COMMISSION
THIRTEENTH REGULAR SESSION
Denarau Island, Fiji
5 – 9 December, 2016

SYNOPSIS OF SC12 SUMMARY REPORT

WCPFC13-2016-22
17 November 2016

Paper prepared by the Secretariat

OPENING OF THE MEETING

1. SC12 was held in Bali, Indonesia, during 3-11 August 2016. Ms Berry Muller (Republic of Marshall Islands) chaired the meeting.

REVIEW OF FISHERIES

2. The provisional total WCP–CA tuna catch for 2015 was estimated at 2,687,840 mt, which is 80% of the total Pacific Ocean catch of 3,379,789 mt, and 56% of the global tuna catch (the provisional estimate for 2015 is 4,799,697 mt).

Species	Catch (mt)	%
Skipjack	1,827,750	68
Yellowfin	605,963	23
Bigeye	134,084	5
Albacore	120,043 (NP: 51,449; SP: 68,594)	4

Gear	Catch (mt)	%
purse seine	1,766,070	66
pole-and-line	228,129	8
longline	243,547	9
SP troll albacore	2,576	0.1
remainder	269,100	17

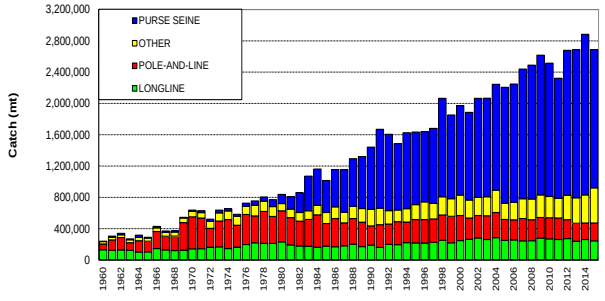

Figure 1. Catch (mt) of albacore, bigeye, skipjack and yellowfin in the WCP–CA, by longline, pole-and-line, purse seine and other gear types

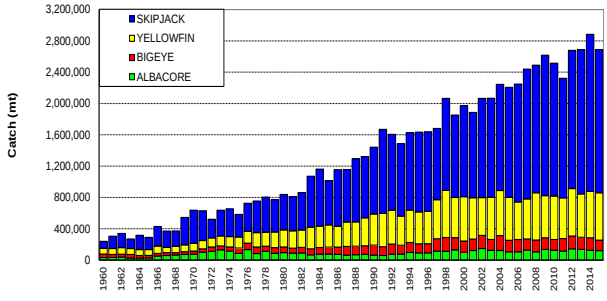

Figure 2. Catch (mt) of albacore, bigeye, skipjack and yellowfin in the WCP–CA

DATA ISSUES

3. SC12 recommended that SPC continue Project 60 (Collection and evaluation of purse seine species PS species composition data), with a budget of $50,000 in 2017. A cannery receipt data study provides additional information in relation to Project 60.

Economic data

4. SC12 recommended that:

a) An annual update of "Analyses and projections of economic conditions in WCPO fisheries", in a similar manner to SC12-ST-WP-04, continue to be provided at SC meetings.
b) These economic analyses be made available to, and be used by, the Commission in the development of harvest strategies and management measures.
c) SC13 considers guidelines for the voluntary submission of economic data to the Commission by CCMs, recognizing the value of economic data to the work of the Commission.

STOCK ASSESSMENT THEME

5. Summary of stock status and management advice for WCPO key tunas, northern stocks, sharks and billfish are included in following reference papers and in Attachment A:

- WCPFC13-2016-16: summary for bigeye, yellowfin and skipjack
- WCPFC13-2016-17: summary for South Pacific albacore
- WCPFC13-2016-19: summary for Pacific bluefin tuna
- WCPFC13-2016-21: summary for sharks
- Attachment A: a brief summary matrix for all WCPO tunas, sharks and billfishes

MANAGEMENT ISSUES THEME

6. Recommendations and key findings from the Management Issues Theme are included in a reference paper WCPFC-2016-WP-11.

ECOSYSTEM AND BYCATCH MITIGATION THEME

SEAPODYM[1]

7. SC12 recommended that WCPFC13 endorses the results of the review of SEAPODYM (SC12-EB-IP-14: *SEAPODYM review with an update about ongoing developments and preliminary results*) as follows:

> SEAPODYM has the potential to be a useful complementary model to MULTIFAN-CL for MSE work that includes spatial management. Similarly, the capacity of SEAPODYM to include alternate oceanographic states (e.g. ENSO phases and climate change projections) would allow climate proofing (reducing risks and capitalizing on opportunities presented by climate change) to be a consideration in the MSE work undertaken by WCPFC.

