-OFP. Implementing recommendations from the bigeye tuna assessment review | 4.1.1.1.a |
| **SA-WP-03** | Pilling, G., T, Usu, B. Kumasi, S. J. Harley and J. Hampton. Purse seine CPUE for skipjack and yellowfin in the PNG purse seine fishery | 4.1.2.14.1.3.1 |
| **SA-WP-04** | Davies, N. S. Harley, J. Hampton and S. McKechnie. Stock assessment of yellowfin tuna in the western and central Pacific Ocean | 4.1.2.1 |
| **SA-WP-05** | Rice, J., S. Harley, N. Davies and J. Hampton. Stock assessment of skipjack tuna in the western and central Pacific Ocean. | 4.1.3.1 |
| **SA-WP-06** | Pilling, G. M., S. J. Harley, N. Davies, J. Rice and J. Hampton. Status quo stochastic projections for bigeye, skipjack, and yellowfin tunas | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-WP-07** | Pilling, G., S. Harley, P. Williams, J. Hampton and WCPFC Secretariat. Recent trends in the south Pacific albacore longline fishery | 4.1.4.1 |
| **SA-WP-07a** | Pilling, G. Excel: SPA vessel number latitude flag | 4.1.4.1 |
| **SA-WP-07b** | Pilling, G. Excel: SPA catch proportion latitude flag | 4.1.4.1 |
| **SA-WP-08** | Rice, J., S. Harley and M. Kai. Stock assessment of blue shark in the north Pacific Ocean using stock synthesis | 4.3.4.1 |
| **SA-WP-09** | Bigelow, K., E. Garvilles and N. Barut. Relative abundance of skipjack and yellowfin tuna in the Moro Gulf (Philippine Region 12) | 4.1.2.14.1.3.1 |
| **SA-WP-10** | Kiyofuji, H., H. Ashida, M. Sugimoto, Y. Horii, and H. Okamoto. Abundance of skipjack migrating to the Pacific coastal water of Japan indicated by Japanese coastal troll and pole-and-line CPUE. | 4.1.3.1 |
| **SA-WP-11** | Stock Assessment of Bluefin Tuna in the Pacific Ocean in 2014ISC Pacific Bluefin Tuna Working Group | 4.2.2.1 |
| **SA-WP-12** | Stock Assessment of Albacore Tuna in the North Pacific Ocean in 2014ISC Albacore Working Group | 4.2.1.1 |
| **SA-WP-13** | [North Pacific Swordfish (Xipiaus gladius) Stock Assessment in 2014](http://www.wcpfc.int/node/19203)ISC Billfish Working Group | 4.2.3.1 |
| **SA-WP-14** | Stock Assessment and Future Projections of Blue Shark in the North Pacific Ocean ISC Shark Working Group | 4.3.4.1 |
| ***SA THEME – Information Papers*** | ***Agenda*** |
| **SA-IP-01** | Harley, S., N. Davies, J. Rice, S. McKechnie and J. Hampton. Summary of major changes in the 2014 tropical tuna assessments | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-02** | McKechnie, S., S. Harley, N. Davies, J. Rice, J. Hampton, and A Berger. Basis for regional structures used in the 2014 tropical tuna assessments, including regional weights | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-03** | McKechnie, S., S. Harley, S-K. Chang, H-I. Liu and T-L. Yuan. Analysis of longline catch per unit effort data for bigeye and yellowfin tunas | 4.1.1.1.d4.1.2.1 |
| **SA-IP-04** | McKechnie, S. Analysis of longline size frequency data for bigeye and yellowfin tunas in the WCPO | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-05** | Abascal, F., T. Lawson and P. Williams. Analysis of tropical purse seine length data for skipjack, bigeye and yellowfin tunas | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-06** | Berger, A. M., S. McKechnie, F. Abascal, B. Kumasi, T. Usu and S. J. Nicol. Analysis of tagging data for the 2014 tropical tuna assessments: data quality rules, tagger effects, and reporting rates | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-07** | SPC-OFP. Report from the 2014 pre-assessment workshop, Noumea, April 2014 | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-08** | Davies, N. Recent developments in the MULTIFAN-CL stock assessment software | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-09** | Placeholder |  |
| **SA-IP-10** | Hoyle, S. D., Langley, A. D. and R. A. Campbell. Recommended approaches for standardizing CPUE data from pelagic fisheries | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-11** | Hoyle, S. D., Langley, A. D. and R. A. Campbell. Guidelines for presenting CPUE indices of abundance for WCPFC stock assessments. | 4.1.1.1.d4.1.2.14.1.3.1 |
| **SA-IP-12** | Okamoto, H., H. Kiyofuji, Y. Horii, and H. Ashida. Standardized skipjack CPUE of coastal troll fishery around Hachijo-Island from 1996 to 2013. | 4.1.3.1 |
| **SA-IP-13** | Rice J. and Y. Semba. Age and Sex Specific Natural Mortality of the Blue Shark (Prionace glauca) in the North Pacific Ocean | 4.3.4.1 |
| **SA-IP-14** | Rice, J. and S. Harley. Standardization of blue shark catch per unit effort in the North Pacific Ocean based on deepset longline observer data for use as an index of abundance | 4.3.4.1 |
| **SA-IP-15** | Nicol, S., B. Muller, N. Tavaga, C. Golu, M. Afeleti, B. Phillips, T. Usu, K.Sisior, C.Sanchez, F. Roupsard and M. Hosken. Project 35: Bigeye tuna age and reproductive biology progress report | 4.1.1.1.c |
| **SA-IP-16** | Kiyofuji, H. and H. Okamoto. An update of the standardized abundance index of skipjack by the Japanese pole-and-line fisheries in the WCPO. | 4.1.3.1 |
| **SA-IP-17** | Farley, J., N. Clear, D. Kolody, R. Hillary and J. Young Determination of southwest Pacific swordfish growth and maturity (UB 2014/15 project) | 4.4.1.1 |

