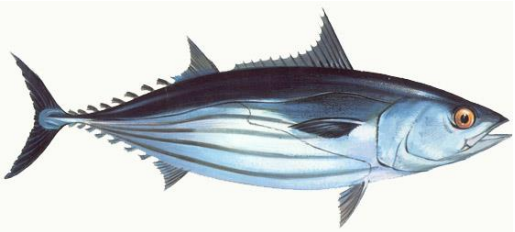
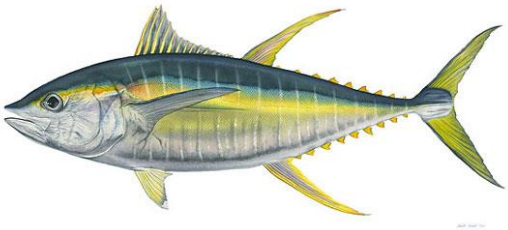
PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery





Surveillance Report

Conformity Assessment Body (CAB)	Lloyd's Register
Assessment team	Rob Blyth-Skyrme, Kevin McLoughlin, Dave Japp
Fishery client	Parties to the Nauru Agreement (PNA)
Assessment Type	First Surveillance

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1 Glossary

BLIM	Biomass limit reference point
BMSY	The level of biomass resulting in maximum sustainable yield
CAB	Conformity Assessment Body
CCMs	WCPFC Commission Members, Cooperating Non-Members and Participating Territories
CMM	Conservation and management measure
CoC	Chain of custody
CR	Certification Requirements
ETP	Endangered, threatened or protected
F	Fishing mortality
FAD	Fish aggregating device
FCP	Fisheries Certification Process
FFA	Forum Fisheries Agency
FMSY	The rate of fishing mortality that results in the maximum sustainable yield
FSM	Federated States of Micronesia
HCR	Harvest control rule
LRP	Limit reference point
MSC	Marine Stewardship Council
MSY	Maximum sustainable yield
OFP	Oceanic Fisheries Programme (Part of the SPC)
PAE	Party allowable effort
PCR	Public certification report
PI	Performance indicator
PNA	Parties to the Nauru Agreement
PNAO	Parties to the Nauru Agreement Office
PNG	Papua New Guinea
RFMO	Regional fisheries management organisation
SB	Spawning biomass
SBcurrent	Average spawning biomass over recent years
SBMSY	Spawning biomass at MSY
SG	Scoring guidepost
SI	Scoring issue
SPC	Secretariat to the Pacific Community
TAC	Total allowable catch
TAE	Total allowable effort
TRP	Target reference point
UoC	Unit of certification
VDS	Vessel day scheme
VMS	Vessel monitoring scheme
WCPFC	Western and Central Pacific Fisheries Commission
WCPFC-CA	WCPFC Convention Area
WCPFC-SC	WCPFC Scientific Committee
WCPO	Western and Central Pacific Ocean
YFT	Yellowfin tuna

2 Executive summary

The PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery (hereafter 'the PNA Tuna Fishery') was first certified in December 2011, and was recertified against the Marine Stewardship Council (MSC) Certification Requirements version 2.0 (CRv.2.0) on 22nd March 2018. This report constitutes the first annual surveillance of the fishery since reassessment, and is undertaken against the CRv.2.0 (MSC 2014) using the MSC Fisheries Certification Process version 2.1 (FCPv.2.1, MSC 2018).

The total catch of skipjack tuna and yellowfin tuna exceeded 700,000 t in both 2017 and 2018, while effort in the fishery has remained below the total allowable effort (TAE) level set to constrain effort and catch within PNA waters.

Importantly, all six Conditions are currently on target, and progress has been made against all three non-binding Recommendations.

The PNA Tuna Fishery continues to meet the MSC Standard and is performing at a high level. The Audit team recommends the continued MSC certification of the PNA Tuna Fishery.

3 Report details

3.1 Surveillance information

Table 1. Surveillance information

1	Fishery name	
	PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery.	
2	Surveillance level and type	
	- Surveillance Level 6 (default – two auditors on-site, one auditor off-site)	
	No changes have been made to the surveillance level and type since certification.	
3	Surveillance number	
	- 1st Surveillance	X
4	Team leader	
	- Rob Blyth-Skyrme – Team Leader and Principle 2 expert (on-site).	
	Rob started his career in commercial aquaculture in 1996, but subsequently shifted focus to the sustainable management of wild fisheries. He completed his PhD in 2004, which studied the Inshore Potting Agreement off south Devon, UK, a co-managed fishery that survived as a voluntary agreement between industry sectors for more than 30 years. He then worked at the Eastern Sea Fisheries Joint Committee, one of the bodies managing inshore fisheries around the English coast, where he became the Deputy Chief Fishery Officer, focusing on fisheries management and enforcement. Rob's next role was at English Nature / Natural England, the statutory adviser to UK Government on nature conservation in England and English waters, where he led the team dealing with fisheries policy, science and nationally significant fisheries and environmental casework. Rob now runs Ichthys Marine Ecological Consulting Ltd. As well as carrying out general fisheries consultancy, including providing advice on habitat and species impacts, reviewing the science supporting MPA designations, and assessing management regimes, he has worked as a MSC Lead Assessor, Principle 2 and Principle 3 expert team member, and peer reviewer across a wide range of MSC fisheries. Rob has also presented at various MSC workshops, including those covering Principle 2 in the Certification Requirements (CR) V2.0, changes in species and habitat requirements between Certification Requirements V1.3 and V.2.0, and the interactions between the MSC Standard and the EU Landing Obligation. He is an Trainer for the MSC's Capacity Building Programme, a member of the Peer Review College, and has completed training in CRv.1.3, CRv.2.0 and Process v2.1. Rob has no conflicts of interest in relation to this fishery. He meets the Team Leader and Team Member competency requirements (Table PC1 and PC2, MSC 2018), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2018). A full *C.V.* is available on request.	
5	Team members	
	- Kevin McLoughlin – Principle 1 expert (on-site).	
	Kevin is a specialist fisheries consultant based in Australia with more than 30 years' experience across a wide range of international and domestic fisheries science issues, with close links to government policy. He represented the Australian Government on many committees and groups such as fishery assessment groups, providing advice on a diverse range of fisheries and species (including tuna, shark, various finfish, scallop and prawn); work in assessment groups involved assessment of target species, development of bycatch action	

	plans and ecological risk assessments. Kevin was responsible for the production of annual status reports for Australian government-managed fisheries for a number of years. He was Australia's delegate on scientific issues at the Indian Ocean Tuna Commission and was Chair of the IOTC Working Party on Bycatch for several years. He was also a delegate at scientific meetings of the Commission for the Conservation of Southern Bluefin Tuna. Kevin has worked predominantly on Principle 1 aspects of MSC assessments but has also undertaken Principle 2 and 3 work, as well as peer review and surveillance audits for several fisheries Kevin was a team member for the full assessment of the Australia's Northern Prawn Fishery, Western Australia Exmouth Gulf and Shark Bay prawn trawl fisheries, the Parties to the Nauru Agreement WCPFC skipjack and yellowfin fishery, Fiji albacore and yellowfin longline fishery, New Zealand Skipjack Fishery, New Zealand Albacore Fishery, the Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna Fishery, and Australia's blue grenadier fishery. Kevin has passed MSC training and has no Conflict of Interest in relation to this fishery. He meets the Team Member competency requirements (Table PC2, MSC 2018), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2018). A full *CV* is available on request.
	- Dave Japp – Principle 3 expert (off-site).
	Dave is a Fisheries Scientist with an undergraduate degree in Zoology and Oceanography and a Masters degree in Fisheries Science. Presently he is director of Capricorn Fisheries Monitoring (CapFish) in South Africa, working for all sectors of the fishing industry including the state authority, the fishing industry, international organizations and numerous other groups. Prior to studying he worked at sea for 10 years as a deck officer and navigator in the Merchant Marine. His experience in fisheries management and related research is extensive and covers more than 20 years. He was previously employed at the Sea Fisheries Research Institute (now The Department of Agriculture Forestry and Fisheries or DAFF) from 1988 to 1997 as a biologist and manager and at the time he left this institution was Head of the Offshore Resources Section (demersal and pelagic stocks). His role at DAFF was primarily management, biology and resource assessment and he was responsible for the submission of management advice on hake and other demersal stocks. He was also responsible for, planned and led, many demersal hake-directed biomass surveys. Mr Japp has retained an intimate knowledge of all aspects of the demersal and other fisheries including the trawling methods and has authored many fisheries-related papers as well as numerous technical reports for the FAO (including high-seas guidelines for fishing, MPAs and Ecosystem Approach to Fisheries). Further, Mr Japp has also provided many expert reports for Environmental Impact Assessments relating to fisheries and has a good knowledge of Southern African and global fisheries including project appraisals for the World Bank in the East African and West Indian Ocean regions. Dave has been an MSC assessor since 2002 (working on the South African hake fishery). He has also peer reviewed numerous MSC assessments and supervises MSC Chain of Custody audits in South Africa. Dave has passed MSC training and has no Conflict of Interest in relation to this fishery. He meets the Team Member competency requirements (Table PC2, MSC 2018), and contributes towards the Audit Team meeting the Fishery Team competency requirements (Table PC3, MSC 2018). A full *CV* is available on request.
6	Audit/review time and location
	Time and dates of surveillance activities: Brisbane, Australia, week of April 1st, 2019.
7	Assessment and review activities
	The purpose of the annual surveillance audit is fourfold: 1. To establish and report on any material changes to the circumstances and practices affecting the performance of the fishery against the MSC Standard; 2. To monitor the progress made to improve those practices that were scored at or above 'minimum acceptable practice' (an MSC score of 60) but below 'good practice' (an MSC score of 80), as captured in the Conditions raised in the recertification of the fishery in 2018 (Blyth-Skyrme *et al.*, 2018) 3. To monitor actions taken in response to non-binding 'recommendations' made at recertification;

	4. To re-score any Performance Indicators (PIs) where circumstances or practices have materially changed, focusing on those PIs that form the basis of any Conditions raised. Please note: For a complete picture, this report should be read in conjunction with the recent Public Certification Report (Blyth-Skyrme *et al*., 2018), here: https://fisheries.msc.org/en/fisheries/pna-western-and-central-pacific-skipjack-and-yellowfin-unassociated-non-fad-set-tuna-purse-seine/@@assessments.

3.2 Background

3.2.1 Changes in management system

There have been no significant changes to the management system for the fishery since re-certification. Western Central Pacific Fisheries Commission (WCPFC) Conservation and Management Measures (CMMs) introduced since the re-certification of the fishery are presented in Table 1, below. Significant changes in the CMMs relevant to the PNA Tuna fishery are discussed elsewhere in the report.

Table 1: WCPFC CMMs adopted since re-certification of the fishery[1]

CMM	Title
Res. 2017-01	Resolution on Provisional Application of CMM 2017-01
2017-01	Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the Western and Central Pacific Ocean (with Resolution 2017-01 on the Provisional Application of CMM 2017-01) (replaces 2016-01 and predecessors)
2017-02	Conservation and Management Measure on minimum standards for Port State Measures
2017-03	Conservation and Management Measure for the protection of WCPFC Regional Observer Programme Observers (replaces 2016-03)
2017-04	Conservation and Management Measure on Marine Pollution (effective 1 January 2019)
2017-05	WCPFC Record of Fishing Vessels and Authorisation to Fish
2017-06	Conservation and Management Measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds
2017-07	Conservation and Management Measure for Compliance Monitoring Scheme
2017-08	CMM 2017-08 Conservation and Management Measure for Pacific Bluefin Tuna
Res. 2018-01	Resolution on Labour Standards for Crew on Fishing Vessels
2018-01	Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the Western and Central Pacific Ocean (replaces 2017-01 and predecessors)
2018-02	Conservation and Management Measure for Pacific Bluefin tuna (replaces 2017-08 and others)
2018-03	Conservation and Management Measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds (replaces CMM 2017-06 and others)
2018-04	Conservation and Management Measure of Sea Turtles (replaces 2018-03 on 1 January 2020)
2018-05	Conservation and Management Measure for the Regional Observer Programme (replaces 2007-01)
2018-06	CMM 2018-06 Conservation and Management Measure for WCPFC Record of Fishing Vessels and Authorisation to Fish
2018-07	CMM 2018-07 Conservation and Management Measure for Compliance Monitoring Scheme

[1] https://www.wcpfc.int/system/files/booklets/31/CMM%20and%20Resolutions.pdf

3.2.2 Changes in relevant regulations

At national level there have been a few amendments to governance instruments, including policies, Acts and regulations of PNA members. For the Republic of Kiribati, the Fisheries Act of 2010 was amended (No 5 of 2017), a process that was started about the time of recertification. Amendment of Section 4 on management of fisheries refers explicitly to the application of the "precautionary approach and an ecosystem approach". The amendment aims to address issues raised by the EU relating to Kiribati being a possible non-cooperating third party in the fight against IUU fishing. Amongst issues addressed in the amendments is the three-fold increase in penalties for different offences, including shark fining as well as the declaration of a Shark Sanctuary effectively covering all Kiribati waters (Government of Kiribati Shark Sanctuary Regulations of 2010). Marshall Islands also amended their principle fisheries legislation through the Marine Resources (Amendment) Act of 2018 which includes specific sections pertaining to sharks including penalties of up to $200,000. The most recent PNA Party Compliance Committee report (record of proceedings -13 March 2019) recognises the need to address members implementation (of legislation) weaknesses, including shark finning.

In relation to the Precautionary Approach (also see Recommendation 3), PNAO has reviewed all member national legislation to identify gaps, with a view to addressing the weakness identified at re-certification. While all member states are members of WCPFC, members are obligated (at national level) to apply precautionary management actions. Reference is also made here to the Technical Compliance Committee report of the WCPFC and the annual Regional Observer Programme Report (2 Sept. 2018) relating to sharks which included reductions in whale shark-Purse seine interactions, increasing proportion of releases of sharks alive and reduced reports of shark finning incidents.

3.2.3 Changes to personnel involved in science, management or industry

No changes were reported in staffing of the principal managers and advisors in the PNA, nor changes to staffing in the Oceanic Fisheries Programme of the Secretariat of the Pacific Community (SPC).

3.2.4 Changes to scientific base of information, including stock assessments

Catch monitoring:

Catch estimates for all tuna and billfish species fished in the WCPFC statistical area are compiled annually by SPC based on reports provided by CCMs (WCPFC Commission Members, Cooperating Non-Members and Participating Territories). The most recent report provides catches for the period 1960-2017.

The 2017 WCPFC Convention Area (WCPFC-CA) skipjack catch of 1,624,162 t was the lowest since 2011 and around 375,000 t lower than the 2014 record (2,000,608 t), mainly due to low catches in the purse-seine fishery (1,280,311 t; 79% of the total) (Figure 1). Pole-and-line catch in 2017 was 123,132 t (21% decrease from 2016). "Artisanal" gears in the domestic fisheries including Indonesia, Philippines and Japan took 218,175 t in 2017 (13% of the total catch). Longline fishing accounted for less than 1% of the total 2017 catch.

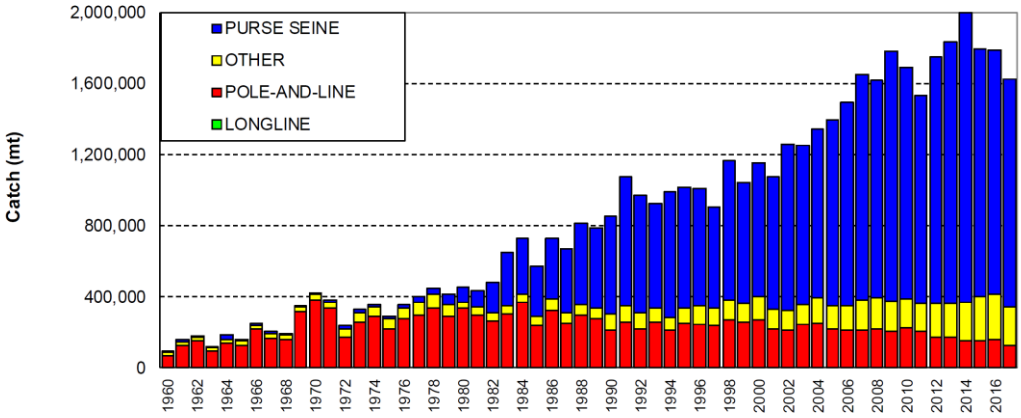


Figure 1: Skipjack tuna WCPFC-CA catch (t) by gear, 1960-2017 source (WCPFC-SC14-2018/GN-WP-01)

The 2017 WCPFC-CA yellowfin tuna catch (670,890 t) was a record, more than 27,000 t higher than the previous high in 2016, due to a record catch in the purse seine fishery (472,279 t) (Figure 2). The longline catch for 2017 (83,400 t) was amongst the lowest in the past ten years. Pole-and-line fisheries took 12,219 t of yellowfin during 2017, which is the lowest since the late 1970s, primarily due to a reduction in the Indonesian pole-and-line catch. Catches by 'other' gears were 103,000 t in 2017, predominantly in the domestic fisheries of the Philippines and eastern Indonesia.

The UoA catch of skipjack tuna in 2017 was 516,025 t in 2017 and was 580,153 t in 2018. The UoA catch of yellowfin tuna in 2017 was 235,130 t in 2017 and was 155,370 t in 2018.

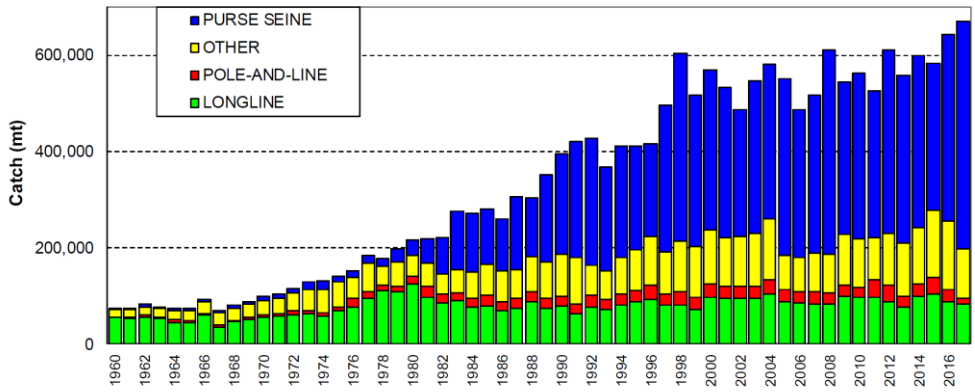


Figure 2: Yellowfin tuna WCPFC-CA catch (t) by gear, 1960-2017 (source WCPFC-SC14-2018/GN-WP-01)

As described in the PCR for the fishery (Blyth-Skyrme *et al*., 2018), the PNA Total Allowable Effort (TAE) is distributed among its members as a Party Allowable Effort (PAE). A summary of the total allocated and used fishing days for 2015-2018 (**Table** 2) shows that, although purse seine fishing effort has been increasing in recent years, it has remained less than the PAE days available.

Table 2. Purse seine effort (logsheet days) in PNA waters (PNA 2018) and the allocated PAE days (PNA 2017) for 2015-2018.

	2015	2016	2017	2018
Effort days	36,099	39,164	42,953	39,453*
PAE days	45,610	45,881	45,590	45,005
% PAE used	79%	85%	94%	87.9%

*preliminary figure

Skipjack tuna

Stock Status

There has not been an updated stock assessment since 2016 (McKechnie *et al.,* 2016) as described in the PCR for the PNA purse seine fishery and the stock status in the PCR remains current. The WCPFC Scientific Committee (WCPFC-SC) has also not changed its management advice since then.

The general conclusions from McKechnie *et al.* (2016) were that:

- The 2016 assessment estimates stock status to be very similar to the 2014 assessment, with a period of moderately higher spawning biomass over the subsequent years.
- Current catches are lower than but approaching estimated MSY.
- Fishing mortality of all age-classes is estimated to have increased significantly since the beginning of industrial tuna fishing, but fishing mortality still remains below the level that would result in the MSY, and is estimated to have decreased moderately in the last several years.