[1] Spatial Ecosystem and Population Dynamics Model (SEAPODYM) is a numerical model initially developed for investigating physical-biological interaction between tuna populations and the pelagic ecosystem of the Pacific Ocean.

8. Other recommendations and key findings related with sharks, seabirds and sea turtles issues are in reference paper WCPFC13-2016-21.

FUTURE WORK PROGRAM AND BUDGET

9. The SC 2017 work programme and budget and provisional work programme and indicative budget for 2018-2019 were adopted as shown in Table 1 below.

Table 1: List of SC work programme titles and budget for 2017, and indicative budget for 2018–2019, which require funding from the Commission's core budget. Other projects also prioritised by SC12 without funding request are also listed to indicate the support by SC12 for those projects.

(Budget in USD)

Project title	TORs	Essential	Priority / Rank	2017	2018	2019
SPC Oceanic Fisheries Programme Budget		Yes		871,200	871,200	871,200
SPC – Additional resourcing for harvest strategy evaluation, including stock assessments		Yes		160,000	160,000	160,000
Project 14. West Pacific East Asia (WPEA) Project		Yes		25,000	25,000	25,000
Project 35b. Maintenance and enhancement of the WCPFC Tissue Bank	Annexed	Yes	High	95,000	95,000	95,000
Project 42 Pacific Tuna Tagging Programme (PTTP) *Additional funding required from external sources*	Annexed	Yes	High	250,000 *950,000*	500,000 *190,000*	650,000 *550,000*
Project 60: Further paired sampling and unloading data comparisons.	Annexed		Medium / 1	50,000	0	0
Project 67: Review of impacts of recent high catches of skipjack on fisheries on the margins of the WCPFC Convention Area	Annexed		Medium / 4	40,000	40,000	30,000
Project 68. Estimation of seabird mortality across the WCPO Convention area	Annexed		Medium / 3	72,500	22,500	17,500
Project 78 Review of shark data and modelling framework to support stock assessments	Annexed		Medium / 2	65,000	0	0
Project 79 Spatial longline analyses in support of bigeye tuna management in the WCPFC[2]	Annexed		NR[1]	NBR[2]	0	0
Unobligated (Contingency) Budget Note: Any science-related projects requested by the Commission with no budget allocation				83,000	83,000	83,000
SC12 TOTAL BUDGET	**Excluding External Funding of Project 42**			**1,711,700**	**1,796,700**	**1,931,700**
	Including External Funding for Project 42			**2,661,700**	**1,986,700**	**2,481,700**

1. NR = Not Ranked, 2. NBR = No Budget Request from WCPFC

ADMINISTRATIVE MATTERS

10. SC12 endorsed a process for the independent review of stock assessments (Attachment B).

[2] Project 79 has been completed and is posted on the WCPFC13 website (WCPFC13-2016-IP03).

11. The SC Chair B. Muller was approved as SC Chair for the next 2 years, and the SC Vice-Chair, A. Batibasaga, reconfirmed his availability to complete his two year term.