**DRAFT AGENDA ITEM 5 MANAGEMENT ISSUES THEME**

* 1. **LIMIT REFERENCE POINTS FOR THE WCPFC**
		1. Review of Project 57 (Research related to the development of limit reference points)

As recommended in Paragraphs 357 – 363 of the SC9 Summary Report and following decisions made by WCPFC10 on this issue, additional analyses will be undertaken and considered by SC10 to provide recommendations with sufficient detail and a format easily understood by managers, and the implications of accepting various alternative proposals. Identified areas of analyses, using the most current assessments, include:

1. For bigeye, yellowfin, skipjack, and south Pacific albacore tunas: undertake stochastic projections using one or more model runs (as recommended by SC10) at a range of effort multipliers that give a range of risks (e.g., 5%, 10%, 15%, 20%, etc.) of exceeding the agreed limit reference points. Calculation of risk could be across single or multiple model runs as appropriate.
2. Key quantities from the analysis will include the average biomass (or the projections) that is associated with a given risk of exceeding the limit reference point to emphasize the link between limits, risks, and inform discussions on minimum standards for target reference points.
3. Other quantities from the analyses could include comparison of the biomass levels above to MSY-related quantities, vulnerable biomass (proxy for CPUE), and fishing mortality rates.

SC10 will also provide advice on the appropriateness of the range of risk levels examined, consistent with the UN Fish Stocks Agreement that the ‘risk of exceeding limit reference points is very low’.

Papers

**MI-WP-01**: Evaluation of risks of exceeding limit reference points for south Pacific albacore, bigeye, yellowfin and skipjack tunas with implications for target reference points: a case study using south Pacific albacore.

* + 1. Desktop analysis to develop LRPs for elasmobranchs

SC10 will review the report on identifying appropriate LRPs for elasmobranchs and provide advice to the Commission.

Papers

**MI-WP-07**: Development of limit reference points for elasmobranchs.

* 1. **DEVELOPMENT OF TARGET REFERENCE POINTS (TRPs) AND HARVEST CONTROL RULES (HCRs) FOR THE WCPFC**
		1. The equatorial skipjack fishery

Para 151 of WCPFC10 Summary Report stated:

WCPFC10 agreed that the Scientific Services Provider provide the following to MOW3 with progress reported to SC10 in 2014 with a view to informing the Commission’s consideration and adoption of a TRP and HCR at WCPFC 11:

1. Evaluate WCPO skipjack stock status against candidate target reference points of 40%, 50% and 60% of unfished spawning stock size.
2. Apply stock-wide harvest control rules such as those present in MOW2-WP/03 and examine robustness relative to the new assessment and major sources of uncertainty.
3. Include performance indicators relating to fish sizes, impacts on yellowfin tuna and bigeye tuna, and examine the acceptable magnitude of changes in fishing effort.

SC10 will review the information available on this topic and provide advice for the Commission’s consideration.