- Recent levels of spawning biomass are well above the level that will support the MSY, and are well above the limit reference point, 20%$SB_{F=0}$.
- Depletion-based reference points (including $SB_{latest}=SB_{F=0}$, $SB_{recent}=SB_{F=0}$ and $SB_{2015}=SB_{F=0[2015]}$) for the reference case model, sensitivity analyses and uncertainty grid suggest that the skipjack stock is most probably at or close to the target reference point of 50%$SB_{F=0}$.
- Modelling assumptions explored in sensitivity and structural uncertainty analyses had a moderate impact on model output but did not change the broad conclusions about recent stock status.

The temporal trend for the 2016 reference case model and the structural uncertainty grid in stock status are shown in Figure 3.

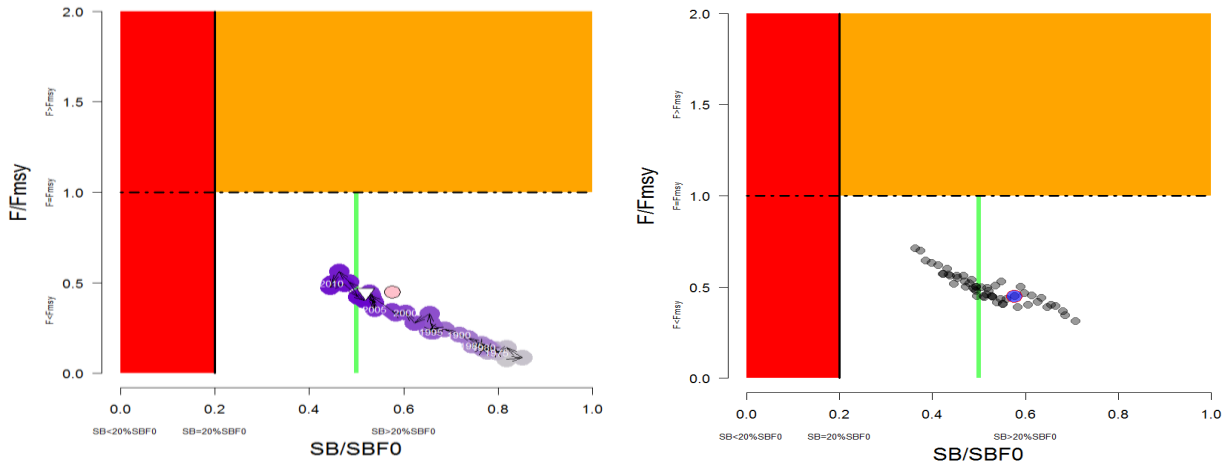


Figure 3: Temporal trend for the reference case model (left) and the structural uncertainty grid (right) in stock status relative to SBF=0 (x-axis) and FMSY (y-axis). (Source: WCPFC-SC12 2016).
Note: the red zone represents spawning potential levels lower than the agreed LRP, which is marked with the solid black line (0.2SBF=0). The orange region is for fishing mortality greater than FMSY (F=FMSY; marked with the black dashed line). The green line indicates the interim target reference point 50%SBF=0.

At the 2017 WCPFC SC meeting (WCPFC-SC13, 2017) skipjack stock projections were presented based upon the actual fishing levels by fleet in 2016, through 2017 to 2018, assuming that levels of effort or catch would remain constant at 2016 levels. The skipjack stock was initially projected to decline as recent estimated recruitments move through the stock, and then recover in the longer term. Median F_{2018}/F_{MSY} = 0.37; median $SB_{2018}/SB_{F=0}$ = 0.47.

The current WCPFC stock assessment advice for skipjack indicates that no changes in P1 scoring were required at this audit.

Yellowfin tuna

The Western and Central Pacific Ocean (WCPO) yellowfin stock assessment was updated in 2017 (Tremblay-Boyer et al., 2017) incorporating data from 1952 to 2015. That update addressed recommendations of the 2014 yellowfin stock assessment (Davies et al., 2014), and includes investigation of an alternative regional structure. The 2017 yellowfin assessment is supported by additional analyses of catch-per-unit-effort data for longline fisheries, tagging data and the data summaries for fisheries definitions used in the stock assessment.

The stock assessment advice from the modelling was based on a structural uncertainty grid comprised of 48 models, each of which was considered to be a plausible representation of yellowfin tuna stock dynamics (WCPFC-SC13, 2017). Reference point values are summarized in **Table** 3. Majuro plots for the full grid and key sensitivities are given in **Figure** 4.

Table 3: Summary of reference points over the 48 models in the structural uncertainty grid retained for management advice using divisors of 20 and 50 for the weighting on the size composition data.

Note that SBrecent/SBF=0 is calculated where SBrecent is the mean SB over 2012-2015 instead of 2011-2014 (used in the stock assessment report), at the request of the Scientific Committee. Source WCPFC-SC13, 2017.

	Mean	Median	Min	10%	90%	Max
C_{latest}	611,982	612,592	606,762	607,517	614,237	614,801
MSY	670,658	670,800	539,200	601,480	735,280	795,200
YF_{recent}	646,075	643,400	534,400	586,120	717,880	739,600
F_{mult}	1.34	1.36	0.88	1.03	1.61	1.86
F_{MSY}	0.12	0.12	0.07	0.10	0.14	0.16
F_{recent}/F_{MSY}	0.77	0.74	0.54	0.62	0.97	1.13
SB_{MSY}	544,762	581,400	186,800	253,320	786,260	946,800
$SB0$	2,199,750	2,290,000	1,197,000	1,366,600	2,784,500	3,256,000
SB_{MSY}/SB_0	0.24	0.24	0.15	0.18	0.28	0.34
$SB_{F=0}$	2,083,477	2,178,220	1,193,336	1,351,946	2,643,390	2,845,244
$SB_{MSY}/SB_{F=0}$	0.25	0.26	0.16	0.19	0.30	0.35
SB_{latest}/SB_0	0.33	0.34	0.18	0.23	0.42	0.45
$SB_{latest}/SB_{F=0}$	0.35	0.37	0.16	0.22	0.46	0.50
SB_{latest}/SB_{MSY}	1.40	1.39	0.80	1.02	1.80	1.91
$SB_{recent}/SB_{F=0}$	0.32	0.33	0.15	0.20	0.41	0.46
SB_{recent}/SB_{MSY}	1.40	1.41	0.81	1.05	1.71	1.93

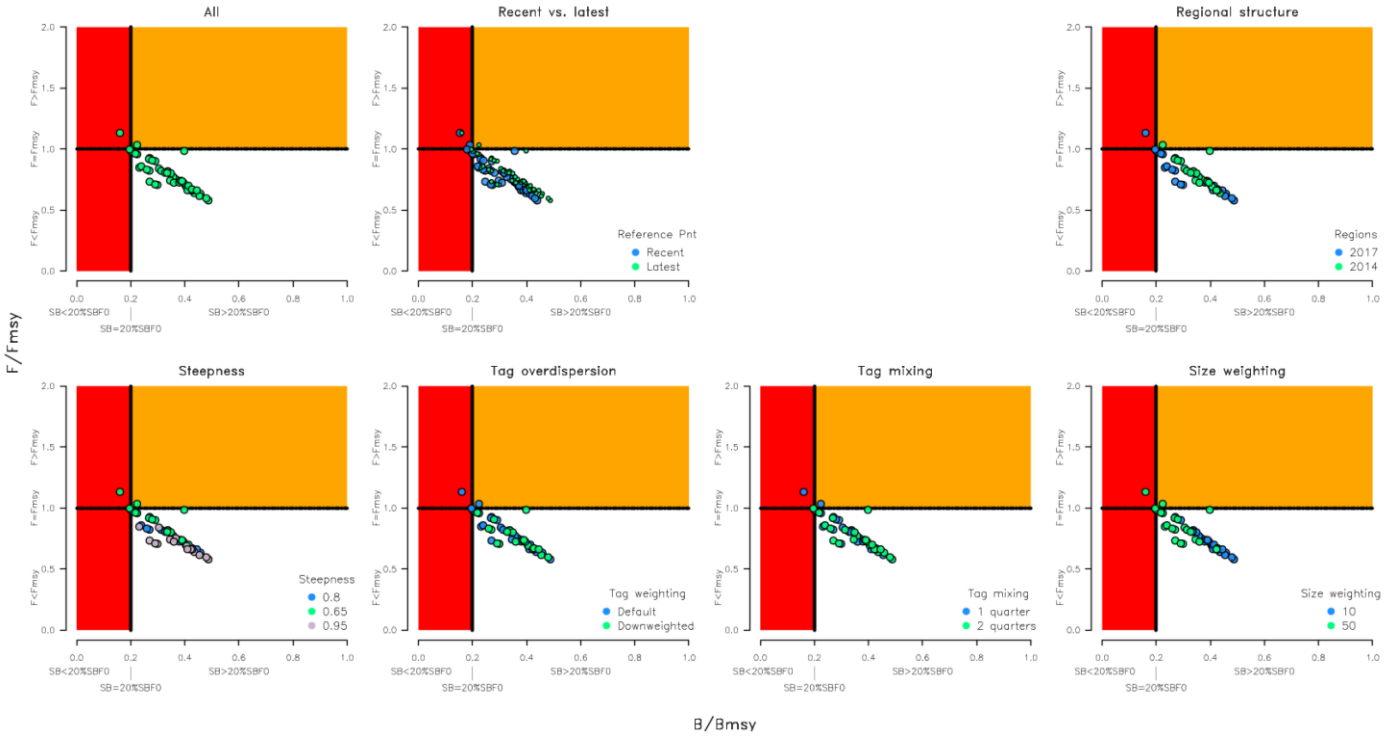


Figure 4: Majuro plots summarising the results for each of the models in the structural uncertainty grid. The plots represent estimates of stock status in terms of spawning potential depletion and fishing mortality.

Note F_{MSY} is marked with the black dashed line. The points represent $SB_{latest}=SB_{F=0}$ for each model run except in panel (b) where $SB_{recent}=SB_{F=0}$ is also displayed. Panels (c)–(g) show the estimates for the different levels for the five axes of the grid (Source: Tremblay-Boyer et al., 2017).

SC13 noted that the central tendency of relative recent spawning biomass was median ($SB_{recent}/SB_{F=0}$) = 0.33 with a probable range of 0.20 to 0.41 (80% probable range), and there was a roughly 8% probability (4 out of 48 models) that the recent spawning biomass had breached the adopted limit reference point with probability $P((SB_{recent}/SB_{F=0})<0.2)$ = 0.08. The median estimate (0.33) is below that estimated from the 2014 assessment grid ($(SB_{current}/SB_{F=0})$ = 0.41 (Davies *et al.,* 2014).

SC13 noted that the central tendency of relative recent fishing mortality was median (F_{recent}/F_{MSY}) = 0.74 with an 80% probability interval of 0.62 to 0.97, and there was a roughly 4% probability (2 out of 48 models) that the recent fishing mortality was above F_{MSY} with probability $P((F_{recent}/F_{MSY})>1)$ = 0.04. The median estimate (0.74) is comparable to that estimated from the 2014 assessment grid ($F_{current}/F_{MSY}$ = 0.76, Davies *et al.,* 2014) (WCPFC14, 2017). SC13 also noted that the assessment results show that the stock has been continuously declining for about 50 years since the late 1960s.

SC13 management advice was that based on the uncertainty grid adopted, the spawning biomass is highly likely above the biomass LRP and recent F is highly likely below F_{MSY}. Noting the uncertainties in the current assessment, it appears that the stock is not experiencing overfishing (96% probability) and that the stock is not in an overfished condition (92% probability).

Given the updated 2017 stock assessment for yellowfin tuna, the surveillance team reviewed the Principle 1 scoring issue for yellowfin for this surveillance audit and concluded that no scoring changes were required.

Harvest Strategy development:

As described in the MSC re-certification report for the fishery (Blyth-Skyrme et al. 2018), the WCPO harvest strategies for skipjack and yellowfin tuna have several components, with WCPFC, PNA and national and archipelagic management actions, supported by a robust stock assessment and extensive monitoring frameworks. Monitoring frameworks include the collection of operational catch and effort data, the provision of a range of scientific, monitoring and compliance information by observers, VMS data, and port sampling data. The monitoring provides the key databases for the skipjack tuna stock assessments.

The general management of skipjack and yellowfin tuna has not changed to any substantial degree that would affect the PNA certified fishery. The current harvest strategy relies on annual decision-making processes founded on the core principles of the WCPFC as laid out in its Convention and in a growing body of CMMs (see https://www.wcpfc.int/conservation-and-management-measures). The most important change has been the adoption of CMM 2017-01 in 2017 and subsequently CMM 2018-01 in 2018, replacing CMM 2016-01 and its predecessors. CMM 2018-01 came into effect on 13 February 2019 and shall remain in effect until 10 February 2021 unless replaced earlier or amended by the Commission. It sets conditions of harvest for skipjack, yellowfin, and other tunas. Measures in CMM 2018-01 are essentially as described for CMM 2016-01 in the PCR for the fishery. The CMM states: "*Pending the establishment of harvest strategies, and any implementing CMM, the purpose of this measure is to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks*."

WCPFC CMM 2014-06 was adopted to develop and implement a harvest strategy approach for key fish stocks in the WCPO. CMM 2014-06 describes how the WCPFC views harvest strategies and its plans for implementing them for all tropical tuna stocks, including skipjack and yellowfin. CMM 2014-06 is consistent with MSC definitions and requirements and outlines an intention to move towards a harvest strategy with well-defined harvest control rules ('decision rules' in WCPFC terminology). The CMM required the development of a workplan for its implementation, first adopted at WCPFC12 (WCPFC12, 2015; Attachment Y).

The harvest strategy workplan has been amended at subsequent Commission meetings and a number of the required outcomes have been delayed. In 2017 the Commission adopted an updated harvest strategy workplan (WCPFC, 2018; Attachment L; https://www.wcpfc.int/meetings/wcpfc14) extending out to 2021 to allow for the ongoing work towards adoption of harvest strategies for the four key stocks (skipjack, yellowfin, bigeye and south pacific albacore). This workplan was further amended at WCPFC15 in December 2018 (WCPFC, 2019; Attachment I; https://www.wcpfc.int/meetings/15th-regular-session-wcpfc). WCPFC15 agreed that the annual meeting in 2019 would be a 6-day meeting with additional time devoted for the Commission to discuss harvest strategies.

PNA continue to play a very important role in the WCPO tuna fisheries and provides continued support for the WCPO harvest strategy implementation process. PNA has, along with other Forum Fisheries Agency (FFA) Members, led an effort to see greater priority given to harvest strategy development within the WCPFC processes. PNA has also played a major role in the revision of Tropical Tuna CMMs to enhance the effectiveness of measures for WCPO tuna management.

The client submission (Section 7.2, Reports 1 and 2) contains references to documents that provide evidence of the role undertaken by PNA and its members. Appendix 1 shows the current 2014-06 workplan for harvest strategy development.

Bigeye tuna

An updated stock assessment was carried out for bigeye in 2017 which provides a more optimistic view on stock status than was the case during the re-assessment of this fishery (McKechnie et al., 2017). A further update was considered by WCPFC SC14 in 2018. These have produced more optimistic estimates of the status of bigeye.

SC14 agreed to use the "updated new growth" model (Farley *et al.,* 2017) to describe the stock status of bigeye tuna because SC14 considered it to be the best available scientific information. Removal of results using the old growth model, the stock status outcome becomes considerably more optimistic. However, SC14 also notes that questions remain regarding the "updated new growth" model.

WCPFC-SC (2018) concluded that based on the uncertainty grid adopted, the WCPO bigeye tuna spawning biomass is above the biomass LRP and recent F is very likely below F_{MSY}. The stock is not experiencing overfishing (94% probability $F<F_{MSY}$) and it is not in an overfished condition (0% probability SB/SBF=0<LRP)" (Figure 6) (WCPFC-SC14 2018).

The team has not carried out a re-scoring for bigeye tuna as the latest assessment would not result in a reduction in score.

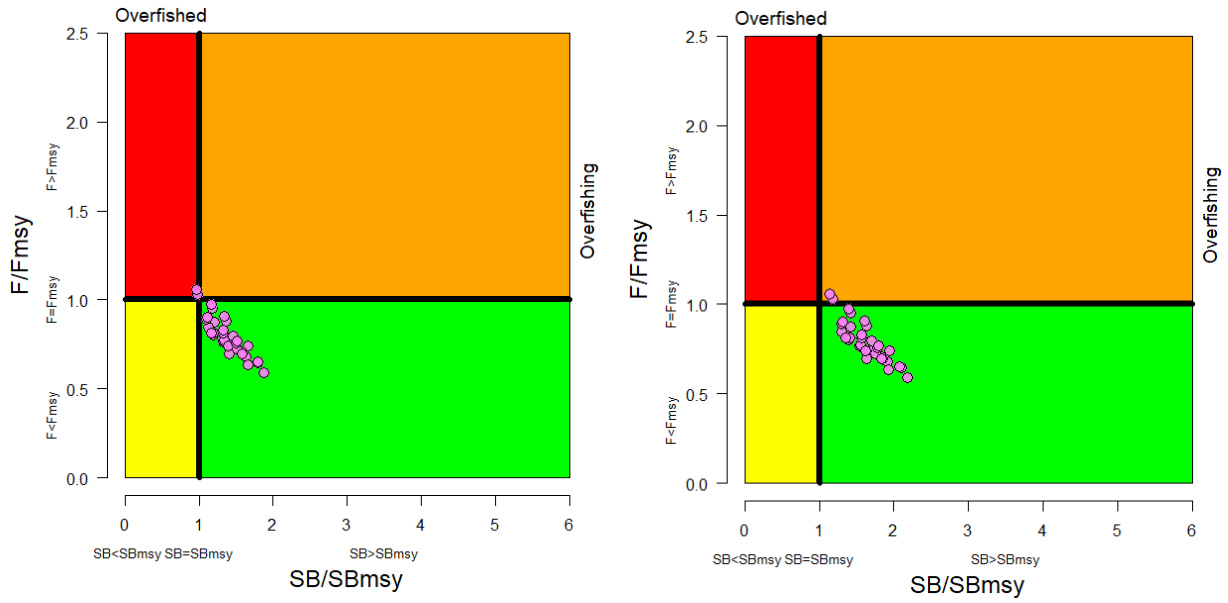


Figure 5: Kobe plot summarising the results for each of the models in the structural uncertainty grid. In the left panel, the points represent SBrecent/SBMSY, where SBrecent is the mean SB over 2012-2015. In the right panel, the points represent SBlatest/SBMSY, where SBlatest is from 2015. Source: WCPFC-SC14 2018.

3.2.5 Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish)

No changes were reported in fishery which might impact traceability or the ability to segregate between fish from the UoC and fish from outside the UoC.

3.3 Version details

The following versions of the MSC's fisheries program documents were used for this assessment (Table 4):

Table 4: Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	Version 2.1
MSC Fisheries Standard	Version 2.0
MSC General Certification Requirements	Version 2.3
MSC Surveillance Reporting Template	Version 2.1

4 Results

4.1 Surveillance results overview

4.1.1 Summary of conditions

The following table summarises the Conditions raised in the recertification of the PNA Tuna Fishery (Blyth-Skyrme *et al.,* 2018). Details of the progress made against the milestones are provided in Section 4.3.

Table 5: Summary of conditions

Condition number	Condition	PI	Status	PI original score	PI revised score
1	UoA 1: Skipjack tuna SIa) By the fourth surveillance audit, the client will need to demonstrate that the harvest strategy for skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	1.2.1	**On target**	70	**n/a**
2	UoA 1: Skipjack tuna SIa) By the fourth surveillance audit, the client will need to demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SIb) By the fourth surveillance audit, the client will need to provide evidence that the HCRs are likely to be robust to the main uncertainties. SIc) By the fourth surveillance audit, the client will need to demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	1.2.2	**On target**	60	**n/a**
3	UoA 2: Yellowfin tuna SIa) By the fourth surveillance audit, the client will need to demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	1.2.1	**On target**	70	**n/a**
4	UoA 2: Yellowfin tuna SIa) By the fourth surveillance audit, the client will need to demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SIb) By the fourth surveillance audit, the client will need to provide evidence that the HCRs are likely to be robust to the main uncertainties. SIc) By the fourth surveillance audit, the client will need to demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	1.2.2	**On target**	60	**n/a**

5	UoA 1: Skipjack tuna (NB. This is the same as Condition 6 for UoA 2.) SIa) By the fourth surveillance audit, the client will need to demonstrate that there is a strategy in place that is expected to ensure the UoA does not hinder the recovery of *Manta* rays and devil rays.	2.3.2	**On target**	75	**n/a**
6	UoA 2: Yellowfin tuna (NB. This is the same as for Condition 5 but for UoA 1.) SIa) By the fourth surveillance audit, the client will need to demonstrate that there is a strategy in place that is expected to ensure the UoA does not hinder the recovery of *Manta* rays and devil rays.	2.3.2	**On target**	75	**n/a**

4.1.2 Total Allowable Catch (TAC) and catch data

The tables below show the total WCPFC catch and the PNA Tuna Fishery' catches of skipjack tuna (Table 6) and yellowfin tuna (
Table 7).