12. SC12 confirmed that SC13 in 2017 would be held in the Cook Islands and proposed that SC14 in 2018 be held in Korea.

Attachment A

Brief summary of stock status and management advice for the WCPO tunas, sharks and billfishes

Species	Last assessment	Stock status	Management advice
Tropical Tunas			
Bigeye tuna (*Thunnus obesus*)	SC10 (2014) and SC12 (2016)	• Total catch in 2015: 134,084 mt - PS catch in 2015 was 26% lower than that in 2014 and effort was 21% lower. - LL catch in 2015 was 13% lower than that in 2014, and tropical LL effort (20N-10S) was 4% lower. • Projected status in 2016: $SB_{2016}/SB_{F=0} = 0.17$ • The stock is in an overfished state and overfishing is occurring	• F be reduced. • [A 36% reduction in F from the average levels for 2008–2011 would return F to F_{MSY} and above the LRP] OR [A minimum 33% reduction in F from the 2004 level, or a minimum 26% reduction from the average 2001–2004 level] would return F to F_{MSY} and above the LRP
Yellowfin tuna (*Thunnus albacares*)	SC10 (2014) and SC12 (2016)	• Total catch in 2015: 605,963 mt - PS catch in 2015 was 15% lower than that in 2014 and effort was 21% lower. - LL catch in 2015 was 2% lower than that in 2014, and tropical LL effort (20N-10S) was 4% lower. - Catches of other gears increased by 47% from 2014 to 2015. • Projected status in 2016: $SB_{2016}/SB_{F=0} = 0.49$ • The stock is not in an overfished state nor experiencing overfishing	• The catch should not be increased from 2012 levels • Maintain current SB levels until an appropriate TRP is agreed
Skipjack tuna (*Katsuwonus pelamis*)	SC12, 2016	• Total catch in 2015: 1,827,750 mt - PS skipjack catch in 2015 was 13% lower than that in 2014 and effort 21% lower. • Two different views on 2016 stock assessment: - Majority view: $SB_{2015}/SB_{F=0} = 0.58$ for reference case model - Alternative view: $SB_{2015}/SB_{F=0} = 0.43$-	• The current SB is around the adopted TRP • Maintain the SB near the TRP

		0.71 reflecting the 5th and 95th percentiles of the structural uncertainty grid • The stock is not in an overfished state nor experiencing overfishing	
South Pacific albacore tuna (*Thunnus alalunga*)	SC11, 2015	• Total catch in 2015: 68,594 mt - LL catch in 2015 was 17% lower than that in 2014 - Troll catch in 2015 was 16% higher than that in 2014. • 2015 stock assessment: $SB_{2013}/SB_{F=0} = 0.40$ • The stock is not overfished and overfishing is not occurring	• Longline F and catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained
Northern Stocks			
North Pacific albacore (*Thunnus alalunga*)	SC10, 2014	ISC's stock status conclusion: • The stock is not experiencing overfishing.Spawning biomass is more than two times greater than $20\%SSB_{Current, F=0}$ (established limit reference point) and the stock is not in an overfished state.	ISC's conservation advice: • The stock is healthy and sufficient to sustain recent exploitation (F2010-2012), assuming average historical recruitment continues.
Pacific bluefin tuna (*Thunnus orientalis*)	SC12, 2016	ISC's stock status conclusion: • The stock is in an overfished state and overfishing is occurring - SSB(2014) ≈ 17,000 mt - Provisional 2015 catch: 11,020 mt - $SB_{2014}/SB_{F=0}$ = 2.6% (initial rebuilding target = 7% of $SB_{F=0}$)	ISC's conservation advice: • The projection results indicate that a 10% reduction of smaller fish (<30kg) would have a larger effect on recovery than a 10% reduction of larger fish.
North Pacific swordfish (*Xiphias gladius*)	SC10, 2014	ISC's stock status conclusion: • The WCNPO stock is healthy ($B_{2010\text{-}2012} > B_{MSY}$) and is above the level required to sustain recent harvest rates ($H_{2010\text{-}2012}$). • For the EPO stock, overfishing may be occurring in recent years.	ISC's conservation advice: • The WCNPO stock is not fully exploited. • Recent average yield is two times higher than the estimated MSY, and not likely sustainable in the long term.
Sharks			
Oceanic whitetip shark (*Carcharhinus longimanus*)	SC08, 2011	• $SB_{current}/SB_{MSY} = 0.153$; $SB_{current}/SB_0 = 0.065$ • The stock is in an overfished state and	• A management measure designed to reduce F has been agreed (CMM 2011-04). • Reference points for shark species, including