Papers

**MI-WP-09:** Assessing a candidate target reference point for skipjack tuna consistent with PNA management objectives

**MI-WP-02:** Management strategies (objectives, indicators, reference points and harvest control rules): the equatorial skipjack purse seine fishery as an example.

* + 1. Other fisheries managed by the WCPFC

SC10 will review the information available on identifying management objectives and developing appropriate TRPs and HCRs for other fisheries managed by the WCPFC and provide advice for the Commission’s consideration.

Papers

**MI-WP-03:** Potential target reference points that consider fisheries across the extent of the stock: yellowfin fisheries as an example.

**MI-WP-04:** Potential target reference points that consider profitability of fleets: south Pacific albacore longlining as an example.

**MI-WP-06:** Relationship between abundance and range size in longline target species.

**MI-IP-02:** Representing uncertainty, risk and performance indicators against fishery management objectives and reference points

**MI-IP-03:** A review of the provision of scientific advice in the Western and Central Pacific Fisheries Commission

**MI-IP-04:** A bio-economic evaluation of the Western Central Pacific Ocean tuna

**MI-IP-05:** Investment dynamics of the western central Pacific Ocean US purse seine

* + 1. Development of a Conservation and Management Measure

SC10 will review the draft CMM being proposed by Australia and provide advice for the Commission’s consideration.

Papers

**MI-WP-08:** Draft conservation and management measure on establishing a harvest strategy for key tuna species in the WCPO

* 1. **IMPLEMENTATION OF CMM 2013-01**

As requested in Para 29 of CMM 2013-01, SC10 will provide advice to the Commission on the relative impact on fishing mortality for yellowfin, of FAD set measures, and any increases of yellowfin purse seine catch in unassociated schools.

Papers

**MI-WP-05**: Relative impacts of FAD and free school fishing on yellowfin tuna.

**MI-IP-01**: Summary of CCM’s reporting on CMM 2013-01 for bigeye catch and FAD additional reduction

**MI-IP-06**: WCPFC Circular 2014-60:FAD marking and management.

**PAPERS FOR MANAGEMENT ISSUES THEME**

|  |  |  |
| --- | --- | --- |
| **Working Papers** | **Title** | **Authors** |
|  |  |  |
| MI-WP-01 | Evaluation of risks of exceeding limit reference points for south Pacific albacore, bigeye, yellowfin and skipjack tunas with implications for target reference points: a case study using south Pacific albacore |  G. Pilling, S. Harley, J. Hampton |
| MI-WP-02 | Management strategies (objectives, indicators, reference points and harvest control rules): the equatorial skipjack purse seine fishery as an example | C. Kirchner, A. Berger, G. Pilling, S. Harley |
| MI-WP-03 | Potential target reference points that consider fisheries across the extent of the stock: yellowfin fisheries as an example |  G. Pilling, S. Harley, L. Tremblay-Boyer |
| MI-WP-04 | Potential target reference points that consider profitability of fleets: south Pacific albacore longlining as an example | A. Berger, C. Reid, G. Pilling, R. Imo |
| MI-WP-05 | Relative impacts of FAD and free school fishing on yellowfin tuna | J. Hampton, G. Pilling |
| MI-WP-06 | Relationship between abundance and range size in longline target species | L. Tremblay-Boyer, S. Harley, G. Pilling  |
| MI-WP-07 | Development of limit reference points for elasmobranchs | S. Clarke, S.Hoyle |
| MI-WP-08 | Draft conservation and management measure on establishing a harvest strategy for key tuna species in the WCPO | Australia |
| MI-WP-09 | Assessing a candidate target reference point for skipjack tuna consistent with PNA management objectives | SPC\_OFP, PNA |
|  |  |  |
| **Information Papers** | **Title** | **Authors** |
| MI-IP-01 | Summary of CCM’s reporting on CMM 2013-01 for bigeye catch and FAD additional reduction  | Secretariat |
| MI-IP-02 | Representing uncertainty, risk and performance indicators against fishery management objectives and reference points | A. McDonald |
| MI-IP-03 | A review of the provision of scientific advice in the Western and Central Pacific Fisheries Commission | C. Wold, E. Kondo, E. Hamilton |
| MI-IP-04 | A bio-economic evaluation of the Western Central Pacific Ocean tuna | C. Kirchner |
| MI-IP-05 | Investment dynamics of the western central Pacific Ocean US purse seine | A. Tidd |
| MI-IP-06 | WCPFC Circular 2014-60: FAD marking and management | Secretariat |

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

**6.1.1 Review of research and information**

The Commission accepted four recommendations in Para 419 of the SC9 Summary Report, which include i) supporting BMIS; ii) supporting development of SEAPODYM; iii) members’ provision of fine-scale data to support SEAPODYM; and iv) an external review of the SEAPODYM model.