Table 6: Catch data for the WCPFC and PNA skipjack tuna fishery – UoC 1.

WCPFC skipjack tuna catch	Year	**2017**	Amount	**1,624,162 t**
PNA skipjack tuna purse seine catch	Year	**2018**	Amount	**1,077,133 t**
PNA UoC skipjack tuna catch	Year	**2018**	Amount	**580,153 t**
PNA UoC share of total PNA skipjack purse seine catch	Year	**2018**	Amount	**54%**
PNA UoC share of WCPFC skipjack catch	Year	**2017**	Amount	**32%**

Table 7: Catch data for the WCPFC and PNA yellowfin tuna fishery – UoC 2.

WCPFC yellowfin tuna catch	Year	**2017**	Amount	**670,890 t**
PNA yellowfin tuna purse seine catch	Year	**2018**	Amount	**213,989 t**
PNA UoC yellowfin tuna catch	Year	**2018**	Amount	**155,370 t**
PNA UoC share of total PNA yellowfin purse seine catch	Year	**2018**	Amount	**72.6%**
PNA UoC share of WCPFC yellowfin catch	Year	**2017**	Amount	**23%**

4.2 Recommendations

No new Recommendations were raised at this Year 1 surveillance audit. The following tables detail the progress made against the three Recommendations set on the fishery at recertification in 2018. It is noted that these are 'non-binding'. With regards to expectations or requirements for making progress, but clients are encouraged to meets Recommendations within the spirit of the MSC Standard.

Recommendation 1 (Skipjack tuna – UoC 1 and Yellowfin tuna – UoC 2)

Performance Indicator	2.2.2 (SId)
Recommendation	SPC provided observer data showing that shark finning does occur at a low level in the PNAFTF. For each MSC audit, a Recommendation is set that the PNA provide a PNAFTF-specific enforcement and compliance summary report of CMM 2010-07 (CMM for sharks), CMM 2011-03 (CMM for oceanic whitetip sharks) and CMM 2013-08 (CMM for silky sharks). This should detail any contraventions of these CMMs that have occurred in the PNAFTF in the preceding year, the enforcement action taken as a result in each case, and any statutory or non-statutory approaches taken to further reduce the likelihood of any contraventions occurring.
Progress on Recommendation (Year 1)	The client provided a submission on shark finning to the Audit Team at the site visit (Section 7.2). The submission includes a description of the process undertaken within the WCPFC and PNA to monitor and enforce relevant shark finning regulations, as well as a detailed break-down of shark finning cases observed in the certified fishery for 2016 and 2017. As reported at recertification (Blyth-Skyrme *et al.,* 2018), the PNA Tuna Fishery is 100% observed, which means that if finning occurs at even a very low rate then it will be detected. This gives much greater confidence that the MSC requirements around shark finning, as interpreted (https://mscportal.force.com/interpret/s/article/Shark-finning-requirements-1527262010507), are being met in the PNA Tuna Fishery than if no finning was identified in a fishery with a low level of observer coverage. As noted in the reassessment of the PNA Tuna Fishery, a key part of the observed decline in shark finning appears to have been the adoption and enforcement of shark-finning regulations at the WCPFC level (e.g., CMM 2011-04 requires that oceanic whitetip sharks (*Carcharhinus longimanus*) are not retained in whole or in part; CMM 2013-08 requires that silky sharks (*Carcharhinus falciformis*) are not retained in whole or in part) and in the individual PNA countries (e.g., Kiribati Shark Sanctuary Regulations 2015 https://www.ffa.int/system/files/Shark_Sanctuary_Regulations_2015.pdf). Nevertheless, implementation and education around the rules can take time, and any regulation may be vulnerable to infringement by inexperienced individuals or new entrants to the fishery who are not versed fully in the fishery rules. The detailed data presented in Section 7.2 show that the number of individual cases of shark finning recorded annually has declined over time, from 266 in 2013 to 14 in 2016 (representing six separate vessel trips) and just three in 2017 (representing one vessel trip). This represents a very high level of compliance as a proportion of the trips that are undertaken annually in in the PNA Tuna Fishery. The PNAO also provided the Audit Team with an update on the approach taken to pursue appropriate sanctions in cases where finning was identified in the UoC. In summary, where a small number of sharks are finned, warnings may be issued rather than prosecutions being sought. However, more serious issues are taken up with the flag state, either directly or with follow-up by the PNAO. This represents appropriate sanction. In this regard, the PNA has recently established a Compliance Sub-Committee, which recommended an improvement in the reporting of non-compliance incidents between observers and compliance teams, and in the structure of communications between PNA coastal stats and flag states, including setting out a follow up process to ensure that actions are being taken. In summary, further progress has been made in the last year, and the level of shark-finning in the PNA Tuna Fishery in the most recent years has been very low. The fishery continues to perform at SG80 level of performance for PI 2.2.2 SId.

Recommendation 2 (Skipjack tuna – UoC 1 and Yellowfin tuna – UoC 2)

Performance Indicator	2.3.1 (SIc)
Recommendation	Although the number of pollution incidences from the 1,400-1,500 purse seine vessels considered in Richardson *et al.* (2015) report indicate that pollution from the PNAFTF fleet is highly unlikely to create unacceptable impacts, a Recommendation is set, that the client work to implement the second and third initiatives identified in the report, which are as follows: - *A regional outreach and compliance assistance programme on marine pollution prevention for fishing vessel crews, business operators and managers; and* - *Improvements in Pacific port waste reception facilities to enable them to receive fishing vessel wastes on shore.*
Progress on Recommendation (Year 1)	PNAO informed the Audit Team that a request had been submitted to the SPC to update the Richardson *et al.,* (2015) information regarding pollution incidents. The client noted that data from the purse seiners are readily available because of the high level of observer coverage, whereas other fleets have lower levels of observer coverage and there is therefore much greater uncertainty about the level of pollution derived from those fleets. WCPFC (2018) Conservation and Management Measure (2017-04) on Marine Pollution (https://www.wcpfc.int/doc/cmm-2017-04/conservation-and-management-measure-marine-pollution) was implemented on 1st January 2019. Amongst various items that take the issue of pollution management forward, this includes that WCPFC Commission Members, Cooperating Non-Members and Participating Territories (CCMs) are: a) Encouraged to ratify, accept, approve or accede to the annexes of MARPOL and the London Protocol at the earliest possible opportunity if they have not already done so, b) Shall prohibit their fishing vessels operating within the WCPFC CA from discharging any plastics (including plastic packaging, items containing plastic and polystyrene) but not including fishing gear, and c) Encouraged to prohibit their fishing vessels operating within the WCPFC CA from discharging i. oil or fuel products or oily residues into the sea; ii. garbage, including fishing gear, food waste, domestic waste, incinerator ashes and cooking oil; and iii. sewage, except as would be permitted under applicable international instruments. d) Requested to ensure adequate port reception facilities are provided to receive waste from fishing vessels A report by Bulman (2018) was also presented to the Audit Team at the site visit. This report was undertaken for the Forum Fishery agency (FFA) and presents a business model for reception of wastes from fishing vessels in the Pacific region. Waste is clearly a challenging issue to address, but it appears that good steps are being taken towards reducing and managing the problem. The fishery continues to perform at SG80 level of performance for PI 2.3.1 SIc, and the Audit Team will be interested in seeing further progress in coming years.

Recommendation 3 (Skipjack tuna – UoC 1 and Yellowfin tuna – UoC 2)

Performance Indicator	3.1.3 (SIa)
Recommendation	There are elements of the management system where it is not clear that the precautionary approach is applied in practice across all policy for all stocks. It is recommended that, specifically in the PNA, long-term objectives that reference the precautionary approach are explicitly adopted These should acknowledge the link of objectives between the WCPFC, the PNA and the individual Parties.
Progress on Recommendation (Year 1)	PNAO has reviewed all member national legislation to identify gaps (with a view to addressing the weakness identified at re-certification) including reference to the Precautionary Approach. While all member states are members of WCPFC, members are obligated (at national level) to apply precautionary management actions. Only two countries do not have explicit reference in their legislation to the PA, Tokelau and Palau (this was identified at the recertification off the fishery as well). Also the PNA instruments identified at recertification that do not refer explicitly to the PA (Nauru Agreement and Palau Arrangement) have not yet been revised, although the need for this is recognised by the PNA (noting that they do however follow the principles of the UNFSA under Article 6). The team were satisfied that the weaknesses in national legislation and the PNA instruments regarding the PA is recognised by the PNA and that efforts to strengthen the legislation in this regard was in process (recognising that changing instruments of this nature are time consuming and complex).The fishery continues to meet the SG80 requirement, here.

4.3 Conditions

No new Conditions were raised at this Year 1 surveillance audit. The following tables detail on the progress made against the six Conditions set on the fishery at recertification in 2018.

Condition 1 (Skipjack tuna – UoC 1)

Performance Indicator	1.2.1 (SIa)
Score	70
Justification	Current management measures are expected to ensure that fishing mortality and spawning biomass remain at levels that will achieve the stock management objective, meeting SG60 requirements. The basis for SG80 not being met is predominantly that some Hong Kong meeting participants considered that there is no clear linkage between potential catch and allocated effort, that the processes for determining VDS TAE and PAE are not transparent and that it is unclear how the TAE is determined, based on stock status advice. Overall, it was agreed at the harmonisation that for the WCPFC tuna fisheries, including those under the PNA's VDS, that there is insufficient evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving management objectives There has been progress in satisfying the requirements for this PI in recent years. CMM 2014-06 has been adopted, defining the approach for a harvest strategy with harvest controls and reference points to be adopted. A work plan for implementation was accepted at the 2015 WCPFC Commission meeting (see Appendix 8). Limit and target reference points have been adopted for skipjack. The assessors feel there is a strong case for this scoring issue being met. The MSC harmonisation meeting (Hong Kong, 21-22 April 2016) and subsequent discussions between the assessors and other CABs did not reach consensus on the scoring of this issue and the findings of the Hong Kong meeting stand, i.e. 1.2.1a meeting SG60 requirements only, and PI 1.2.1 having an overall score of 70.

Condition	By the fourth surveillance audit, demonstrate that the harvest strategy for skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.
Milestones	Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Section 7.3). Year 4: (Resulting score ≥80) • The client will need to provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving management objectives reflected in PI 1.1.1 SG80.
Client Action Plan	**NB: The PNA is not in agreement with the outcomes of the Hong Kong Harmonisation Meeting in respect to PI 1.2.1, and has submitted its evidence for reconsideration (See Appendix 5, this report). That said we understand the binding requirements to set out an Action Plan for this condition.** By Year 1-2018 PNA will: 1. Review the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 2. Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO skipjack tuna. 3. Support the implementation of a WCPFC Harvest Strategy Workplan that includes a process for development of a harvest strategy for WCPO skipjack tuna. 4. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO skipjack tuna management within the Tropical Tuna CMM. By Year 2-2019 PNA will: 1. Develop a strategy to address any shortfalls in the Year 1 Review of the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 for implementation for application until a HCR for WCPO skipjack tuna is implemented. 2. Work towards the adoption of a formal harvest strategy for WCPO skipjack tuna. 3. Implement actions to raise awareness of the need for any additional WCPFC skipjack tuna management measures among PNA Members. 4. Support the undertaking of a new assessment for WCPO skipjack tuna by 2020. By Year 3-2020, PNA will: 1. Prepare an assessment of how the harvest strategy for WCPO skipjack tuna responds to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 2. Provide evidence of support for the adoption of a formal harvest strategy for WCPO skipjack tuna. 3. Raise awareness of the need for any additional WCPFC skipjack tuna management measures among PNA Members. 4. Promote the adoption by PNA and/or the WCPFC of any additional management measures needed for WCPO skipjack tuna. By Year 4-2021, PNA will provide evidence to show that: 1. The harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy working together towards achieving management objectives reflected in the target and limit reference points.

Consultation on condition	As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.
Progress on Condition (Year 1)	A submission by PNA on progress in addressing this condition is at Section 7.2 (Report 1). In summary, PNA indicate that they have: a) Reviewed the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1; b) Simplified and clarified the manner in which the VDS TAE is determined; c) Continued to support the implementation of a harvest strategy process for the WCPO. d) Played a major role in the revision of Tropical Tuna CMM to enhance the effectiveness of measures for WCPO skipjack tuna management. As noted in the re-certification report (Box 1, Harmonisation Section, Blyth-Skyrme et al. 2018), the score of 60 for PI 1.2.1 SIa was determined at a harmonisation meeting in Hong Kong in early 2016; participants at the meeting considered that there was no clear linkage between potential catch and allocated effort, that the processes for determining VDS TAE and PAE were not transparent, and that it was unclear how the TAE was determined, based on stock status advice. Neither the Team Leader (i.e. Rob Blyth-Skyrme) nor the P1 expert (i.e. Kevin McLoughlin) for the PNA Tuna Fishery reassessment were present for the Hong Kong meeting, but in keeping with MSC requirements for harmonisation, and because P1 is scored for the whole stock (such that measures to score 80 need to be applied and effective for the whole stock), PI 1.2.1 SIa for skipjack tuna and yellowfin tuna was scored consistent with other WCPO tuna fisheries as having met SG60 requirements but not SG80. PNA disagreed with this outcome, in particular for PI 1.2.1a for skipjack tuna (see CAP, above), and has made submissions to explain this position to Assessment Teams undertaking some of the subsequent MSC assessments of skipjack in the WCPO. In April 2017, PNA filed an objection to a Final Report for Talley's New Zealand Skipjack Tuna Purse Seine fishery, objecting to the scoring of PI 1.2.1 at 70 rather than at 80. The objection proceedings did not result in a change to Talley's or harmonized scores. More recently, PNA submitted a stakeholder comment for consideration in the MSC assessment of the Western Pacific Sustainable Tuna Alliance (WPSTA) skipjack and yellowfin free school purse seine fishery, articulating their position regarding the scoring of 1.2.1a for skipjack (see Appendix 3 of the WPSTA Public Certification Report (WPSTA 2018). The WPSTA assessment team (and other teams assessing the skipjack harvest strategy), have concluded that deficiencies in the harvest strategy identified previously remain (resulting in the PI 1.2.1 score of 70), particularly while there was no harvest control rule. A core concern identified in the WPSTA PCR under PI 1.2.1 relative to PNA is that there is a lack of a clear link between the Party Allowable Effort (PAE) or Total Allowable Effort (TAE) and scientific advice on stock status. In addition to the Talley's objection and the submission to the WPSTA, PNA have provided further comment on this issue at Annex 1. The Audit Team for the PNA Tuna Fishery reviewed information again this year, including information collected and collated since the fishery was recertified, and agree that there is merit in the position put by PNA for PI 1.2.1, especially in relation to the link between the PAE and scientific advice on stock status. The origin of the stated concern that a clear link between the PAE and scientific advice on stock status is lacking appears to be the first MSC assessment of the PNA unassociated fishery (Banks et al. 2011) which comments on this lack of a clear link as being a weakness of the VDS. This identified weakness was a factor in a condition on the original assessment for PI 3.2.2 on decision-making processes. The condition indicated that in meeting its requirements, PNA may consider "*The link between the VDS TAEs and WCPFC requirements and the scientific advice should be clearly established by the PNA. Records of meetings should demonstrate discussion on VDS TAEs, that scientific advice is incorporated into the decision-making process, and that PNA actions are being agreed upon and implemented*". It is noted that this condition was closed at the 2nd surveillance audit for the fishery in December 2013. PNA argue that there have been changes since the origin al assessment of the fishery which clarify the link between the TAE and the scientific advice on stock status. In its submission to the WPSTA MSC assessment, PNA provide a number of statements which they believe support their position. As indicated above, those arguments have not been accepted as a reason to change the harmonised scoring for PI 1.2.1, hence are

not repeated in detail here, though there is little commentary by CABs on the statements made by PNA. Annex 1 provides additional comment from PNA on recent developments on the issue. Under V2.1 where no agreement is reached, the lowest score is applied meaning no change to scores. PNA outline the steps involved in the preparation of CMM 2017-01 and CMM 2018-01 which are described by the Commission as measures to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks in accordance with the agreed work plan for the adoption of harvest strategies under CMM 2014-06. These steps demonstrate the scientific input to the development of the CMMs and PNA's role in their development. In Annex 1, PNA acknowledge that there were some complexities in the determination of the TAE but suggest that these have now been simplified to make the process of determining the TAE more transparent, for example, effort limits have been reformulated as numbers of days rather than the previously used 2010 effort levels.

Effort creep

An additional concern raised in relation to 1.2.1a for skipjack stated in the WPSTA PCR is "how the VDS will deal with evidence of effort creep from increasing size of fishing vessels and increases in the number of sets per fishing day and tonnage caught per fishing day". Effort creep for purse seine fisheries is acknowledged in the skipjack stock assessments as an issue to be dealt with. At SC12, candidate indicators of effort creep in the WCPO purse seine fishery were reviewed at the request of the PNA (Pilling et al. 2016). Muller et al. (2018) and VDSTSC (2019) provide an updated examination of the candidate effort creep indicators. Three potential proxies for effort creep are examined:

- Trends in tuna catch levels, catch rates, and alternative fishing effort values;
- Estimates of trends in vessel size and other characteristics;
- Trends in estimated catchability from WCPFC stock assessment models.

The details of the findings for these proxies are found in the cited references. VDSTSC (2019) indicates that there are recent positive trends in the majority of effort creep indicators and that further work is planned to evaluate effort creep.

As summarised in VDSTSC (2019): "*Although key indicators show increasing trends, uncertainty remains given the difficulty in tying changes in indicators back to 'effective effort'*. While work is ongoing to identify and evaluate effort creep, an alternative approach is to develop management approaches, including harvest control rules, that can 'automatically' adjust for effort creep or that can function well despite the difficulties in quantifying it.

Within the context of the PNA VDS, the Parties must consider whether any observed effort creep is 'detrimental to the fishery' and whether any management action is necessary. Possibly the biggest risk to the VDS and the fishery from an effort creep perspective is that effort creep is masking a declining stock. In situations where stock status indicators such as CPUE are hyperstable, changes in the biomass tend to be detected long after the biomass has declined to a point at which significant management action is required to rebuild it. In this context, disentangling the changes in underlying biomass from stability in CPUE and changes in effective effort is essential. Work to resolve this should be given a high priority, as should identifying harvest control rules that mitigate the effect of effort creep or define management actions that are insensitive to its effects.

Within the VDS, a vessel day varies according to the size of the vessel. One vessel day counts as 0.5 VDS days for vessels of overall length <50m; a vessel >80m overall length must buy 1.5 VDS days per day fishing. PNA considers that this acts as a built-in disincentive to effort creep. Annex 1 of VDSTSC (2019) provides figures comparing patterns of CPUE by vessel length from logbooks for two periods, 2013 to 2017 and 2015 to 2017. These figures reveal the decline in the number of vessels >80m. The figures do not suggest that CPUE has changed greatly with the entry of more vessels <80m. Nevertheless, dealing with effort creep is an ongoing issue and an important component of harvest control rule development.

Bigeye tuna

Stock assessment of bigeye tuna in 2017 indicates that it is not overfished and overfishing is not occurring. However, prior to these assessments, indications were that the species was close to its limit reference point. A perceived lack of action to reduce fishing mortality on bigeye tuna at the time of this scientific advice on its status is also cited by some CABs as reason for SI 1.2.1a not being met for skipjack despite its healthy status, on the basis that it reduces the level of confidence that the harvest strategy would be responsive to the state of the stock or that the elements will work together when required to do so to achieve the management objectives.