		overfishing is occurring	oceanic whitetip sharks, are under consideration by the SC.
Silky shark (*Carcharhinus falciformis*)	SC09, 2012	• $F_{current}/F_{MSY}$ = 4.32; $SB_{current}/SB_{MSY}$ = 0.72 • The stock is in an overfished state and overfishing is occurring	• The greatest impact on the stock is attributed to bycatch from the LL fishery in the tropical and subtropical areas, but there are also significant impacts from the associated PS fishery that catches predominantly juvenile sharks. • Management measure designed to reduce F has been agreed (CMM 2013-08). • Reference points for shark species, including silky sharks, are under consideration by the SC.
South Pacific blue shark (*Prionace glauca*)	SC12, 2016	• The 2016 SP blue shark assessment is preliminary.	• No management advice has been provided.
North Pacific blue shark (*Prionace glauca*)	SC10, 2014	• Two assessment models developed: - BSP model: B_{2011}/B_{MSY} = 1.65; F_{2011}/F_{MSY} = 0.32 - SS model: B_{2011}/B_{MSY} = 1.621; F_{2011}/F_{MSY} = 0.34 • The stock is not overfished and overfishing is not occurring *BSP = Bayesian surplus production* *SS = Stock Synthesis*	• All targeted shark fisheries be required to submit management plans with robust catch limits to the Commission by WCPFC12. • Given the uncertainties, catch and fishing effort on blue shark should be carefully monitored, and continued research into the fisheries, biology and ecology of blue shark are recommended.
North Pacific shortfin mako (*Isurus oxyrinchus*)	SC11, 2015	• Insufficient data to conduct a stock assessment.	• No management advice has been provided.
Pacific bigeye thresher shark (*Alopias superciliosus*)	SC12, 2016	• A stock assessment will be presented to SC13.	• No management advice has been provided.
Billfishes			
South Pacific swordfish (*Xiphias*	SC09, 2012	• The assessment was highly sensitive to growth assumptions:	• No increase in fishing mortality over current (2007–2010) levels

gladius)		a) GA: Overfishing was occurring but the stock was not in an overfished state b) GH: No overfishing is occurring and the stock is not in an overfished state *GA: Australian growth model* *GH: Hawaii growth model*	• Noting that recent catches between the equator and 20°S now represent the largest component of the catch in Region 2 (equator to 50°S, 165°E to 130°W), SC9 recommended that the Commission consider developing appropriate management measures for this region which is not covered by CMM 2009-03.
Southwest Pacific striped marlin (*Kajikia audax*)	SC08, 2011	• The stock may be overfished though overfishing is not occurring.	• Reduce the overall catch through the expansion of the geographical scope of CMM 2006-04 in order to cover the distribution range of the stock.
North Pacific striped marlin (*Kajikia audax*)	SC11, 2015	• $SSB_{2013} / SSB_{MSY} = 0.39$; $F_{2010\text{-}2012} / F_{MSY} = 1.49$ • $SSB_{current}/SSB_{current,F=0} = 0.12$ • The stock is in an overfished state and overfishing is occurring.	• Develop a rebuilding plan for NP striped marlin with subsequent revision of CMM 2010-01 in order to improve stock status.
Pacific blue marlin (*Makaira nigricans*)	SC12, 2016	ISC's stock status conclusion: • The stock is not currently overfished and is not experiencing overfishing.	ISC's conservation advice: • Since the stock is nearly full exploited, F should be remained at or below current levels (2012-2014).

Attachment B

Process for the independent review of stock assessments

The Commission for the Conservation and Management of Highly Migratory Fish Stock in the Western and Central Pacific Ocean,

RECOGNIZING the importance of sound scientific advice as the central piece for the conservation and management of tuna and tuna-like species in the Western and Central Pacific Ocean;

AWARE that the availability of adequate scientific information is fundamental to carrying out the objectives of the WCPFC Convention laid down in its Article 2;

NOTING the role of the Oceanic Fisheries Programme of the Pacific Community (SPC-OFP) which is contracted to provide independent scientific advice;