SC10 may consider any research related to fishery impacts on ecosystems, and further consider

specific steps as required to implement the SC’s recommendations endorsed by the Commission

above.

a) **EB-WP-02 -** Lehodey, P., I. Senina, O.Titaud, B.Calmettes, A. Conchon, A. Dragon, S. Nicol, S.Caillot, J. Hampton, and P. Williams. Project 62: SEAPODYM applications in WCPO Rev 1.

 ***\*\*\* Related Information papers (for reference only)***

a) **EB-IP-02** - Nicol, S. M. Dessert, T. Gorgues, O. Aumont, C. Menkes, and P. Lehodey. Project 62: Progress report on climate simulations

b)**EB-IP-03** - Caillot, S. and S. Nicol. Data query tool for SEAPODYM output

**6.2 Sharks**

**6.2.1 GEF ABNJ Shark and BMIS project**

SC10 will be briefed on the GEF ABNJ Shark and BMIS project, including the initial stage, and

how this might contribute to the shark work of the Commission.

a)**EB-WP-03** - Nicol, S. and S. Clarke. Annual WCPFC Report: Joint Tuna RFMO Bycatch Technical Working Group

**6.2.2 Shark Research Plan**

SC10 will review the progress of the Shark Research Plan, in particular, the achievements since

SC9 in 2013, including recommendations made in the progress report, and provide

recommendations to the Commission as required.

a)**EB-WP-04** - Brouwer, S. A progress report on the shark research plan

***\*\*\* Related Information papers (for reference only)***

a)**EB-IP-06** - Clarke, S. and S. Harley. A Proposal for a Research Plan to Determine the Status of the Key Shark Species (WCPFC-SC6-2010/EB-WP-01)

SC9 requested that the scientific services provider conduct analysis of potential mitigation

options for silky and oceanic whitetip sharks. SC10 will review the analysis and provide

recommendations on the most appropriate options for the Commission’s consideration.

a)**EB-WP-01** - Caneco, B. [1], C. Donovan [1], and S. Harley [2]. Analysis of WCPO longline observer data to determine factors impacting catchability and condition on retrieval of oceanic whitetip, silky, blue and thesher sharks and Supplementary Information (EB-WP-01a)

6.2.3 Review of conservation and management measures for sharks

Recognizing the considerable body of work on shark catch mitigation, including non-retention

and live-release, deeper hook deployment on longliners (for epipelagic species), use of circle

hooks, and prohibition on targeting, finning and wire leaders, SC10 will consider investigations

into the effectiveness of mitigation measures for sharks.

a) **EB-WP-05**- Patterson, H., S. Hansen and J. Larcombe. A review of shark bycatch mitigation in tuna longline fisheries

***\*\*\* Related Information papers (for reference only)***

a) **EB-IP-04** - Clarke, S., M. Sato, C. Small, B. Sullivan, Y. Inoue and D. Ochi. Bycatch in Longline Fisheries for Tuna and Tuna-like Species: a Global Review of Status and Mitigation Measures

b)**EB-IP-08** - New Zealand National Plan of Action for the Conservation and Management of Sharks 2013

c)**EB-IP-11** - Curran, D. Shark Catch in Pelagic Longline Fisheries: A Review of Mitigation Measures

1. CMM 2010-07 (CMM for Sharks)

SC10 will review CMM for Sharks, especially Paras 4, 8, and 13 with reference to data

provision, fin to carcass ratios, and the need for a revised or new CMM.

SC10 may consider the development of an integrated and comprehensive shark measure

to reduce the catch of overexploited shark species (Para 465, SC9 Summary Report)

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

According to Para 5 of the CMM, SC10 will review a detailed proposal, if submitted, for

any biological sampling from oceanic whitetip sharks caught in the Convention Area that

are dead on haulback in the WCPO.

SC10 may provide additional scientific advice to the Commission for the amendment of

this CMM.

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

SC10 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)

This measure was effective from 1 July 2014.

According to Para 5 of the CMM, SC10 will review a detailed proposal, if submitted, for

any biological sampling from silky sharks caught in the Convention Area that are dead on

haulback in the WCPO.