PNA (Annex 1) suggest that although it took time for actions to be agreed, effective actions were progressively introduced to reduce effort and catch when the scientific advice was that the stock was overfished through FAD closures adopted in CMMs. Annex 1 shows a figure from an SPC presentation to the 24th annual meeting of the Parties to the Palau Arrangement (March 2019) indicating the reductions in bigeye catch due to the FAD closures, suggesting an overall reduction of 22% for the period 2009-2017.

It should be noted that the latest time period for the most recent bigeye assessment (2017 and the 2018 update) is 2015, hence there is no direct information about the impact of the CMMs after that time period (other than projections).

The measures introduced in the tropical tuna CMMs do suggest that the harvest strategy was responding to the scientific advice on the state of the bigeye stock.

Lack of a harvest control rule and PI 1.2.1

Some CABs have suggested that SI 1.2.1a cannot meet SG80 requirements without an agreed harvest control rule having been adopted. For example, the WPSTA PCR (p11) states that "*In Principle 1, two of the PIs (1.2.1 and 1.2.2 for both skipjack and yellowfin) received scores under SG80, resulting in four conditions. Both conditions are rooted in a lack of a clear harvest control rule linked to the status of the skipjack and yellowfin stocks*."

Whilst it is clearly preferable that a formal HCR is adopted, the Audit Team does not believe that a condition is necessarily required for both PI 1.2.1 and PI 1.2.2 without this having happened, and that PI 1.2.1 can meet SG80 requirements prior to the adoption of an agreed HCR.

Effectiveness of current harvest strategy

As shown in Annex 1, the 4 major tuna species in the WCPO continue to be not overfished and not subject to overfishing. This could be taken as being indicative of an effective harvest strategy, but at a minimum it indicates that the harvest strategy as it stands has not resulted in poor outcomes for stock status. There is considerable work being undertaken for the further development of the WCPO harvest strategy to satisfy the requirements of the CMM 2014-06 workplan. For example, a Special WCPFC Intersessional Meeting to Progress the Draft Bridging Measure for Tropical Tunas (for CMM 2017-01, CMM 2018-01), was held in August 2017. As a result, SPC was tasked with evaluating the likely consequences of a range of different management options reflecting the approaches to be adopted in the CMMs for skipjack, yellowfin and bigeye, based on the latest assessments for each stock (SPC 2017). A series of options were evaluated based on the probability of future (2045) biomass and fishing mortality in relation to reference points. Uncertainty was captured using deterministic projections from each of the stock assessment models within the 'uncertainty grid' used by the Scientific Committee to provide advice (bigeye: 72 models, yellowfin: 48 models, skipjack: 54 models). Future catchability of each fleet within the model was assumed to be constant at the level estimated in the final year of the stock assessment (i.e. no future effort creep is assumed). For skipjack, 2013-15 purse seine effort conditions (longline fishing levels have little influence on skipjack stock status) are predicted to maintain the spawning biomass depletion around the target reference point ($0.5SB_{F=0}$). Median F/F_{MSY} falls slightly compared to that estimated within the assessment, while there is no risk of the stock falling below the LRP, or of fishing mortality increasing above F_{MSY} levels.

Although further development of the harvest strategy is required and the projections discussed above do not capture the full range of uncertainty, indications are that the harvest strategy for skipjack tuna is effective.

The required elements of the harvest strategy are set out in CMM 2014-06 (operational objectives; target and limit reference points; acceptable levels of risk of not breaching limit reference points; monitoring strategy; harvest control rules; evaluation of harvest control rules against management objectives). Elements other than the harvest control rules are in place under the current harvest strategy. The SG80 requirement is that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives. Information above suggests that WCPFC decision-making is informed by the evaluation of different options and that the harvest strategy has been responsive. The approach taken in the development of CMM 2017-01 and CMM 2018-01 show that PNA and WCPFC work together and the PNA VDS is incorporated into the measures adopted.

Outcome

A coordinated approach was agreed by the different CABs involved in tuna certifications regarding meeting conditions on tuna fisheries. This was submitted as a Variation Request in December 2018 and subsequently accepted by the MSC in February 2019 (https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=p3uFTqdX1oHTX5nuicz1vOEncR9PBqQh0eNLCSnYIJHaGrGit1IU0FIfaxlkZP/D). More details are provided in Section 7.3 of this

	report). Notwithstanding this Variation Request, the above information suggests that consideration could be given to re-scoring PI 1.2.1 SIa as meeting the SG80 requirements. However, after LR contacted other CABs involved in MSC tuna fishery certifications and provided the rationale above, and it was reported to the Audit Team by LR that there is not universal agreement that the WCPO skipjack tuna harvest strategy meets SG80. As such, under MSC process v.2.1, the score cannot be changed and it remains at SG60 (PB1.3.3, MSC 2018). In any case, PNA continue to play a very important role in the WCPO skipjack tuna fishery and provide continued support for the WCPO harvest strategy implementation process. PNA has, along with other FFA Members, led an effort to see greater priority given to harvest strategy development within the WCPFC processes. The CMM 2014-06 harvest strategy workplan has been amended several times since it was first adopted. WCPFC adopted further updates in 2017 (WCPFC14, 2018, Attachment L) and again in 2018 (WCPFC15, 2019; Attachment I), however there were no changes to the workplan for skipjack tuna. The harvest strategies and control rules for skipjack are still scheduled for completion within the condition timeline/certificate cycle and this aspect of the condition remains on-target. WCPFC15 agreed that the annual meeting in 2019 would be a 6-day meeting with additional time devoted for the Commission to discuss harvest strategies.
Status	Good progress has been made on the Client Action Plan and Milestone 1, and so this Condition is on target.
Additional information	See Section 7.2 client submissions and Section 7.3 on harmonisation.

Condition 2 (Skipjack tuna – UoC 1)

Performance Indicator	1.2.2 (SIa, SIb, SIc).
Score	60
Justification	Scoring issue (a): WCPFC CMM 2014-06 established a process for the adoption of harvest control rules, however, well-defined harvest control rules are not currently in place and SG80 is not met. Following the MSC Notice, "Scoring of 'available' Harvest Control Rules (HCRs) in CRv1.3 fisheries" of 24th November 2014, PI 1.2.2 SI(a) has been scored using CRv2.0 provisions for SG60 (as above) scoring for a number of fisheries, including several tuna fisheries. MSC have also provided further comment on HCRs with their notice of 16 December, 2015 "Interpretation on Harvest Control Rules (HCR)". MSC CRv2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level (MSC 2014). 1) CR v2.0 SA2.5.2a provides for HCR being recognised as available, "…if stock biomass has not previously been reduced below B_{MSY} or has been maintained at that level for a recent period of time". The skipjack assessment provides probabilistic estimates of parameters of interest, and uncertainty has been extensively explored using a crosswise grid of sensitivity tests. Previous skipjack assessments indicate that SB has not been reduced below SB_{MSY}. The 2014 assessment estimates of spawning biomass (2011) are also above the level that will support the MSY. WCPFC-SC (2014a) also indicated that "Future status under status quo projections (assuming 2012 conditions) was robust to assumptions on future recruitment. Under either assumption, spawning biomass remained relatively constant and it is exceptionally unlikely (0%) for the stock to become overfished ($SB_{2032}<0.2SB_{F=0)}$ or

for the spawning biomass to fall below SB_{MSY}, and it is exceptionally unlikely (0%) for the stock to become subject to overfishing ($F>F_{MSY}$)".

An updated 2016 assessment provides conclusions that are largely consistent with previous assessments (McKechnie *et al.,* 2016). The reference case model of the 2016 stock assessment estimated the 2015 level of spawning potential to be at approximately 58% of the unfished level for the reference case model, well above the LRP of $20\%SB_{F=0}$ agreed by WCPFC (WCPFC 2016b). $SB_{latest}/SB_{F=0}$ was relatively close to the adopted interim target reference point ($0.5SB_{F=0}$) for all models explored in the assessment (structural uncertainty grid: median = 0.51, 95% quantiles = 0.39 and 0.67) (WCPFC 2016b).

The CRv2.0 SA2.5.2a condition is therefore met and HCRs are considered to be 'available'.

2) CRv2.0 SA2.5.3b provides for HCR being recognised as available if, "…there is an agreement or framework in place that requires the management body to adopt HCRs before the stock declines below BMSY CMM 2014-06 sets out the principles and elements for harvest strategies to be developed and implemented, including requirements for target and limit reference points and decision rules or ("harvest control rules"), with a clear intention that harvest control rules, tested using simulation approaches, will be part of the implemented harvest strategies. The CMM also included a requirement to adopt a workplan with an indicative timeframe no later than 2015 Commission meeting, with application to skipjack tuna, bigeye tuna, yellowfin tuna, Pacific bluefin tuna, and South and North Pacific albacore tuna. In fact, work towards establishing reference points and harvest control rules is already well underway through the Management Objectives Workshop process (a TRP and LRP have been adopted for skipjack tuna).

Following discussions at WCPFC12 a workplan was agreed (WCPFC 2015, Attachment Y). The Commission tasked the SC with support from the Scientific Service Provider to undertake the activities specified in the agreed workplan (included in this report at Appendix 8).

As indicated above, the current stock assessment and projections of future stock size indicate that the stock will remain above SSBMSY over the period agreed in the CMM 2014-06 workplan. The CRv2.0 SA2.5.3b requirement is therefore met.

Scoring issue (b):

HCRs are still under development and SG80 is therefore not met.

Scoring issue (c):

The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.

1) CR v2.0 SA2.5.6 requires that as part of the evaluation of the effectiveness of HCRs, "…teams shall include consideration of the current levels of exploitation in the UoA, such as measured by the fishing mortality rate or harvest rate, where available". MSC CRv2.0 SA2.5.6 guidance (GSA2.5.2-7) states that "Evidence that current F is equal to or less than F_{MSY} should usually be taken as evidence that the HCR is effective".

Evidence to support this is provided by the 2014 and 2016 assessments indicating that overfishing is not occurring ($F_{current}/F_{MSY} < 1$ across the grid of model runs) (WCPFC 2014a, WCPFC 2016b).

2) In relation to SIa, above, CRv2.0 SA2.5.5b, requires that where HCRs are recognised as 'available "A description of the formal agreement or legal framework that the management body has defined, and the indicators and trigger levels that will require the development of HCRs" shall be provided. As noted at SIa, CMM 2014-06 sets out elements of harvest strategies to be developed and implemented. The WCPFC agreed to adopt a work plan at the 2015 Commission meeting, with potential revision in 2017, with application to skipjack tuna, bigeye tuna, yellowfin tuna, Pacific bluefin tuna, and South and North Pacific albacore tunas. Work to establish reference points and harvest control rules has been in progress over recent years through the Management Objectives Workshop (MOW) process. WCPFC has adopted an explicit LRP and TRP for skipjack. Following discussions at WCPFC12 a workplan was agreed (WCPFC 2015a, Attachment Y). No additional trigger is required for the Development of HCRs is required.

The requirements detailed above are met and a score of 60 is awarded. SG80 refers to the tools 'in use' in the fishery. Given SIa finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met.

Condition	SI a) By the fourth surveillance audit, demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the fourth surveillance audit, provide evidence that the HCRs are likely to be robust to the main uncertainties. SI c) By the fourth surveillance audit, demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Milestones	Years 1, 2 and 3: (Resulting score 60) • The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10). Year 4: (Resulting score ≥80) • The client will need to provide evidence that well-defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
Client Action Plan	By Year 1-2018 PNA will: 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC; 2. Participate in work to refine the initial list of performance indicators for the Tropical Purse Seine Fisheries for the purpose of the evaluation of HCRs agreed at WCPFC13 3. Support WCPFC preparatory MSE work for the tropical purse seine fishery 4. Promote support by PNA Member governments for the adoption and application of a HCR for skipjack; and 5. Collaborate with other stakeholders to support work towards adoption of a HCR for skipjack by the WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies. By Year 2-2019, PNA will: 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC 2. Support MSE work for the Tropical Purse seine Fishery 3. Promote support by PNA Members for the adoption and application of a HCR for skipjack; and 4. Collaborate with other stakeholders to support work towards adoption by the WCPFC of a HCR for skipjack in accordance with the WCPFC workplan for the adoption of harvest strategies. By Year 3-2020, PNA will: 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC 2. Support MSE work for the Tropical Purse seine Fishery 3. Promote support by PNA Members for the adoption and application of a HCR for skipjack; and 4. Collaborate with other stakeholders to support the adoption by the WCPFC of a HCR for skipjack in accordance with the WCPFC workplan for the adoption of harvest strategies. By Year 4-2021, PNA will provide evidence that: 1. Well-defined harvest control rules, under PNA or WCPFC, taking into account the main uncertainties, are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the point of recruitment impairment is approached, and are expected to keep the stock fluctuating around a target level consistent with (or above) MSY; and

	2. The tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Consultation on condition	As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.
Progress on Condition (Year 1)	As indicated at Section 7.2 (Report 2), PNA has: • Continued to work closely with SPC on the development of HCRs for skipjack – see for example SC12-MI-WP-06; • Participated fully in refining performance indicators for tropical purse seine fisheries, including participating in the Small Working Group on Management Objectives at WCPFC13 for the purpose of the evaluation of harvest control rules set out in Attachment M to the WCPFC16 report. PNA continues to participate in developing the performance indicators which will be further discussed at a PNA HCR Workshop to be held June 3-5, 2019; • Supported preparatory MSE work by SPC both in PNA meeting discussions on MSE and at the WCPFC Scientific committee; • Supported and promoted discussion on HCRs and Harvest Strategies, which are a standing item on the agendas of the annual meetings of the VDS Technical and Scientific committee and the PNA; • Supported continuing work on adoption of a HCR for skipjack tuna with other stakeholders at the WCPFC. These actions include actions taken both as PNA and as part of the wider FFA group. The client submission (Section 7.2, Reports 1 and 2) contains references to documents that provide evidence of the role undertaken by PNA and its members. A harvest control rule for skipjack is due to be adopted in 2020.
Status	Good progress has been made on the Client Action Plan and Milestone 1, and so this Condition is on target.
Additional information	See Section 7.2 client submissions and Section 7.3 on harmonisation.

Condition 3 (Yellowfin tuna – UoC 2)

Performance Indicator	1.2.1 (SIa)
Score	70
Justification	There has been progress in satisfying the requirements for this PI in recent years. CMM 2014-06 has been adopted, defining the approach for a harvest strategy with harvest controls and reference points to be adopted. A work plan for implementation was accepted at the 2015 WCPFC Commission meeting (see Appendix 8). A limit reference point has been adopted for yellowfin. To date, the measures in place have achieved stock management objectives reflected in PI 1.1.1 SG80 and assessment projections indicate they will continue to do so, meeting SG60 requirements. However, there has been a lack of progress in the development of management measures for some components of the overall fishery for yellowfin. The elements of the harvest strategy are not considered to be working together towards achieving stock management objectives reflected in PI 1.1.1 SG80, hence SG80 requirements for this scoring issue are not met.

	The score for this PI is in agreement with the outcomes agreed at the MSC harmonisation meeting (Hong Kong 21-22 April 2016).
Condition	By the fourth surveillance audit, demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.
Milestones	<u>Years 1, 2 and 3: (Resulting score 70)</u> • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10). <u>Year 4: (Resulting score ≥80)</u> • The client will need to provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving management objectives reflected in PI 1.1.1 SG80.
Client Action Plan	<u>By Year 1-2018, PNA will:</u> 1. Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO yellowfin tuna. 2. Support the adoption of a WCPFC Harvest Strategy Workplan that includes 3. a process for development of a harvest strategy for WCPO yellowfin tuna. 4. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO yellowfin tuna management. <u>By Year 2-2019, PNA will:</u> 1. Support the implementation of a harvest strategy process for the WCPFC, including the adoption of a harvest strategy for WCPO yellowfin tuna. 2. Work towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. 3. Implement actions to raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 4. Undertake activities either directly by PNA or through FFA to ensure appropriate focus is given to more effective measures for WCPO yellowfin tuna management at the 14th Session of the WCPFC (December 2017). <u>By Year 3-2020, PNA will:</u> 1. Provide evidence to illustrate working towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. 2. Raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 3. Prepare, with the support of SPC, an assessment of how the elements of the harvest strategy for WCPO yellowfin tuna work together to achieve the management objectives for this fishery. 4. Promote the adoption by PNA and/or the WCPFC of any additional management measures needed for WCPO yellowfin tuna. <u>By Year 4-2021, PNA will provide evidence to show that:</u> *1.* The harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy working together towards achieving management objectives reflected in the target and limit reference points.
Consultation on condition	As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.

Progress on Condition (Year 1)	Progress for this Condition is essentially as described for Conditions 1 and 2, above. The working papers prepared for WCPFC15 provide evidence of research and discussions that are taking place at WCPFC in relation to harvest strategy implementation. The client submission (Section 7.2,Report 1) contains references to documents that provide evidence of the role undertaken by PNA and its members. The CMM 2014-06 harvest strategy workplan has been amended several times since it was first adopted. WCPFC adopted further updates in 2017 (WCPFC14, 2018, Attachment L) and again in 2018 (WCPFC15, 2019; Attachment I). Changes to the workplan at WCPFC14 relevant to yellowfin were: • The step that the "SC provide advice on a range of performance indicators to evaluate performance of harvest control rules" in 2017 was amended to state that this advice would only be for the Tropical Longline Fishery. • The scheduled 2018 agreement to a TRP in 2018 for yellowfin was amended to propose only that there be: "SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT." • The agreement on a TRP was been deferred to 2019. • An extension of activities to 2021. In 2020 and 2021 the workplan is expecting that the Commission "consider advice on progress towards harvest control rules", with a harvest control rule to be adopted in 2021. At WCPFC15 in December 2018, activities to develop harvest control rules and management strategy evaluation for yellowfin were moved from 2018 to 2019. An important step in the workplan is that at the 2019 Commission meeting there is an agreed target reference point for yellowfin. The harvest strategies and control rules for yellowfin are still scheduled for completion within the condition timeline/certificate cycle and this aspect of the condition remains on-target. However, further delays in the workplan will lead to problems in the condition being closed before the end of the certification period. WCPFC15 agreed that the annual meeting in 2019 would be a 6-day meeting with additional time devoted for the Commission to discuss harvest strategies.
Status	Good progress has been made on the Client Action Plan and Milestone 1, and so this Condition is on target.
Additional information	None.

Condition 4 (Yellowfin tuna – UoC 2)

Performance Indicator	1.2.2 (SIa, SIb, SIc)
Score	60
Justification	<u>Scoring issue (a):</u> WCPFC CMM 2014-06 established a process for the adoption of harvest control rules, however, well-defined harvest control rules are not currently in place and SG80 is not met. Following the MSC Notice, "Scoring of 'available' Harvest Control Rules (HCRs) in CRv1.3 fisheries" of 24th November 2014, PI 1.2.2 SI(a) has been scored using CRv2.0 provisions for SG60 (as above) scoring for a number of fisheries, including several tuna fisheries. MSC have also provided further

comment on HCRs with their notice of 16 December, 2015 "Interpretation on Harvest Control Rules (HCR)".

MSC CRv2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level (MSC 2014).

1) CRv2.0 SA2.5.2a provides for HCR being recognised as available, "…if stock biomass has not previously been reduced below B_{MSY} or has been maintained at that level for a recent period of time".

The yellowfin tuna stock assessment provides probabilistic estimates of parameters of interest, and uncertainty has been extensively explored using a crosswise grid of sensitivity tests. Previous yellowfin tuna assessments indicate that SB has not been reduced below SB_{MSY}. The 2014 assessment estimates of spawning biomass (2011) are also above the level that will support the MSY (SB_{latest}/SB_{MSY} = 1.24 for the base case and from 1.05 to 1.51 across key models of the grid used in the assessment) (WCPFC 2014a). WCPFC (2014a) also indicated that "Future status under status quo projections (assuming 2012 conditions) depends on assumptions on future recruitment. When spawner recruitment relationship conditions are assumed, spawning biomass is predicted to increase and the stock is exceptionally unlikely (0%) to become overfished ($SB_{2032}<0.2SB_{F=0}$) or to fall below SB_{MSY}, or to become subject to overfishing ($F>F_{MSY}$). If recent (2002‑2011) actual recruitments are assumed, spawning biomass will remain relatively constant, and the stock is exceptionally unlikely (0%) to become overfished or to become subject to overfishing, and it was very unlikely (2%) that the spawning biomass would fall below SB_{MSY})" (WCPFC 2014a). The CRv2.0 SA2.5.2a condition is therefore met and HCRs are considered to be 'available'.