ACKNOWLEDGING the need to ensure that relevant, professionally independent and objective scientific advice, based on the best available and peer-reviewed scientific analysis, be provided by the Scientific Committee to the Commission;

Implements the following processes for the independent review of WCPFC stock assessments conducted by the SPC-OFP and encourage a comparable process[3] for non SPC-OFP WCPFC stock assessments:

Scientific Committee's recommendation to the Commission

1. The Scientific Committee should recommend a multi-year schedule for independent peer review of stock assessments.

2. The Scientific Committee will recommend to the Commission a specific independent peer review for a stock assessment, with an associated budget. The peer review panel will comprise three (3) independent experts. The budget will include consultancy fees, pre-workshop study, travel costs etc. and the peer review chair's attendance to report at the following Scientific Committee meeting.

Commission's approval of the peer review

3. The Commission at its annual meeting will consider the recommendation (Para 2. above) from the Scientific Committee for an independent peer review of a stock assessment and the associated budget.

4. Subject to the Commission's approval, the Scientific Committee will be tasked to develop Terms of Reference for the upcoming peer review and the Secretariat to implement the peer review process.

Selection of the independent peer review panel

5. The WCPFC secretariat is responsible for administering the selection and timely contracting of the three (3) independent peer reviewers.

1) The Secretariat will distribute a Circular seeking Member's nomination of candidate experts.
2) Each Member may recommend a maximum of two candidates[4] through their official WCPFC contacts.

[3] It is noted that the science provider to the Northern Committee, the ISC, is developing an interactive independent expert peer review process informed in part by this document.

[4] The nomination may be for an individual or it may be to approach an organisation e.g. IATTC to provide an appropriate expert.

3) Subject to the availability of the recommended experts and agreement with the terms of reference, the Science Research Sub-Committee comprising the SC Chair, the SC Theme Conveners and the Chief Scientist SPC-OFP will select eight candidates for short listing, and circulate the shortlist with their curriculum vitae to all Members.

4) Each Member will rank the eight candidates with scores 1 (most preferred) to 8(less preferred) and submit these rankings to the Executive Director.

5) The Secretariat will finalize the list of the peer review panel and contract with the three (3) experts. If any of the selected three (3) individuals are unable to undertake the review, the shortlisted candidate next in rank will be invited to join the peer review panel.

Panel's review process

6. At the start of the review process, SPC-OFP will prepare a procedural plan including detailed schedules, activities, provision of assessment results (possibly including all the input data, modeling software, output of basic runs as well as all the sensitivity runs) and provide these to the panel for advanced reviewing.

7. Once the review process is finished, a draft review report will be provided to SPC-OFP for their review and response. If time permits, this step may be concluded towards the end of the peer review workshop.

8. The final panel report, incorporated with SPC-OFP's response(s) and the panel's feedback to SPC-OFP if needed, shall be submitted to the WCPFC Executive Director, in advance of the following Scientific Committee meeting as scheduled in the contract.

9. The Chair of the independent peer review panel will be expected to present the results of the review to the following Scientific Committee meeting.

10. In preparing and conducting the review process, due considerations will be devoted to the following elements.

a) Location

Peer reviews of stock assessments will be conducted at the headquarters of SPC-OFP in Noumea, New Caledonia.

b) Duration

Subject to species, a five (5) day workshop is proposed, comprising a two (2) day period for peer reviewing the stock assessment, and a further three (3) day period for iteratively reviewing and advising on various aspects of subsequent assessment runs developed in light of the first two days.

c) Scheduling

Timing is dependent upon existing schedules of the SPC-OFP, the WCPFC Secretariat and the selection process and availability of the independent expert peer reviewers. The Chair of the peer review panel will present the review to the following Scientific Committee.

d) Composition

The peer review panel should comprise three (3) independent scientists that have significant expertise and experience in all aspects of stock assessments, preferably in relation to the stock assessment under review; one of whom will be assigned the role of Chair. The reviewers should not be directly involved with current WCPFC stock assessments.

Attendance to the peer review workshop will be limited to the peer review panel members, scientists directly involved in the relevant assessments, and the Secretariat as a coordinator of the whole process.