According to Para 6 of the CMM, CCM’s and the SC shall continue work on bycatch

mitigation measures and live release guidelines to avoid the initial catch of this species

wherever possible, and maximize the number of incidentally caught individuals that can

be released alive.

1. Safe release guidelines
2. Guidelines for the safe release of encircled animals, including whale sharks

As recommended by SC9 (Para 465.b), SC10 will continue to develop, through

an Informal Small Group, the best practice guidelines for safe release of

encircled animals, including whale shark. Science-based guidelines may include

field tests to assess handling, post-release mortality, practicality and

effectiveness (Para 363, WCPFC9 Summary Report).

1. Development of (new) safe release guidelines to maximize shark survival

As recommended by SC9 (Para 465.b), SC10 may consider the development of

safe release guidelines to maximize shark survival for species of concern, such as

for oceanic whitetip and silky sharks for longline and purse-seine fisheries.

**6.3 Seabirds**

SC10 may review relevant available research findings, including seabird bycatch rates for

longline vessels < 24m and ≥ 24m and assessment on the utility of electronic monitoring, if

available (Para 489, SC9 Summary Report).

a) **EB-WP-06** - Hsiang-Wen Huang. Seabirds and sea turtles bycatch of Taiwanese tuna longline fleets in the Pacific Ocean

b)**EB-WP-07** - Ochi D, N. Katsumata, T. Kitamura, and H.Minami. Summary of utilization of mitigation techniques to reduce seabird bycatch in Japanese small-sized longline vessels

***\*\*\* Related Information papers (for reference only)***

a)**EB-IP-01** - Gilman, E., M. Chaloupka, B. Wiedoff and J. Willson. Mitigating seabird bycatch during hauling by pelagic longline vessels.

b)**EB-IP-10** - Bigelow, K. Seabird interaction rates in the Hawaii‐based shallow and deep‐set longline fisheries by vessel size as estimated from observer data (2004–2013)

**6.4 Sea turtles**

SC10 will review scientific aspects of the CMM 2008-03, and consider additional or new

mitigation measures of sea turtles if available.

**6.5 Other species and issues**

6.5.1 Bycatch mitigation

SC10 will review research, if available, on bycatch mitigation efforts, including i) mitigation of

small bigeye and yellowfin tunas; ii) avoidance or selective release of bycatch species from the

net to maximize the chances of survival of released animals; and iii) investigations that

scientifically verify the post-release condition of bycatch species using pop-up archival tags and

other technology

a)**EB-WP-08** - Sancristobal, I. J. Filmalter, F. Forget, G. Boyra, G. Moreno, J. Muir, L. Dagorn and V. Restrepo. International Seafood Sustainability Foundation’s Third Bycatch Mitigation Research Cruise in the WCPO

b)**EB-WP-09** - Ariz Tellaria, F. J. Catch, Effort, and eCOsystem impacts of FAD-fishing (CECOFAD) (ppt-pdf)

***\*\*\* Related Information papers (for reference only)***

a)**EB-IP-09** - Watson, J. T. and K. A. Bigelow. Trade-offs among Catch, Bycatch, and Landed Value in the American Samoa Longline Fishery

6.5.2 Food security issues with Bycatch

According to Para 457 in the SC7 Summary Report on the importance of food security issues, the

science services provider presented SC8-EB-WP-18 (*Estimation of catches and fate of edible*

*bycatch species taken in the equatorial purse seine fishery*) and SC9-EB-IP-02 (*Estimation of*

*catches and condition of edible bycatch species taken in the equatorial purse seine fishery*).

As requested by SC8 (Para 450, SC8 Report), SC10 may review updates on this item, if available,

and provide comments and recommendations to the Commission on food security issues linked to

Bycatch.

6.5.3 Other issues

Other ecosystem and bycatch related researches that are related to the work of the Commission

will be covered under this item.