CRv2.0 SA2.5.3b provides for HCR being recognised as available if, "…there is an agreement or framework in place that requires the management body to adopt HCRs before the stock declines below B_{MSY}".

WCPFC CMM 2014-06 sets out the principles and elements for harvest strategies to be developed and implemented, including requirements for target and limit reference points and decision rules or ("harvest control rules"), with a clear intention that harvest control rules, tested using simulation approaches, will be part of the implemented harvest strategies. The CMM also included a requirement to adopt a workplan with an indicative timeframe no later than 2015 Commission meeting, with application to skipjack tuna, bigeye tuna, yellowfin tuna, Pacific bluefin tuna, and South and North Pacific albacore tunas.

Work towards establishing reference points and harvest control rules is well underway through the Management Objectives Workshop process (a LRP has been adopted for yellowfin tuna and candidate TRPs are under consideration). Following discussions at WCPFC12 a workplan was agreed (WCPFC 2015, Attachment Y). The Commission tasked the SC with support from the SPC to undertake the activities specified in the agreed workplan (included in this report at Appendix 8).

As indicated above, the current stock assessment and projections of future stock size indicate that the stock will remain above SSBMSY over the period agreed in the CMM 2014-06 workplan. The CRv2.0 SA2.5.3b requirement is therefore met. In summary, as conditions at both CR v2.0 SA2.5.2a and CR v2.0 SA2.5.3b are met, a score of SG60 is awarded.

Scoring issue (b):

HCRs are still under development and SG80 is therefore not met.

Scoring issue (c):

The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.

1) Evidence to support this is provided by the 2014 assessment indicating that overfishing is not occurring (Fcurrent/FMSY < 1 across the grid of model runs) (WCPFC 2014a).

2) In relation to SIa, above, CRv2.0 SA2.5.5b, requires that where HCRs are recognised as 'available "A description of the formal agreement or legal framework that the management body has defined, and the indicators and trigger levels that will require the development of HCRs" shall be provided.

As noted at SIa, CMM 2014-06 sets out elements of harvest strategies to be developed and implemented. The WCPFC agreed to adopt a work plan at the 2015 Commission meeting, with potential revision in 2017, with application to skipjack, bigeye, yellowfin, Pacific bluefin, and South and North Pacific albacore tunas. Work to establish reference points and harvest control rules has been in progress over recent years through the Management Objectives Workshop (MOW) process. WCPFC

	has adopted an explicit LRP for yellowfin and candidate TRPs are being considered. Following discussions at WCPFC12 a workplan was agreed (WCPFC 2015a, Attachment Y). No additional trigger is required for the development of HCRs is required. The requirements detailed above are met and a score of 60 is awarded. SG80 refers to the tools 'in use' in the fishery. Given SIa finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met.
Condition	SI a) By the fourth surveillance audit, the client shall demonstrate that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the fourth surveillance audit, the client shall provide evidence that the HCRs are likely to be robust to the main uncertainties. SI c) By the fourth surveillance audit, the client shall demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Milestones	<u>Years 1, 2 and 3: (Resulting score = 60)</u> • The client will need to provide evidence that it is actively working to ensure that well defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as LRPs are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10). <u>Year 4: (Resulting score ≥80)</u> • The client will need to provide evidence that well-defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and
Client Action Plan	<u>By Year 1-2018 PNA will:</u> 1. Support and participate in WCPFC work on performance indicators to evaluate performance of harvest control rules for yellowfin tuna WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies. 2. Promote support by PNA Member governments for the adoption and application of a HCR for yellowfin tuna. 3. Collaborate with other stakeholders to support work towards adoption of a HCR for yellowfin tuna by the WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies; and. 4. Act to raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. <u>By Year 2-2019 PNA will:</u> 1. Support and participate in WCPFC work on a TRP for yellowfin tuna and support the adoption of a TRP for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies. 2. Support MSE work for yellowfin tuna. 3. Collaborate with other stakeholders to support work towards adoption by the WCPFC of a HCR for skipjack in accordance with the WCPFC workplan for the adoption of harvest strategies; and 4. Support any additional WCPFC management measures needed for WCPFC yellowfin tuna. <u>Year 3-2020, PNA will:</u> 1. Support MSE work for yellowfin tuna. 2. Support and participate in WCPFC work on a HCR for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies. 3. Collaborate with other stakeholders to support the adoption by the WCPFC of a HCR for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies.

	Year 4-2021, PNA will provide evidence that: 1. Well-defined harvest control rules, taking into account the main uncertainties, are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the point of recruitment impairment is approached, and are expected to keep the stock fluctuating around a target level consistent with (or above) MSY; and 2. The tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Consultation on condition	As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.
Progress on Condition (Year 1)	Progress for this Condition is as described for the Conditions above. The client submission (Section 7.2, Reports 1 and 2) contains references to documents that provide evidence of the role undertaken by PNA and its members. Although there were changes to the harvest strategy workplan at WCPFC14, a harvest control rule for yellowfin is still due to be adopted in 2021. Further delays in the harvest strategy workplan will lead to problems in the condition being closed before the end of the certification period.
Status	On target.
Additional information	None.

Condition 5 (Skipjack tuna – UoC 1)

Performance Indicator	2.3.2 (Sib)
Score	75
Justification	Observer data indicate that the number interactions between the PNAFTF and *Manta* and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO, pers. comm.). It is not clear to what extent *Manta* and devil rays are retained in the PNAFTF, but retention generally seems unlikely. Croll *et al*. (2015) noted that while extrapolated from limited observer data, the relatively high mobulid bycatch rate and intensity of effort suggest the WCPO purse seine fisheries have a large mobulid bycatch compared with others. At the 12th WCPFC Scientific Committee (SC) meeting (SC12), the designation of Manta and Mobula species as 'key shark species' was proposed, which would result in improved data collection and reporting of the *Manta* and *Mobula* bycatch. This proposal was supported by FFA members, but achieved only limited support in the SC overall. Amongst a range of recommendations, SC12 recommended that purse seine observer training programmes add emphasis to the identification of *Mobula* species as part of their curricula (WCPFC 2016b). SC12 also recommended that the WCPFC considers adopting guidelines for safe release of *Manta* and *Mobula* rays caught incidentally in WCPFC fisheries, and a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing sharks and rays, including *Manta* and *Mobula* species (Poisson *et al*. 2012). However, there is nothing in place for ray species consistent with the requirements to release silky shark, oceanic whitetip shark, or whale shark. Overall, there are considered to be measures in place that are expected to ensure the UoA does not hinder the recovery of devil rays and manta rays, but it is not clear that together they comprise a

	strategy to manage and minimise impacts. The fishery meets SG60 but not SG80 and a Condition is introduced.
Condition	SIb) By the third annual surveillance audit, the client shall demonstrate that there is a strategy in place that is expected to ensure the UoA does not hinder the recovery of Manta and devil rays as ETP species.
Milestones	Year 1: (Resulting score = 75) • At the first annual surveillance audit, the client will need to present a plan (including timeline) showing how a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays will be implemented. • The client will need to provide evidence that available information on Manta and devil rays is being considered in developing the strategy, including species identification and recording where appropriate. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed. Year 2: (Resulting score = 75) • Evidence of progress towards the development and implementation of a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays shall be provided. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed. Year 3: (Resulting score ≥80) • Evidence that a strategy is in place that is expected to ensure the PNAFTF does not hinder the recovery of Manta and devil rays has been implemented shall be provided. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed.
Client Action Plan	By Year 1-2018 PNA will: 1. Promote the collection of data on manta and devil rays as part of the PIRFO observer programme, including action taken and state of the species; and will make a request to SPC to undertake a literature review on the mortality to manta and devil rays when returned to sea. By Year 2-2019 PNA will: 1. Provide evidence that a dialogue has commenced with national governments and NGOs to assess the direct impact of purse seine free school fisheries on manta rays; and PNA will determine a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays will be implemented. Year 3-2020, PNA will: 1. Implement a strategy for inclusion as an industry code of conduct and /or a PNA Implementation Arrangement or WCPFC Commission Management measures, as deemed necessary. Year 4-2021, PNA will provide evidence that: 1. The PNA and/or WCPFC strategy evaluated to ensure that the strategy is meeting its objectives.
Consultation on condition	The Assessment Team accepts that this condition can be met through action taken by the PNA alone, or by the PNA within the wider WCPFC process.

Progress on Condition (Year 1)	Condition 5 (UoC 1) is the same as Condition 6 (UoC 2). The Client provided an update to the Audit Team at the Year 1 site visit (included in Section 7.2, Report 4). This shows that catches of *Mantas* and mobulids continue to be documented by observers in the PNA Tuna Fishery, showing that the catch of *Manta* species was 897 in 2016 and 517 in 2017. This is consistent with the numbers recorded in previous years (634 animals per year for 2011-2015). It was noted to the Audit Team that this reflects a very low rate of interaction, but we highlight that it is total mortality rather than rate of interaction that is important. Also, through the WCPFC Shark Research Plan, there is a process ongoing to improve the information available on catches through observer training, and through the development of a *Manta* and mobulid identification guide (WCPFC-SC14-2018/EB-WP-04: https://www.wcpfc.int/file/216146/download?token=Oza616l9). There has also been progress in the development of safe release guidelines for *Manta* and mobulid rays in the WCPO. As noted in the recertification report for the PNA Tuna Fishery (Blyth-Skyrme *et al.*, 2018), a good practice guide had been produced and distributed previously to inform fishermen of the best techniques for releasing species including Manta and devil rays from purse seine fisheries (i.e. Poisson *et al*., 2012). These were combined with guidelines for longline fisheries and released at the SC14 meeting of the WCPFC Scientific Committee (https://www.wcpfc.int/file/216439/download?token=dCOslw0r). It is understood that these guidelines are voluntary and therefore not subject to compliance monitoring. The International Seafood Sustainability Foundation (ISSF) has undertaken at least two 'skipper workshops' in the PNA region in 2017 and 2018, where ideas including around safe handling of Mantas and mobulids is discussed. The Audit Team notes that the client highlighted discussion at the WCPFC on *Manta* and mobulid ray management that had occurred previously, where at least one CCM was resistant to proposals to require safe release through a CMM in the absence of assessment information (WCPFC 13: https://www.wcpfc.int/system/files/WCPFC13%20Summary%20Report%20final_issued%202%20March%202017%20complete.pdf). We highlight that Dr. Shelley Clarke of the SPC was reported at WCPFC 13 to have commented "*In her opinion there are sufficient data to support a detailed assessment of mobula and manta rays*." We also highlight that Condition 5 (and the identical Condition 6) is on Principle 2, and therefore that the condition can be met through action taken by the PNA alone, or by the PNA within the wider WCPFC process. We therefore encourage the PNA to ensure the SG80 requirement is met, fully accepting that a CMM requiring safe release is not necessarily essential in order to meet the Condition.
Status	Good progress has been made on Milestone 1, and so this Condition is on target.
Additional information	None

Condition 6 (Yellowfin tuna – UoC 2)

Performance Indicator	2.3.2 (SIb)
Score	75
Justification	Observer data indicate that the number interactions between the PNAFTF and *Manta* and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO, pers. comm.). It is not clear to what extent *Manta* and devil rays are retained in the PNAFTF, but retention generally seems unlikely. Croll *et al*. (2015) noted that while extrapolated from limited observer data, the relatively

	high mobulid bycatch rate and intensity of effort suggest the WCPO purse seine fisheries have a large mobulid bycatch compared with others. At the 12th WCPFC Scientific Committee (SC) meeting (SC12), the designation of Manta and Mobula species as 'key shark species' was proposed, which would result in improved data collection and reporting of the *Manta* and *Mobula* bycatch. This proposal was supported by FFA members, but achieved only limited support in the SC overall. Amongst a range of recommendations, SC12 recommended that purse seine observer training programmes add emphasis to the identification of *Mobula* species as part of their curricula (WCPFC 2016b). SC12 also recommended that the WCPFC considers adopting guidelines for safe release of *Manta* and *Mobula* rays caught incidentally in WCPFC fisheries, and a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing sharks and rays, including *Manta* and *Mobula* species (Poisson *et al*., 2012). However, there is nothing in place for ray species consistent with the requirements to release silky shark, oceanic whitetip shark, or whale shark. Overall, there are considered to be measures in place that are expected to ensure the UoA does not hinder the recovery of devil rays and manta rays, but it is not clear that together they comprise a strategy to manage and minimise impacts. The fishery meets SG60 but not SG80 and a Condition is introduced.
Condition	SIb) By the third annual surveillance audit, the client shall demonstrate that there is a strategy in place that is expected to ensure the UoA does not hinder the recovery of Manta and devil rays as ETP species.
Milestones	<u>Year 1: (Resulting score = 75)</u> • At the first annual surveillance audit, the client will need to present a plan (including timeline) showing how a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays will be implemented. • The client will need to provide evidence that available information on Manta and devil rays is being considered in developing the strategy, including species identification and recording where appropriate. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed. <u>Year 2: (Resulting score = 75)</u> • Evidence of progress towards the development and implementation of a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays shall be provided. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed. <u>Year 3: (Resulting score ≥80)</u> • Evidence that a strategy is in place that is expected to ensure the PNAFTF does not hinder the recovery of Manta and devil rays has been implemented shall be provided. • An update on the catch and likely mortality rate of Manta and devil rays taken in the PNAFTF will be needed.
Client Action Plan	<u>By Year 1-2018 PNA will:</u> 1. Promote the collection of data on manta and devil rays as part of the PIRFO observer programme, including action taken and state of the species; and will make a request to SPC to undertake a literature review on the mortality to manta and devil rays when returned to sea. <u>By Year 2-2019 PNA will:</u> 1. Provide evidence that a dialogue has commenced with national governments and NGOs to assess the direct impact of purse seine free school fisheries on manta rays; and PNA will

	determine a strategy to ensure the PNAFTF does not hinder the recovery of Manta and devil rays will be implemented. Year 3-2020, PNA will: 1. Implement a strategy for inclusion as an industry code of conduct and /or a PNA Implementation Arrangement or WCPFC Commission Management measures, as deemed necessary. Year 4-2021, PNA will provide evidence that: 1. The PNA and/or WCPFC strategy evaluated to ensure that the strategy is meeting its objectives.
Consultation on condition	The Assessment Team accepts that this condition can be met through action taken by the PNA alone, or by the PNA within the wider WCPFC process.
Progress on Condition (Year 1)	Condition 6 (UoC 2) is the same as Condition 5 (UoC 1). The Client provided an update to the Audit Team at the Year 1 site visit (included in Section 7.2, Report 4). This shows that catches of *Mantas* and mobulids continue to be documented by observers in the PNA Tuna Fishery, showing that the catch of *Manta* species was 897 in 2016 and 517 in 2017. This is consistent with the numbers recorded in previous years (634 animals per year for 2011-2015). It was noted to the Audit Team that this reflects a very low rate of interaction, but we highlight that it is total mortality rather than rate of interaction that is important. Also, through the WCPFC Shark Research Plan, there is a process ongoing to improve the information available on catches through observer training, and through the development of a *Manta* and mobulid identification guide (WCPFC-SC14-2018/EB-WP-04: https://www.wcpfc.int/file/216146/download?token=Oza616l9). There has also been progress in the development of safe release guidelines for *Manta* and mobulid rays in the WCPO. As noted in the recertification report for the PNA Tuna Fishery (Blyth-Skyrme *et al.*, 2018), a good practice guide had been produced and distributed previously to inform fishermen of the best techniques for releasing species including Manta and devil rays from purse seine fisheries (i.e. Poisson *et al.*, 2012). These were combined with guidelines for longline fisheries and released at the SC14 meeting of the WCPFC Scientific Committee (https://www.wcpfc.int/file/216439/download?token=dCOslw0r). It is understood that these guidelines are voluntary and therefore not subject to compliance monitoring. The International Seafood Sustainability Foundation (ISSF) has undertaken at least two 'skipper workshops' in the PNA region in 2017 and 2018, where ideas including around safe handling of Mantas and mobulids is discussed. The Audit Team notes that the client highlighted discussion at the WCPFC on *Manta* and mobulid ray management that had occurred previously, where at least one CCM was resistant to proposals to require safe release through a CMM in the absence of assessment information (WCPFC 13: https://www.wcpfc.int/system/files/WCPFC13%20Summary%20Report%20final_issued%202%20March%202017%20complete.pdf). We highlight that Dr. Shelley Clarke of the SPC was reported at WCPFC 13 to have commented "*In her opinion there are sufficient data to support a detailed assessment of mobula and manta rays.*" We also highlight that Condition 5 (and the identical Condition 6) is on Principle 2, and therefore that the condition can be met through action taken by the PNA alone, or by the PNA within the wider WCPFC process. We therefore encourage the PNA to ensure the SG80 requirement is met, fully accepting that a CMM requiring safe release is not necessarily essential in order to meet the Condition.
Status	Good progress has been made on Milestone 1, and so this Condition is on target.
Additional information	None

4.4 Client Action Plan

No updates to the Client Action Plan are needed.

4.5 Re-scoring Performance Indicators

No re-scoring of Performance Indicators has been undertaken at this Year 1 audit.

5 Conclusion

The PNA Tuna Fishery continues to meet the MSC Standard and is performing at a high level. The total catch of skipjack tuna and yellowfin tuna exceeded 700,000 t in both 2017 and 2018, while effort in the fishery has remained below the PAE. Importantly, all Conditions are currently on target, and progress has been made against all Recommendations.

With respect to Principle 1, there has not been an updated stock assessment for skipjack tuna since McKechnie *et al.* (2016), while the yellowfin tuna assessment was updated in 2017 (Tremblay-Boyer et al., 2017). In both case, current status is estimated to be healthy, with neither stock being overfished nor experiencing overfishing.

Principle 2 performance continues to be appropriate, and steps have been made in particular towards meeting Conditions 5 and 6, and in monitoring the ongoing performance of the fishery against the MSC's shark finning requirements; the latter issue will be monitored annually as part of the audit process.

Principle 3 performance has remained at or above SG80, and the PNA continues to play its part within the wider international management process at the WCPFC.

Finally, to the extent that the Audit Team is able to verify, the traceability system within he PNA Tuna Fishery continues to function at a very high level to ensure that products entering Chains of Custody are from the certified fishery.

The Audit team recommends the continued certification of the PNA Tuna Fishery.

6 References

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7 Appendices

7.1 Evaluation processes and techniques

7.1.1 Site visits

The surveillance audit site visit was held in Brisbane, Australia, in the week commencing 1st April, 2019. No locations were inspected during the audit.

Meetings were held over two days with representatives of the client (PNAO), detailed below, but no other stakeholder approached the CAB to meet with the Audit Team.

7.1.2 Stakeholder participation

Table 8, below, details the meeting held during the site visit for the PNA Tuna Fishery between the Audit Team and the client representatives from the PNAO. No other meetings were held during the site visit.

Table 8: Stakeholder participation in site visit meetings

Date	Attendees	Topics discussed
1st and 2nd April, 2019	• Rob Blyth-Skyrme (LR) • Kevin McLoughlin (LR) • Maurice Brownjohn (PNAO) • Richard Banks (PNAO) • Les Clark (PNAO)	• Audit procedures • Confirmation of site visit plan • Any changes in management systems and relevant regulations • Any changes to key staff • Any changes in the scientific base of information • Any changes to traceability • Any changes in the fishery • Progress against Conditions • Progress against Recommendations • Harmonisation with other MSC fisheries • Observer safety

7.2 Stakeholder input

7.2.1 PNA Shark Finning Report, 2016 and 2017

Recommendation 1: UoA 1 & 2, PI 2.2.2 SId:

SPC provided observer data showing that shark finning does occur at a low level in the PNAFTF. For each MSC audit, a Recommendation is set that the PNA provide a PNAFTF-specific enforcement and compliance summary report of CMM 2010-07 (CMM for sharks), CMM 2011-03 (CMM for oceanic whitetip sharks) and CMM 2013-08 (CMM for silky sharks). This should detail any contraventions of these CMMs that have occurred in the PNAFTF in the preceding year, the enforcement action taken as a result in each case, and any statutory or non-statutory approaches taken to further reduce the likelihood of any contraventions occurring.

PNA fisheries operate under a system of 100% observer coverage covering all purse seine activities inside PNA EEZs. The Legal basis is set out in the PNA Third Implementing Arrangement under para 4 Monitoring:

> *In order to monitor compliance with the catch retention and FAD closure requirements, all foreign purse seine vessels shall carry at all times an observer from either the national observer programme of a Party or an existing sub-regional observer programme.*

WCPFC prohibits this practice under CMM 2010-07 by introducing the concept of a 5% fins-to-carcass ratio, but the measure permits alternative technical approaches and does not prescribe how CCMs should demonstrate compliance.

Observers collect information on the fate of sharks caught and there is a specific code to use when sharks are observed to be finned.

PNA's implementation arrangement are transferred into national laws.

A number of national Acts have simultaneously been implemented prohibited finning, and in a number of cases, the retention of shark species. Examples include:

Government of Kiribati: Shark Sanctuary Regulations, 2010
https://www.ffa.int/system/files/Shark_Sanctuary_Regulations_2015.pdf

> *Persons must not catch or kill a shark, engage in fishing for shark, remove a shark fin or mutilate or injure a shark. Possession of shark or shark parts prohibited.*

Federated States of Micronesia: Title 24 of the Code of the Federated States of Micronesia 2011.
https://www.ffa.int/system/files/Marine_Resources_Act_2002_%5bTitle_24%5d_0.pdf

> *Prohibition of possessing, handling and selling of shark and shark fin in all of FSM's Exclusive Economic Zones*

Republic of the Marshall Islands: Fisheries Act, Title 51 Management of Marine Resources, Republic of the Marshall Islands, Fisheries Act (1), Marshall Islands Marine Resources Authority (Amendment) Act 2018.
(Ch 2) https://www.ffa.int/system/files/Fisheries_Act_%5bTitle_51_Cap2%5d.pdf.
(Ch 5) https://www.ffa.int/system/files/Fishing_Enforcement_Act_%5bTitle_51_Cap_5%5d.pdf
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> *No person shall catch, capture or intentionally engage in fishing for shark or any part thereof or intentionally remove the fins or tail of any shark or otherwise mutilate or injure any shark within the land or fisheries waters of the Republic of the Marshall Islands.*

Solomon Islands: Fisheries Management Act, 2015.
http://www.fisheries.gov.sb/media/uploads/fisheries_management_act_2015.pdf

> *A person commits an offence who:*
>
> *(a) engages in commercial fishing of sharks; b) engages in shark finning; (c) possesses, stores, transhipps or lands, or attempts to tranship, land, buy or sell any shark fin (including the tail) that is not naturally attached to the whole corresponding carcass; (d) possesses, uses or causes to be used a trace wire or J hook for the purpose of fishing.*

Tokelau: Licence Condition.

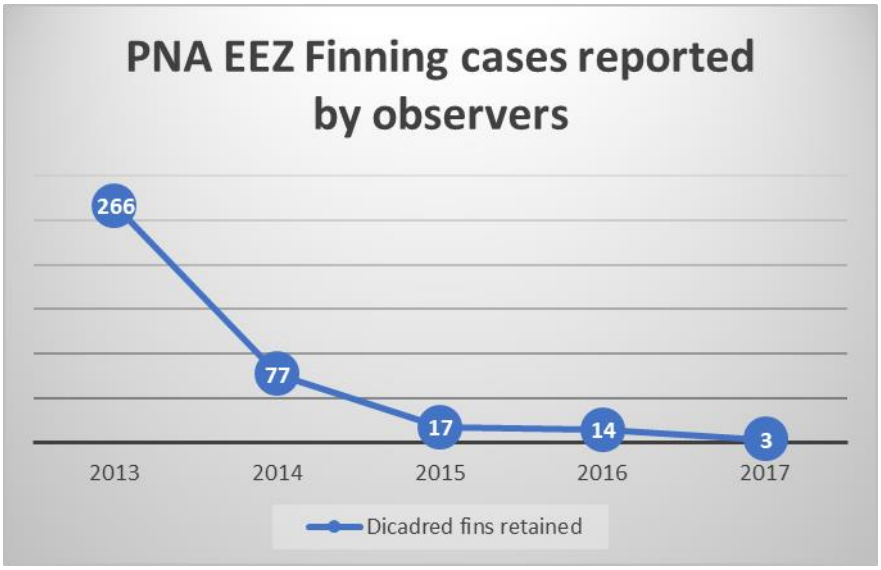
The Licensed Vessel shall have on board fins that total no more than 5% of the weight of sharks on board up to the first point of unloading or landing. Fins shall not be possessed, unloaded or landed without the corresponding carcass.

The Licensed Vessel shall not retain on board, transship, land, or trade any shark fins harvested in contravention of the above conditions

Palau: Chapter 12, Marine Protection Act of 1994 1204
https://www.ofdc.org.tw/components/Editor/webs/files/Palau_Title_27_of_National_Code.pdf

Fish for any shark, or any part of any such, or to remove the fins of or otherwise intentionally mutilate or injure any such shark or possess any part of any shark, including the fins. If any shark is inadvertently caught or captured, it shall be immediately released, whether dead or alive; if the shark is caught or captured alive, it shall be released in the manner that affords it the greatest opportunity for survival.

Shark finning cases



Year	2013	2014	2015	2016	2017
Discarded fins retained - cases	266	77	17	14	3

Specific cases identified in 2016 and 2017 are as follows:

Trip_id	Set Date	Set Type	Common name	Fate	Number
2016					
13237	Apr 10 2016	2	Blacktip shark	DFR	1
12777	Feb 2 2016	2	Silky shark	DFR	3
12777	Jan 19 2016	2	Silky shark	DFR	1
12825	Jan 20 2016	2	Silky shark	DFR	5
12855	Jan 20 2016	2	Blacktip shark	DFR	20
12777	Jan 21 2016	2	Bignose shark	DFR	5
12777	Jan 21 2016	2	Silky shark	DFR	8
12825	Jan 22 2016	2	Silky shark	DFR	1
12777	Jan 22 2016	2	Silky shark	DFR	57
12825	Jan 24 2016	2	Silky shark	DFR	5

12825	Jan 25 2016	2	Silky shark	DFR	4
15675	May 1 2016	2	Silky shark	DFR	4
15675	May 3 2016	2	Silky shark	DFR	1
13918	Oct 1 2016	2	Silky shark	DFR	1
2016 total			Silky shark = 77.6%		116
2017					
15243	Mar 3 2017	1	Silky shark	DFR	8
15243	Mar 9 2017	2	Silky shark	DFR	3
15243	Mar 3 2017	1	Silky shark	DFR	8
2017 total			Silky shark = 100%		19

Set Type 1 = Unassociated
Set Type 2 = Bait school

PNAO followed up all cases to Parties and to the PNA Observer Programme.

In most cases the number of shark finning incidences were small, indicating that the fins would most likely be used for on board consumption, where sharks caught were dead when caught. These were noted in the observer GEN 3.

If offences are detected in PNA coastal state waters, and where a vessel is from a PNA flag state, the observer on board cannot be of the same nationality as the Flag State vessel. Observer reports are first assessed by a national observer debriefer, then submitted to the PNAO Observer Agency, vetted for accuracy and details passed to the costal state in whose waters the offence occurred.

In all cases, GEN3 reports are submitted by observers from some of the PNA countries in near real time, transmitted through handheld satellite communicators (Rock7 and InReach) through the PNA FIMS system. GEN 3 cases are picked up through an alert system to both the Regional Observer Programme and the PNA flag state. The satellite communicators are widely being used in PNG and the Solomon Islands, ands in the process of roll out in Kiribati, Marshall Islands, Nauru, Tuvalu and Federated States of Micronesia.

On disembarkation, observers are then debriefed by a PNA country MCS officer and the case file passed to the costal state in whose waters the offence occurred. Within 60 days, all cases are entered onto to the SPC TUBS (SPC Tuna Fisheries Database Management System Observer Module) system, and these case files are reported to WCPFC to be actioned, if not already, by the Flag State.

When there is an incident involving foreign flagged vessel, i.e. non PNA, inside a PNA EEZ, the observer onboard, will report the case through the GEN 3 reporting system, either or electronically in near real time or on disembarkation. When an incident has occurred and not transmitted electronically, observers are requested to report GEN 3 incidents to a national PNA inspector after disembarkation. Observer cases that involve foreign flag state vessels are either subject to PNA port state debriefing of national debriefing, on return to the observers country. National observer case files are also submitted to the SPC TUBS within 60 days, where these files are required to be assessed by the Flag State. In these cases, GEN 3 reports may be sent to the Flag State at the discretion of the PNA observer country. However, this is not presently guaranteed.

PNA has followed up on each shark finning case.

Cases involving Kiribati flagged vessels in 2016. The Fisheries Administration's response to these alleged offences were that implementing Regulation was deemed to be insufficient to prosecute, but on advice from the legal advisor, the small number of cases, involving one or two shark fins, would be unlikely be prosecuted because the quantum was low, and would not be regarded as systematic, Such cases are associated with the ships cook taking the shark fins from one or two dead sharks. In all case, warnings were issued.

In one case, involving a single trip (12777)*, 74 silky sharks were finned and discarded,* because of the weakness in the regulation, the vessel was given a warning.

The KI implementing Regulation has now been strengthened and any cases identified from 2017 onwards would likely face prosecution, if deemed to be manifestly serious.

There were no repeat cases by KI flagged vessels in 2017.

Two Korean flagged vessel were reported to have finned in more than one zone across a number of EEZs. This vessel was responsible for finning 20 sharks and reported to the Flag State (Korea) by at least one country (Solomon Islands), and no response has been forthcoming. We are awaiting a formal response from PNG, Tuvalu and Nauru to other identified cases in 2016 and 2017, but the quantum involved are not considered to be high.

We have also received notification from FSM that a case involving a Korean flagged vessel has been referred by the Compliance team for review. The quantities involved were small (3).

PNA notes that the number of cases report reflect 8 trips in 2016 and 3 trips in 2017. The number of trips taking place annually is around 32,000.

2018 data recorded finning is not fully available. To date one incident has been detected. The TUBS report is likely to be complete by mid-2019.

Other issues

PNA has established a Compliance Sub Committee, which has re-evaluated the issue of observer case file analysis for the Regional Observer Agency. The Committee recommended the appointment of a PNA Compliance Officer to facilitate the exchange of information, and to follow up on actions taken by Parties. A similar process will be considered after trial of the RPOA system for non PNA flag states.

PNA FIMS is also being developed to integrate the alert system to compliance case file preparation.

Richard Banks, PNAO Advisor.

7.2.2 Report 1: Client report on Skipjack, Condition 1

UoA 1 – PI 1.2.1 Sia By the fourth surveillance audit, the client will need to demonstrate that the harvest strategy for skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.

Milestone: Years 1, 2 and 3: (Resulting score 70)
• The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10).

CAP: By Year 1-2018 PNA will:
1. Review the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1
2. Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO skipjack tuna.
3. Support the implementation of a WCPFC Harvest Strategy Workplan that includes a process for development of a harvest strategy for WCPO skipjack tuna.
4. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO skipjack tuna management within the Tropical Tuna CMM.

Summary
PNA has:
a) Reviewed the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1. Results of that review are set out in the PNA submissions to the PNA objection on certification of the Talley's New Zealand Skipjack Tuna Purse Seine Fishery. The PNA notes that several elements of new information, including the revised, more positive, status of the bigeye stock, the process of preparation of CMM 2017-01 and CMM 2018-01, and some changes in the form of purse seine management arrangements in CMM 2017-01 and CMM 2018-01, point to the responsiveness and effectiveness of the WCPO harvest strategy for skipjack. The PNA has provided additional advice to the CAB on the relevance of this new information in a separate document. The PNA also notes that the WCPO tropical tuna fisheries are the only substantial tuna fisheries globally where the target stocks are being fished sustainably, and that this is due to the effectiveness of the current controls of harvests, with most of the WCPO tropical tuna catch being taken under the VDS – while recognising that management improvements are needed, especially including the development of agreed harvest strategies, to ensure that the catches of the target stocks of WCPO tropical tuna fisheries continue to be sustainable
b) Simplified and clarified the manner in which the VDS TAE is determined.
c) Continued to support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO skipjack tuna. This includes, with other FFA Members leading an effort to see greater priority given to harvest strategy development within the WCPFC processes.
d) Played a major role in the revision of Tropical Tuna CMM to enhance the effectiveness of measures for WCPO skipjack tuna management.

Evidence Provided
2nd PNA Leaders' Summit, 2018, Delap Commitment

11th Annual PNA Ministers Meeting, 2016, Kiritimati Statement

12th Annual PNA Ministerial Meeting, 2017, Majuro Statement

13th Annual PNA Ministerial Meeting, 2018, Naoero Statement

WCPFC14-2017-DP16: FFA Member CMMs Views on Tropical Tuna CMM https://www.wcpfc.int/node/30074

WCPFC14-2017-DP17: PNA Members CCMs and Tokelau Views on Bridging CMM for Tropical Tunas https://www.wcpfc.int/node/30075

WCPFC15-2018-DP08: FFA Member CCMs Views on Tropical Tuna CMM https://www.wcpfc.int/node/32844

WCPFC Scientific Committee 2018 Report Paras 448 https://www.wcpfc.int/node/32155

WCPFC13 Report: Attachment M and para 267 https://www.wcpfc.int/node/28620

WCPFC14 Report: paras 148, 154, 167, https://www.wcpfc.int/node/30295

WCPFC15 Report paras 307, 313, 325 https://www.wcpfc.int/node/33511

VDS-T&SC8/WP.5a: Effort Creep within the WCPO Purse Seine Fishery (provided)

WCPFC-SC14-2018/ MI-IP-05: Updating Indicators of Effort Creep in the WCPO Purse Seine Fishery https://www.wcpfc.int/node/30931

https://pnatuna.com/content/pna-rights-based-management-works-pacific

https://pnatuna.com/content/pna-ministers-send-strong-signal-tuna-conservation

PNA readies program for 13th WCPFC Annual Meeting: https://pnatuna.com/node/377

Harvest Control rules, reference points and MCS on the menu for Pacific nations ahead of annual Tuna meet; https://www.ffa.int/node/1826

7.2.3 Report 2: Client report on Skipjack, Condition 2

Principle 1: Condition 2

Milestone: Years 1, 2 and 3:
The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10).

CAP: By Year 1-2018 PNA will:

1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC;
2. Participate in work to refine the initial list of performance indicators for the Tropical Purse Seine Fisheries for the purpose of the evaluation of HCRs agreed at WCPFC13.
3. Support WCPFC preparatory MSE work for the tropical purse seine fishery
4. Promote support by PNA Member governments for the adoption and application of a HCR for skipjack; and
5. Collaborate with other stakeholders to support work towards adoption of a HCR for skipjack by the WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies.

Summary
PNA has:

a) Continued to work closely with SPC on the development of HCRs for skipjack – see for example SC12-MI-WP-06;
b) Participated fully in refining performance indicators for tropical purse seine fisheries, including participating in the Small Working Group on Management Objectives at WCPFC13 for the purpose of the evaluation of harvest control rules set out in Attachment M to the WCPFC16 report. PNA continues to participate in developing the PIs which will be further discussed at a PNA HCR Workshop to be held June 3-5, 2019
c) Supported preparatory MSE work by SPC both in PNA meeting discussions on MSE and at the WCPFC Scientific committee
d) Supported and promoted discussion on HCRs and Harvest Strategies, which are a standing item on the agendas of the annual meetings of the VDS Technical and Scientific committee and the PNA.
e) Supported continuing work on adoption of a HCR for skipjack with other stakeholders at the WCPFC.

These actions include actions taken both as PNA and as part of the wider FFA group.

Evidence Provided
2nd PNA Leaders' Summit, 2018, Delap Commitment

11th Annual PNA Ministers Meeting, 2016, Kiritimati Statement

SC12-MI-WP-06: Evaluation of candidate harvest control rules for the tropical skipjack purse seine fishery, https://www.wcpfc.int/node/27431 presented by SPC at SC12 in 2016. The paper describes the basis for this work as "*The Parties to the Nauru agreement (PNA) requested that Pacific Community (SPC) evaluate a number of candidate harvest control rules (HCRs) for the tropical purse seine fishery for skipjack.".*

SPC presentation to 2018 PNA meeting Harvest Control Rules and Management Strategy Evaluation: What's next?

Agendas for Palau Arrangement VDS Technical and Scientific Committee meetings and Agendas for the Annual Meetings of the PNA

FFA Proposal for CMM for Interim Acceptable Levels of Risk of breaching Limit Reference Points https://www.wcpfc.int/node/28451

WCPFC Scientific Committee 2018 Report Paras 390, 393, 394, 426, 429, 430, **437,** https://www.wcpfc.int/node/32155

WCPFC13 Report: Attachment M and paras 281, 325 https://www.wcpfc.int/node/28620

WCPFC15 Report paras 268, 307,https://www.wcpfc.int/node/33511

https://www.radionz.co.nz/international/programmes/datelinepacific/audio/201826538/pna-pushing-harvest-control-strategy-at-pacific-tuna-commission

Harvest Control rules, reference points and MCS on the menu for Pacific nations ahead of annual Tuna meet; https://www.ffa.int/node/1826

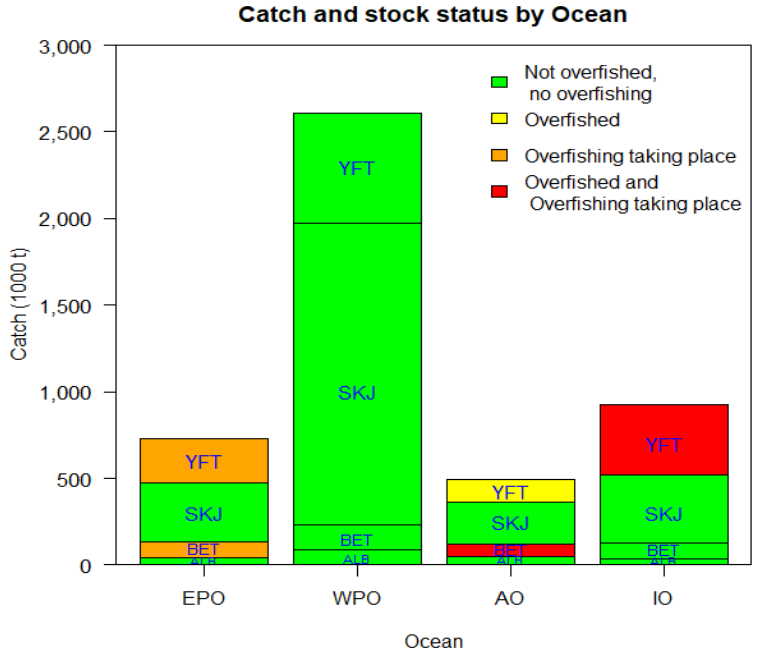
7.2.4 Report 3: Client report on Skipjack and Yellowfin Harvest Strategy and Harvest Control Rules

PNAO SUBMISSION ON SKJ AND YFT HS and HCR

FOR THE 1st SURVEILLANCE AUDIT ON THE RENEWED CERTIFICATION ON THE PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN, UNASSOCIATED / NON-FAD SET, TUNA PURSE SEINE FISHERY

Overview

The figure below illustrates the status of the 4 major tuna stocks (albacore, bigeye, skipjack, yellowfin) globally. The figure shows the superior performance of the WCPO harvest strategies in managing these stocks. At this point, the WCPO tuna fisheries are generally the only major tropical tuna fisheries globally where the major target stocks (bigeye, skipjack and yellowfin) are being fished sustainably. Notably, around 60% of the WCPO catch of tropical tunas indicated in the figure is taken in PNA waters and a significant amount in addition is taken by PNA flag vessels outside PNA waters.