***\*\*\* Related Information papers (for reference only)***

a)**EB-IP-12a** - Lack, M., G. Sant., M. Burgener and N. Okes. Development of a Rapid Management-Risk Assessment Method for Fish Species through its Application to Sharks

b)**EB-IP-12b** - Annex to EB-IP-12a

c)**EB-IP-05** - Clarke, S. Issues for t-RFMOs in relation to the listing of shark and ray species by the Convention on International Trade in Endangered Species (CITES)

d)**EB-IP-13** - Mundy-Taylor, V., V. Crook, S. Foster, S. Fowler, G. Sant and J. Rice. CITES Non-detriment Findings Guidance for Shark Species Sharks

**ECOSYSTEM AND BYCATCH MITIGATION THEME**

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| --- |
| ***EB THEME – Working Papers*** |
| **EB-WP-01** | Caneco, B. [1], C. Donovan [1], and S. Harley [2]. Analysis of WCPO longline observer data to determine factors impacting catchability and condition on retrieval of oceanic whitetip, silky, blue and thesher sharks and Supplementary Information (EB-WP-01a) |
| **EB-WP-02** | Lehodey, P., I. Senina, O.Titaud, B.Calmettes, A. Conchon, A. Dragon, S. Nicol, S.Caillot, J. Hampton, and P. Williams. Project 62: SEAPODYM applications in WCPO Rev 1. |
| **EB-WP-03** | Nicol, S. and S. Clarke. Annual WCPFC Report: Joint Tuna RFMO Bycatch Technical Working Group. |
| **EB-WP-04** | Brouwer, S. A report on the activities completed for Shark Research Plan by the SPC-OFP. |
| **EB-WP-05** | Patterson, H., S. Hansen and J. Larcombe. A review of shark bycatch mitigation in tuna longline fisheries |
| **EB-WB-06** | Hsiang-Wen Huang. Seabirds and sea turtles bycatch of Taiwanese tuna longline fleets in the Pacific Ocean |
| **EB-WP-07** | Ochi D, N. Katsumata, T. Kitamura, and H.Minami. Summary of utilization of mitigation techniques to reduce seabird bycatch in Japanese small-sized longline vessels |
| **EB-WP-08** | Sancristobal, I. J. Filmalter, F. Forget, G. Boyra, G. Moreno, J. Muir, L. Dagorn and V. Restrepo. International Seafood Sustainability Foundation’s Third Bycatch Mitigation Research Cruise in the WCPO |
| **EB-WP-09** | Ariz Tellaria, F. J. Catch, Effort, and eCOsystem impacts of FAD-fishing (CECOFAD) (ppt-pdf) |
| ***EB THEME – Information Papers*** |
| **EB-IP-01** | Gilman, E., M. Chaloupka, B. Wiedoff and J. Willson. Mitigating seabird bycatch during hauling by pelagic longline vessels.  |
| **EB-IP-02** | Nicol, S. M. Dessert, T. Gorgues, O. Aumont, C. Menkes, P. Lehodey and M. Lengaigne. Project 62: Progress report on climate simulations. Rev. 1 |
| **EB-IP-03** | Caillot, S. and S. Nicol. Project 62: Data Query Tool for SEAPODYM output |
| **EB-IP-04** | Clarke, S., M. Sato, C. Small, B. Sullivan, Y. Inoue and D. Ochi. Bycatch in Longline Fisheries for Tuna and Tuna-like Species: a Global Review of Status and Mitigation Measures |
| **EB-IP-05** | Clarke, S. Issues for t-RFMOs in relation to the listing of shark and ray species by the Convention on International Trade in Endangered Species (CITES) |
| **EB-IP-06** | Clarke, S. and S. Harley. A Proposal for a Research Plan to Determine the Status of the Key Shark Species (WCPFC-SC6-2010/EB-WP-01) |
| **EB-IP-07** | Placeholder |
| **EB-IP-08** | New Zealand National Plan of Action for the Conservation and Management of Sharks 2013 |
| **EB-IP-09** | Watson, J. T. and K. A. Bigelow. Trade-offs among Catch, Bycatch, and Landed Value in the American Samoa Longline Fishery |
| **EB-IP-10** | Bigelow, K. Seabird interaction rates in the Hawaii‐based shallow and deep‐set longline fisheries by vessel size as estimated from observer data (2004–2013) |
| **EB-IP-11** | Curran, D. Shark Catch in Pelagic Longline Fisheries: A Review of Mitigation Measures |
| **EB-IP-12a** | Lack, M., G. Sant., M. Burgener and N. Okes. Development of a Rapid Management-Risk Assessment Method for Fish Species through its Application to Sharks |
| **EB-IP-12b** | Annex to EB-IP-12a |
| **EB-IP-13** | Mundy-Taylor, V., V. Crook, S. Foster, S. Fowler, G. Sant and J. Rice. CITES Non-detriment Findings Guidance for Shark Species Sharks |