Source: SPC Status of the WCPO stocks presentation to the 24th Annual meeting of the Palau Arrangement

In the view of the PNA, the WCPO outcome indicated in the figure is a result of the effective control of harvests in the WCPO, particularly under the VDS.

At a more detailed level, this figure, taken with the results of the most recent assessments for bigeye, skipjack and yellowfin, and the projections referred to below indicate that the management objectives for all 3 stocks as set out in the stream of Tropical Tuna CMMs over time:

a) Are currently being achieved;
b) Have always been achieved; and
c) Are likely to continue to be achieved

This is no accident and it's not because the stocks are lightly exploited. In the PNAO view, this outcome results from the effectiveness of the current controls on harvests, particularly as a result of the PNA VDS. However, the harvest controls in place are not complete, and there are uncertainties, gaps and risks that require to be addressed to ensure that WCPO tropical tuna fisheries continue to be sustainable. The adoption of more well-defined harvest control rules is a key element in that work, along with strengthening of other elements of harvest strategies.

Specific Comments on Skipjack and Yellowfin Harvest Strategy and Harvest Control Rule Scoring Issues

The notes below relate to the skipjack UoA, but the PNAO considers that the same comments broadly apply to the yellowfin tuna UoA.

1.2.1 Harvest strategy

1.2.1a Harvest strategy design

PNAO sees three aspects in which new information point to increasing the score for this SI to 100. They are:

a) **The revision in the status of the bigeye stock**. Previously assessments on the skipjack stock have considered that:

> *"the record of failing to reduce fishing mortality on bigeye tuna so that they have now become overfished (see PI 2.1.1), reduces the level of confidence that the harvest strategy would be responsive to the state of the stock or that the elements will work together when required to do so to achieve the management objectives"* (WPSTA PCR, p167)

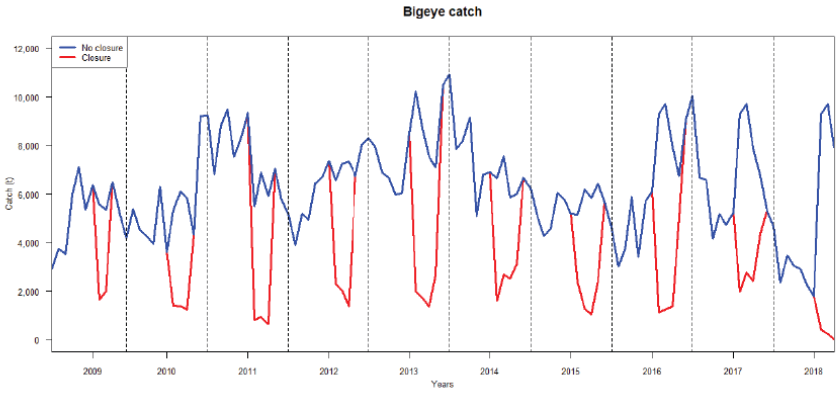
It is now clear that the bigeye tuna stock is not overfished, and never was overfished. It must therefore follow that the fact that the bigeye stock, and the yellowfin stock, and the skipjack stock are not overfished and have never been overfished at least removes the previous reduction in confidence in the responsiveness and effectiveness of the harvest strategy referred to above.

More generally, there is now evidence of:

i) effective actions being taken to reduce effort and catch when the scientific advice was that the stock was overfished, including as indicated below;

- the FAD closure

Resulted in about 16% reduction in bigeye catch for a 2-months FAD closure, 21% - 3-month and 26% in a 4-month closure. 22% overall for 2009-2017.



Source: SPC Status of Stocks Presentation to the 24thAnnual meeting of the Parties to the Palau Arrangement

and

- the measures adopted being likely to rebuild the stock:

Table 1. Average rebuilding time to each bigeye stock rebuilding level ($\%SB_{F=0,y\text{-}10\text{-}y\text{-}1}$), under scenarios of purse seine FAD effort and longline catch.

Average rebuilding level	Basis	Status quo	'Pessimistic'	'2016 choices'	'Optimistic'	'Closure'
20% $SB_{F=0}$	Adopted LRP[1]	7 years	7 years	6 years	5 years	2 years
24% $SB_{F=0}$	Consistent with 20% risk of falling below LRP	10 years	12 years	7 years	6 years	3 years
25% $SB_{F=0}$	Consistent with 15% risk of falling below LRP	12 years	21 years	8 years	7 years	4 years
26% $SB_{F=0}$	Consistent with 10% risk of falling below LRP	14 years	>30 years	9 years	7 years	4 years
28% $SB_{F=0}$	Consistent with 5% risk of falling below LRP	>30 years	>30 years	11 years	8 years	5 years

[1] this is consistent with a half of all runs falling below the LRP (a 50% risk)

Source: WCPFC13-2016-12: Biologically reasonable rebuilding timeframes for bigeye tuna WCPFC13-2016-12 https://www.wcpfc.int/node/28504

and

ii) action to allow increases in effort and catch consistent with scientific advice from the latest assessment that the unfished biomass was substantially higher than previously estimated (by 70%)

which must increase the level of confidence that the harvest strategy would be responsive to the state of the stock and that the elements will work together when required to do so to achieve the management objectives.

b) **The process of preparation of CMM 2017-01 and CMM 2018-01:** the preparation of the replacement Tropical Tuna CMM for CMM 2013-01 illustrates the way in which the current harvest strategy, including the "generally understood" HCR respond to the state of the stock. The key elements include:

i) updated assessments for skipjack (2016) and bigeye and yellowfin (2017, with a revised bigeye assessment in 2018)

ii) scientific advice on the status and management of these 3 stocks from the Scientific Committee;

iii) Two special sessions of the Commission in 2017 and priority attention to the Tropical Tuna Measure during the annual Commission sessions in 2017 and 2018

iv) Presentations to those sessions of a range of scientific analyses including

- Projections of spawning biomass and fishing mortality in relation to SBmsy and Fmsy (for bigeye and yellowfin); the TRP for skipjack and the LRPs for all 3 stocks presented to the 2017 special WCPFC session https://www.wcpfc.int/node/29808
- Evaluations of Management options presented to the 2017 and 2018 Commission sessions https://www.wcpfc.int/node/30045 and https://www.wcpfc.int/node/30171 . This analysis was a response to the Special WCPFC Intersessional Meeting to Progress the Draft Bridging Measure for Tropical Tunas held in August 2017. The meeting tasked SPC to evaluate the performance of a range of measures for skipjack management against these parameters:
    - Catches
    - Vulnerable biomass
    - the spawning biomass depletion ratio (SB/SBF=0) is to be maintained on average at the target reference point
    - the fishing mortality is to be maintained at or below the average fishing mortality level in 20112014
    - the fishing mortality at FMSY - the risk of breaching the adopted limit reference point of 20% of the estimated recent average spawning biomass in the absence of fishing
    - [relative impact on spawning biomass by fishery sector/gear]
- Preparation of the CMM as a "bridging" measure to the creation of a formal harvest strategy
- Systematic revision of the CMM based on the conclusions of the SPC Evaluation of Management Options with the aims of:
    i) achieving the objectives set in the measure, including keeping the SKJ TRP around the TRP; and
    ii) ensuring a very low risk of breaching the LRPs for all 3 stocks

c) **The form of CMM 2017-01 and CMM 2018-01:** one of the rationales set down by some CABs for the previous scoring of 60 for SI 1.2.1 a) was that *the processes for determining VDS TAE and PAE are not transparent and that it is unclear how the TAE is determined, based on stock status advice".* This was never the case, but there were some complexities in the determination of the TAE which have now been simplified to make the process of determining the TAE even more transparent. That includes:

i) In CMM 2017-01 and 2018-01, EEZ effort limits have been reformulated as numbers of days rather than historical effort levels. The WCPFC effort limit for PNA EEZs is now clearly 44,033 days as set out in Table 1 of CMMs 2017-01 and 2018-01 where it was previously defined as the 2010 effort level ; with an associated TAE of 1,000 days for Tokelau which Table 1 indicates is *"managed cooperatively through the PNA Vessel Day Scheme"*

ii) the VDS TAE for 2019 has been determined at 45,033 days as set out below. In this formulation the Length Adjustment Factor has been kept at zero to clarify the link with Table 1 the Tropical Tuna CMMs.

Proposed TAE for 2019 and Proposed Provisional TAE for 2020 and 2021

	Determining the TAE (days)				
	TAE 2017	TAE 2018	Provisional TAE for 2019	Proposed TAE for 2019	Proposed Provisional TAE for 2020 and 2021
Estimated 2010 Logsheet effort	44,033	44,033	44,033	44,033	44,033
Length Adjustment factor	1.30%	0.0%	0.0%	0.0%	0.0%
PNA TAE	***44,605***	***44,033***	***44,033***	***44,033***	***44,033***
Tokelau TAE	*985*	*972*	*972*	*1,000*	*1,000*
Total VDS TAE (PNA + Tokelau)	***45,590***	***45,005***	***45,005***	***45,033***	***45,033***

The set of effort limits adopted in the CMM reflects
i) the scientific advice that the spawning biomass was around the TRP and action should be taken to keep the spawning biomass near the TRP; and
ii) the projection results which indicated that maintaining effort at recent levels would keep the SKJ spawning biomass around the TRP

1.2.2 Harvest Control Rules and Tools

1.2.2a HCRs Design and Application

The re-assessment found that appropriate generally understood HCRs are "available". In the view of the PNAO, the available evidence now indicates that the generally understood HCRs should be considered as "in place".

Relevant MSC advice[2] includes (emphases added):

a) *When determining whether there is a 'generally understood' HCR **in place** in the fishery under assessment, assessors need to determine whether the fishery will in future take appropriate management action in line with what they perceive as the 'generally understood' rule. Evidence that positive action has been taken in the past should be considered to be evidence that there is a generally understood rule **in place**.*

b) *Conservation and Management Measures (CMMs) approved by RFMO Commissions and for example regarded as 'active' resolutions, may thus be accepted as **in place** even if they might still be overturned at some point in the future.*

c) *Evidence and examples of the positive actions taken in response to generally understood HCRs should be provided for the target stock in the case that generally understood HCRs are **'in place'***

d) *However, in some circumstances – where F has been constrained at F<FMSY by controls on effort or catches, then this could be given as part of the evidence that the 'generally understood' HCRs **are being effective**. Evidence for the effectiveness of an HCR should in fact require the consistent achievement of the target exploitation level*

The fishery meets these tests in that:

a) There have been a series of management actions relating to skipjack tracing from the broadening of the Tropical Tuna CMMs by the Commission since CMM 2013-01 to include explicitly target the CMMs at managing skipjack as well as bigeye and yellowfin and the associated tightening of the VDS through to the process and outcomes of the preparation of CMMs 2017-01 and 2018-01. Notably this process has now been through a full cycle from the adoption of a 4 year measure in 2012 (for 2013-2017) to the adoption of a new 3 year measure in 2017 (for 2018-2000). This record of management actions provide evidence that there is a "generally understood" rule in place, and that appropriate management action will in future be taken in line with this "generally understood" rule.
b) The Tropical Tuna CMMs have been and continue to be, "in place."

[2] From the MSC Interpretation on Harvest Control Rules (HCRs)

c) Evidence and examples of the positive actions taken in response to the "generally understood" HCRs for skipjack are provided in a) above; and
d) The figure below illustrates the effectiveness of the PNA VDS working together with the WCPFC Tropical Tuna CMM to cap and bring down purse seine effort and skipjack fishing mortality since 2010 to achieve an exploitation level well below FMSY consistent with maintaining the spawning biomass around the TRP .

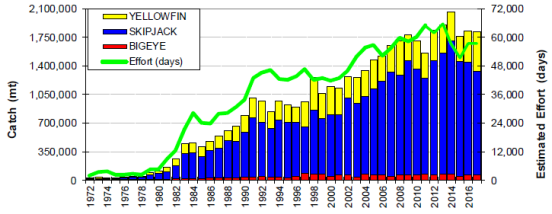
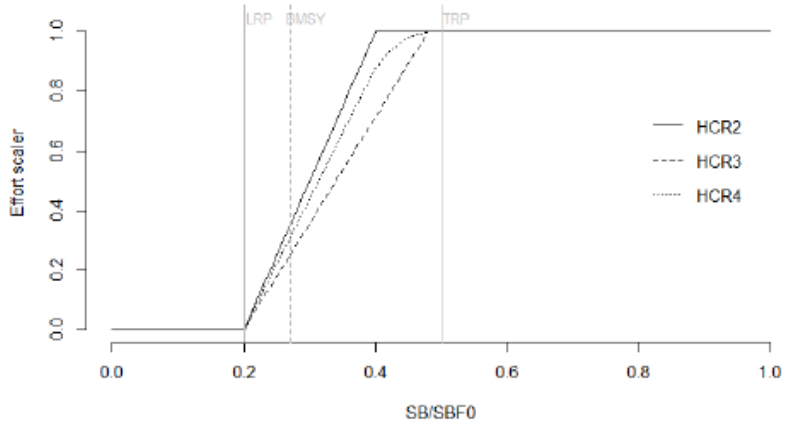


Figure 3.1.2 Purse seine catch (mt) of bigeye, skipjack and yellowfin and estimated fishing effort (days fishing and searching) in the WCP–CA

Source: Figure 3.1.2: WCPFC-SC14-2018/GN-WP-01: Overview of Tuna Fisheries in the Western and Central Pacific Ocean, including Economic Conditions – 2017: https://www.wcpfc.int/node/32155

In addition, further evidence of the "generally understood" HCR for skipjack being in place includes:
a) the process of preparation of the current Tropical Tuna CMM including the adoption of clear objectives for all 3 tropical tuna stocks; the evaluation of management options in the manner summarised above and the outcome in terms of the revision of the CMM in response to the status of the stock and the advice on the effectiveness of different management options to achieve the agreed management objectives.
b) The ongoing work on the design of a formal HCR for skipjack centred on the form of candidate HCRs illustrated below.



Source: Figure 1: Evaluation of candidate harvest control rules for the tropical skipjack purse seine fishery: SC12-MI-WP-06: https://www.wcpfc.int/node/27431

including work reported in:
- WCPFC-SC14-2018/ MI-WP-04: Performance indicators for comparing management procedures using the MSE modelling framework: https://www.wcpfc.int/node/30982
- WCPFC-SC14-2018/ MI-WP-05: Key decisions for managers and scientists under the harvest strategy approach for WCPO tuna stocks and fisheries; https://www.wcpfc.int/node/30993 and

c) The design of the current Tropical Tuna CMM to *"create a bridge to the adoption of a harvest strategy for bigeye, skipjack, and yellowfin tuna stocks and/or fisheries in accordance with the work plan and indicative timeframes set out in the Agreed Work Plan for the Adoption of Harvest Strategies under CMM 2014-06*".

1.2.2c HCRs Evaluation

This SI requires an assessment of evidence showing that the tools in use are effective in achieving the exploitation levels required under the HCRs.

The re-assessment considered that *"Given SIa finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met."* consistent with the MSC advice that "*Due to the scoring rules, if HCRs are only regarded as*

'available' in scoring issue (a), it is not possible to score more than 60 for issue (c) since the SG80 refers to the tools 'in use' in the fishery in assessment, not the tools 'in use or available'

However, following the argument above that the available evidence now indicates that the generally understood HCRs should be considered as "in place" rather than "available", this rationale no longer applies and it follows that an assessment should be made of the extent to which *the tools in use are effective in achieving the exploitation levels required under the HCRs*.

The range of tools used to control skipjack harvests include effort limits and capacity limits. Other measures such as the FAD closure designed to management bigeye also have an effect on control of skipjack harvests. These measures are clearly "in use" and are effective because the exploitation levels required under the "generally understood" HCRs have all been achieved. If the tools weren't "in use" the harvests wouldn't have been controlled as effectively as they have been.

Therefore, on the basis that additional information indicates that the "generally understood" HCRs are "in place" rather than available, the PNAO view is that SIc should be assessed on the basis of the tools being "in use", and that SG80 is met.

1.2.3 – Information and Monitoring

1.2.3b Monitoring

The re-assessment concluded that SG100 was not met for this SI because:

> *"…, there are aspects of the data collection which do not meet SG100 requirements. There are delays in the collation of data from the most recent year that prevent their inclusion in the assessment. For a short-lived species such as skipjack tuna, this could lead to a mismatch between estimates of stock status from the assessment, management actions, and the actual stock status (Rice et al., 2014). Also, operational level data are not provided by some WCPFC members (although some who do not provide it to WCPFC make their country's data available for assessment purposes). "*

The reference for this conclusion is the 2014 skipjack assessment report. The PNAO understanding is that data from the most recent year is included in the assessment i.e. 2015 data was used in the 2016 skipjack assessment. Similarly the PNAO understanding is that there are no significant shortfalls in the availability of operational data for the skipjack assessments.

These 2 points can be checked with SPC.

7.2.5 Report 4: Client Report on Mantas – Condition 5

There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species (Manta and Devil Rays).

Year 1 CAP. PNA will promote the collection of data on manta and devil rays as part of the PIRFO observer programme, including action taken and state of the species; and will make a request to SPC to undertake a literature review on the mortality to manta and devil rays when returned to sea.

Following the recommendation of SC 12 (Tremblay-Boyer L and S. Brouwer, EB-WP-08) (https://www.wcpfc.int/node/27475), As of 2017, Giant Manta and a number of mobulids were added to the PIRFO Purse seine observer training programmes as part of their curricula. SPC PIRFO species of special interest module and these are recorded on capture including species (Manta *birostris*), along with action taken once capture – retained, discarded and escaped. #

Details of capture for mantas caught in the unassociated fishery are shown in the Table below. No other manta or mobula species were recorded as caught in 2016 and 2017. The SPC species classification includes Giant Manta rays (Manta *birostris*), Rays, skates and mantas (*Batoidimorpha (Hypotrmata*)), manta rays (*Mobulidae*), longhorned mobula (*Mobula eregoodootenkee*), Mata ray (Mobula japonica), Lesser devil ray (*Mobula kuhlii*), smoothtail mobula (*Mobula tarapacana*), Chilean devil ray (*Mobula tarapacana*), and mobula (*Mobula spp.*). This may indicate the prevalence of on species, Manta *birostri,* but unlikely (Table 2).

Table 1: Catch of Giant Mantas (Manta *birostris*) in unassociated and bait school sets.

Year	EEZ	Set type	Number	Retained	Finned Retained	Retain_OR	Discard
2016	FM	1	38	0	0	0	38
2016	FM	2	52	1	0	1	49
2016	GL	1	35	0	0	0	35
2016	GL	2	190	0	0	0	190
2016	LN	2	4	0	0	0	4
2016	MH	2	4	0	0	0	4
2016	NR	1	9	0	0	0	9
2016	NR	2	72	1	0	1	71
2016	PG	1	36	0	0	0	36
2016	PG	2	248	2	0	2	246
2016	PW	2	2	0	0	0	2
2016	PX	2	2	0	0	0	2
2016	SB	1	7	0	0	0	7
2016	SB	2	187	0	0	0	187
2016	TV	1	2	0	0	0	2
2016	TV	2	9	0	0	0	9
Total			897	4	0	4	891
2017	FM	1	5	0	0	0	5
2017	FM	2	9	0	0	0	9
2017	GL	1	2	0	0	0	2
2017	GL	2	41	1	0	1	40
2017	MH	1	1	0	0	0	1
2017	MH	2	2	0	0	0	2
2017	NR	1	7	0	0	0	7
2017	NR	2	86	0	0	0	86
2017	PG	1	80	7	0	7	73
2017	PG	2	245	1	0	1	244
2017	PX	1	1	0	0	0	1
2017	PX	2	6	0	0	0	6
2017	SB	1	1	0	0	0	1
2017	SB	2	31	0	0	0	31
Total			517	9	0	9	508

Source: SPC TUBS

Table 2: Total number of fish observed (n) in the Western and Central Pacific Ocean from 1994-2015, in the associated (ASS), and unassociated (UNA) purse seine fisheries; albacore (ALB) target; and bigeye and yellowfin tuna (BET-YFT) target longline fisheries.

Species	ASS n	ASS rate	UNA n	UNA rate	ALB n	ALB rate	BET-YFT n	BET-YFT rate
Lamna nasus	15	0.0000			10980	0.0142	113	0.0001
Manta birostris	1079	0.0017	1478	0.0076	96	0.0001	335	0.0003
Megachasma pelagios			1	0.0000				
Mobula eregoodootenkee	1	0.0000						
Mobula japanica	25	0.0000	10	0.0001	47	0.0001	56	0.0001
Mobula kuhlii	0	0.0000						
Mobula tarapacana			1	0.0000	26	0.0000	57	0.0001
Mobula thurstoni			16	0.0001				
Notorynchus cepedianus	32	0.0001			14	0.0000		
Odontaspis noronhai	1	0.0000			1	0.0000	19	0.0000
Prionace glauca	46	0.0001	38	0.0002	193368	0.2494	310619	0.3149
Pseudocarcharias kamoharai					163	0.0002	5610	0.0057
Pteroplatytrygon violacea	1405	0.0023	1184	0.0061	25739	0.0332	34011	0.0345
Rhincodon typus	426	0.0007	438	0.0022	3	0.0000	4	0.0000
Sphyrna lewini	16	0.0000	18	0.0001	56	0.0001	1016	0.0010
Sphyrna mokarran	25	0.0000	9	0.0000	93	0.0001	385	0.0004
Sphyrna zygaena	15	0.0000	1	0.0000	67	0.0001	270	0.0003
Squalus acanthias	1	0.0000			32	0.0000		
Squalus megalops					1	0.0000	1	0.0000
Squatina tergocellatoides					3	0.0000	4	0.0000
Stegostoma fasciatum							1	0.0000
Torpedo fairchildi					10	0.0000	3	0.0000
Triaenodon obesus	20	0.0000			1	0.0000	40	0.0000
Unidentified Alopias	9	0.0000	14	0.0001	199	0.0003	2566	0.0026
Unidentified Carcharhinidae							2	0.0000
Unidentified Carcharhiniformes					6	0.0000	56	0.0001
Unidentified Centroscymnus					147	0.0002		
Unidentified Dasyatidae	1	0.0000	8	0.0000	22	0.0000	107	0.0001
Unidentified Heterodontiformes							42	0.0000
Unidentified Isurus	61	0.0001	10	0.0001	909	0.0012	557	0.0006
Unidentified Mobula	1319	0.0021	1413	0.0072	55	0.0001	349	0.0004
Unidentified Myliobatidae	1169	0.0019	1122	0.0057	59	0.0001	464	0.0005
Unidentified Raja	39	0.0001	25	0.0001	9	0.0000	7	0.0000
Unidentified Rajidae	46	0.0001			5	0.0000	4	0.0000
Unidentified Rajiformes					21	0.0000	208	0.0002

Note: The full set of 2018 data is in the process of being verified and uploaded.
The number of mantas caught per set are shown below:

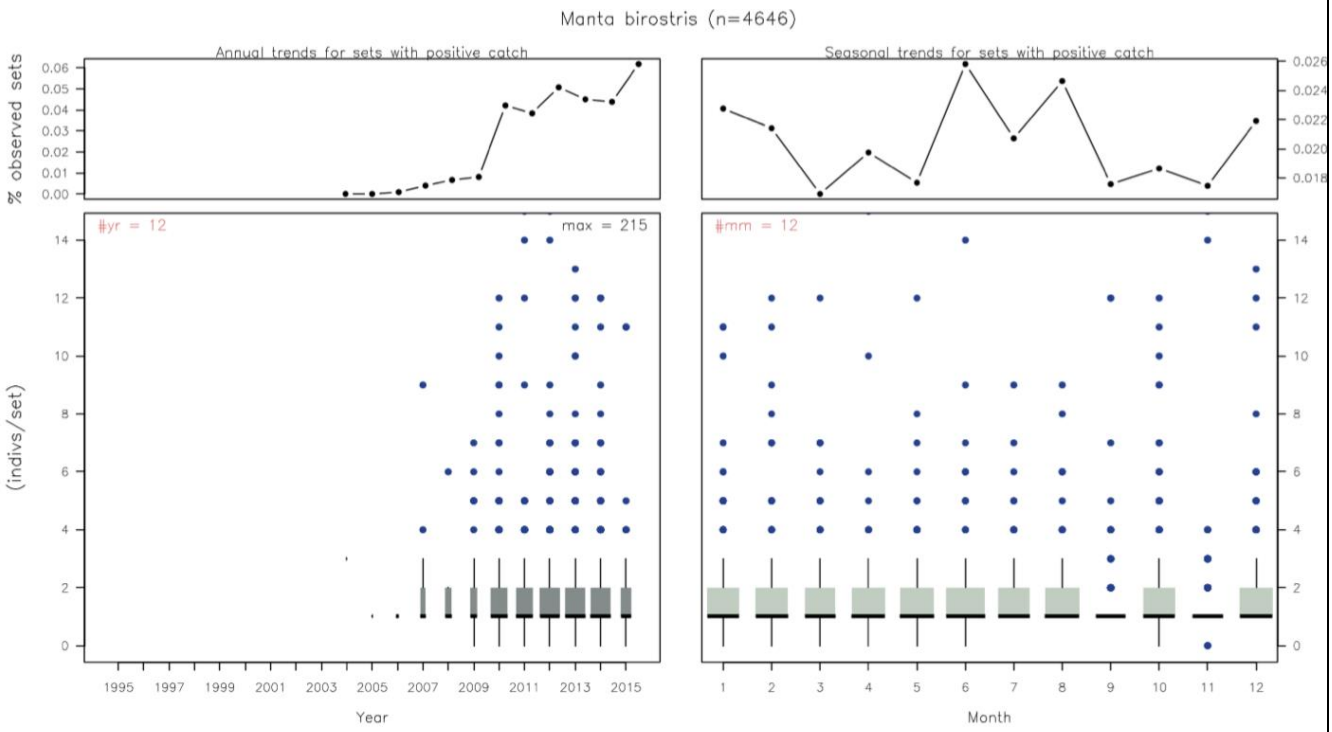


Figure 1: Unstandardized CPUE for Manta birostris from purse seine sets within the Western and Central Pacific Ocean 1995-2015 (left) and monthly (right). Tremblay-Boyer and Brouwer.

The current Manta ID guide is attached.

SPC is currently contracting Lindsay Gutteridge to update the shark ID and includes Mobulids, Which will be complete by mid-year (Tim Park, pers comm, March, 2019)

Post capture mortality (literature review)

There have been no population assessments in the WCPO. Status is identified as follows:

SPC's 2016 paper on non-key sharks: https://www.wcpfc.int/file/76031/download?token=GY_kDHrI

IUCN Red List Assessment for the Reef Manta (*Mobula alfredi*): https://www.iucnredlist.org/species/195459/126665723

IUCN Red List Assessment for the Giant Manta (*Mobula birostris*): https://www.iucnredlist.org/species/198921/126669349

(other species' IUCN Red List assessments available too but these are the main species in the WCPO)

CITES Proposal to List Mantas on Appendix II: https://www.cites.org/sites/default/files/eng/cop/16/prop/E-CoP16-Prop-46.pdf (and report of the FAO Expert Panel convened to review this proposal: http://www.fao.org/3/a-ap999e.pdf)

CITES Proposal to List Mobula spp. On Appendix II: https://cites.org/sites/default/files/eng/cop/17/prop/060216/E-CoP17-Prop-44.pdf (and report of the FAO Expert Panel convened to review this proposal: http://www.fao.org/3/a-i5932e.pdf)

CMS Proposal to List Giant Manta on Annex 1: https://www.cms.int/en/document/proposal-inclusion-giant-manta-ray-manta-birostris-annex-1-cms-memorandum-understanding

CMS Proposal to List Reef Manta on Annex 1: https://www.cms.int/sites/default/files/document/Doc_7_2_9_Prop_I_9_%26_II_10_Manta_alfredi_FJI.pd

Data on the overall post-release survival rates of Manta or devil rays from commercial purse seine gear are scarce, but the survival rate of rays 142-238 cm disc width that were not removed from the water during a tagging study were "*relatively high*", while the survival rate of animals of 215-265 cm disc width that were removed from the water and tagged on deck were "*low*" (in Lawson *et al.,* 2016). Francis and Jones (2016) reported on a tagging study from New Zealand that visual assessment of the state of the released mobulid correlate poorly with post-capture survival. Out of eight tagged animals, 5 died post-release and three survived. One surviving ray did not swim post-release but sank, while the animals that died (1-4 days post-release), all swam away vigorously (Francis and Jones, 2016).

Francis and Jones (2016) recommended ways for reducing purse seine mortality of mobulid rays by avoiding areas of high ray abundance, avoiding setting on ray-associated tuna schools, and adopting best-practice methods of returning rays to the sea from the net or vessel (Francis & Jones, 2016). Hotspots for mobulids have not been determined for the WCPFC-CA and PNA fleets are not known to set on mobulid ray associated tuna schools. Safe release guidelines have recently been established for the WCPFC fleets and it is expected that their application will help reduce mobulids post-capture mortality (WCPFC, 2017a).

The five- year average catch rate for mobulid rays in the PNA purse seine fisheries is similar for the associated set types, and higher for the unassociated sets (Table 3).

Table 3. Mobulid interactions per set (average, 2012-2016)

Set type	Number of sets per annum	Number of mobulid interactions (2012-2016)	Number interactions per set
Unassociated	32,716	3,164	0.0193

Source: SPC unpublished.

Although the sample size was very small, Francis and Jones (2016) study suggests that more than 60% of mobulids that are released die. While these numbers seem large, they should be regarded in the context of a vast fishing area and very large total catch. Trembler-Boyer and Brouwer (2016) assessed mobulid species

CPUE for purse seine catch and longline catch. While the CPUE for *Manta birostris,* in purse seine catch was more a reflection of high levels of reporting (100% observer coverage), the longline CPUE was more representative showing consistent catches, with slight decline in 2010-2015 compared to 2005-2010.

Manta and devil rays (Mobulidae) are a by-catch in various pelagic fisheries in tropical and sub-tropical waters. Reported AVM ranges from c. 1·4 to 5·2% for pelagic longline fisheries (Coelho *et al.,* 2011, 2012; Mas *et al.,* 2015), but there is potentially higher mortality in purse-seine fisheries (Zeeberg *et al.,* 2006; Croll *et al.,* 2016) and improved estimates of both AVM and PRM are required for such fisheries. Francis & Jones (2016) recently noted that spinetail devilray Mobula japanica (Müller & Henle 1841) caught by purse seine and brought onboard by brail net could survive release (n=3), although specimens entangled in the netting when brought on-board (n=4) did not survive release.

References:

- Tremblay-Boyer L and S. Brouwer, Review of available information on non-key shark species including mobulids and fisheries interactions, SC 12, 2016. Available at https://www.wcpfc.int/node/27475
- Lawson J, Walls R, Fordham SV, et al (2016) The Global Devil and Manta Ray Conservation Strategy. Doi: 10.7287/peerj.preprints.1731v1/supp-7
- Francis MP, Jones EG (2016) Movement, depth distribution and survival of spinetail devilrays (Mobula japanica) tagged and released from purse-seine catches in New Zealand. Aquatic Conserv: Mar Freshw Ecosyst n/a-n/a. Doi: 10.1002/aqc.2641
- J. R. Ellis*†, S. R. Mccully Phillips* and F. Poisson, A review of capture and post-release mortality of elasmobranchs, *Journal of Fish Biology* (2017) 90, 653–722
- Chapman, PIRFO Fish species ID

Milestone 1: PNA will provide evidence that a dialogue has commenced with national governments and NGOs to assess the direct impact of purse seine free school fisheries on manta rays; and If the outcome is assessed to show UoA does hinder the recovery of these species, PNA will prepare a plan to ensure the PNAFTF does not hinder the recovery of Manta and devil rays will be implemented

Milestone 2: If it is demonstrated that the PNA free school fishery does hinder recovery of these species, PNA will promote the implementation of a strategy for inclusion as an industry code of conduct, PNA Implementation Arrangement or WCPFC Commission Management measures

Note from the above information, in the absence of a dedicated stock assessment, which would appear unlikely, PNA is not able to demonstrate that fishing effort does not hinder recovery, albeit that the evidence many point to inadequate reporting from other fishery sectors. That said, catches in free school fishes tend to be higher in other sets, and evidence would appear to show that careful handling and release procedures can significantly reduce mortality.

SC14 produced safe release guidelines for manta and mobulid rays as follows:

Do's:

- Release rays while they are still free-swimming whenever possible (e.g. back down procedure, submerging corks, cutting net).
- It is preferable that larger rays (>60 kg), that are too large to be lifted safely by hand are brailed out of the net and released using a purpose built large-mesh cargo net or canvas sling or similar device as recommended in document SC08-EB-IP-12 (Poisson *et al*., 2012) [Note: It is preferable that release nets or devices are prepared prior to each set.]
- It is preferable that small (< 30 kg) and medium rays (30-60 kg) are handled by 2 or 3 people and carried by the sides of its wings or preferably using a purpose-built cradle/stretcher while ensuring the safety of the crew.
- When entangled in netting, carefully cut the net away from the animal and release to the sea as quickly as possible while ensuring the safety of the crew.

Don'ts:

- Do not leave a ray on deck until hauling is finished before returning it to the sea.
- Do not punch holes through the bodies of rays (e.g. to pass a cable or line through for lifting the ray).

- Do not gaff, drag, carry, lift or pull a ray by its "cephalic lobes" or tail or by inserting hooks or hands into the gill slits or the spiracles (WCPFC, 2017a).

ISSF has conducted one shark and manta handling workshop for PNA purse seine skippers in Pohnpei, the Marshall Islands, Yaizu and San Diego and are planning two workshops in other PNA countries respectively.

It is noted that attempts to set out a Conservation and Management Measure for Manta Ray release were resisted by Japan

WCPFC 2016 record

Japan could not support the revised draft, relating to paragraph 1's requirement to release specimens unharmed. Japan stated there had been no recommendation from SC to request the Commission to protect this species. Japan recognised that these species were important for some members for reasons other than fisheries, and Japan did not object to those members taking stricter action than required by the Commission. However, that value was no necessarily shared by others, including Japan, so the question was only about whether or not there was a scientific justification for their protection. Japan hoped for a clear recommendation from SC so it could seriously consider supporting this proposal. Japan supported these species as key shark species, and collecting more data without imposing additional data burden, especially on developing countries.

This would suggest that the only course of action available is to PNA is to implement a Manta Ray release policy as a PNA Implementation Arrangement, which would be a binding measure for all licensed vessels fishing in the PNA EEZs. A proposal would need to be tabled for the SPNA meeting in October, 2019, and implemented at the PNA annual meeting in March 2020.

In addition, observers would be requested to observe the voluntary guidelines.

The Shark research Plan, produced at SC 14, includes reference to Develop manta and mobulid - observer training and identification guides (SC14- **EB-WP-04**) (ABNJ+SPC)

WCPFC (2017) Safe Release Guidelines for Sharks and Rays, https://www.wcpfc.int/node/31004

WCPFC. Progress on the WCPFC stock assessments and shark research plan (Summary table), https://www.wcpfc.int/node/30980

7.2.6 International Pole and Line Foundation (IPNLF)

PI Comments:

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
2.2.2 - Secondary species management	SI (d) on Shark finning requires that it is likely that shark finning is not taking place in the UoA at SG	During the recertification of the PNA fishery the CAB confirmed that 429 cases of shark finning occurred in the PNA fishery in recent years. The CAB relied heavily on the Interpretation Log, and what is says on shark finning, to justify their scoring of the shark finning issue in the PNA fishery. The Interpretation Log states, among other things, that: "MSC's shark finning requirements (scoring issues 1.2.1e, 2.1.2d, 2.2.2d and related clauses SA2.4.3-7 in FCR v2.0) assess the level of certainty		<60	The 429 cases referred to were for the period 2012-2015 inclusive (Table 16 of the original recertification report - Blyth-Skyrme et al. 2018). The pattern within these data is for a greatly reducing trend annually, with 179 cases in 2012, and 191 cases in 2013, then 45 cases in 2014 and 14 cases in 2015. As mentioned in the recertification report, particularly fundamental in this decline appears to have been the adoption of CMM 2013-08, which requires that silky sharks (*Carcharhinus falciformis*) - the species most commonly subject to finning - are not retained in whole or in part. The most up to date data available have now been added to the Year 1 audit report, showing that there were 14 cases of finning identified again in 2016 (from six vessel trips), and three cases in 2017 (from one vessel trip). In comparison to the scale of the certified fishery, it is clear that these are 'rare and isolated' cases. In the audit report we have highlighted the approach taken to monitoring and enforcing compliance within the PNA, as well as the current status of open cases where available, but note that 'appropriate sanction' may not require prosecution - there is a sliding scale of penalty in any fishery management system, and warnings are commonly, reasonably issued as the appropriate sanction for minor infringements. Further, where there are more serious cases, developing a prosecution case and then taking it through court can also take time - this is the case with the single more serious offence that is reported against the 2017 year (PNA, pers. comm). Section 40A of the Kiribati Fisheries Act (2010) has also been updated recently to make it possible for administrative penalties to be issued for any fisheries offence in contravention of the Act (http://www.ilo.org/dyn/natlex/docs/ELECTRONIC/89302/102557/F71833887/KIR89302.pdf, and https://www.mfmrd.gov.ki/#) .	Not accepted (no score change)

		that shark finning is not taking place at the time that the fishery is certified. The requirements relate to how the regulations in place and the types of external validation work together to deliver the required confidence". "If rare and isolated cases of shark finning are encountered in the most recent year (or the recent period considered in scoring the fishery, which should be no less than the last full season of landings), the team should evaluate the nature of such cases to determine whether further cases of shark finning could be happening in the fishery in a systematic way. If only one or two cases have been reported, for example, and the				

		vessel/s involved have been appropriately sanctioned, then the team may still conclude that it is likely or highly likely that shark finning is not taking place in any significant way". The fishery can only be given a score of 60 for this SI if the assessment team are satisfied that shark finning is restricted to rare and isolated cases (the "one or two cases" referred to in the interpretation log) and if there is clear evidence that the vessels involved in these instances of shark finning have been "appropriately sanctioned". No concrete evidence that vessels within the UoA have been appropriately sanctioned for shark finning has been produced since the fishery was				

		originally certified in December 2011 despite the MSC's board decision on shark finning pre-dating the original certification. This is a key aspect that needs to be addressed.				

3.2.3 - Compliance and enforcement	Shark finning is an illegal act in the PNA fishery and any vessel involved in this activity is involved in IUU fishing.	The CAB's previous analysis of illegal shark finning incidents focused exclusively on cases that occurred on non-FAD sets. The incidents of shark finning that occurred on FAD sets, where shark fins were illegally transported, landed or transhipped, while vessels were involved in 'MSC fishing activities', were excluded from the analysis. The WCPFC and PNA legal frameworks are clear. It is not only the act of shark finning that is illegal, but also the transportation, landing and transhipments of shark fins that is an illegal act. If fins were transported alongside MSC-certified catch, all those finning incidents should have been included	WCPFC-TCC14-2018-RP02ROP	<60	We note that vessels operating in PNA waters are monitored closely with 100% observer coverage whether or not undertaking MSC sets. As such, the data presented reflect the finning that has occurred on purse seiners within PNA waters. The Audit Team has checked with the PNAO client and was informed that if only vessels with MSC trip tickets (i.e., authorising them to sell product as coming from the certified fishery rather than as coming from PNA waters, irrespective of whether it is freeschool or not) are accounted for, then the figure for finning events falls further - there was one (1) incident in 2016 and zero (0) incidents in 2016 and 2017. However, the data presented in the ROP report are for purse seining within WCPFC waters in their entirety. Of course what occurs aboard vessels outside of PNA waters is not within the purview of the certificate. Nevertheless, comparison between the data for the certified fishery and the data presented in the in the ROP report indicating non-compliance with CMMs highlight the relevance of the MSC programme for promoting compliance and good behaviour, notwithstanding that the data also show that incidents as pointed to (i.e., of setting on cetaceans and whale sharks, and of shark finning) have declined from 2015 to 2017 in all cases - this is clearly good news, generally.	Not accepted (no score change)

		in the analysis to understand the level of compliance of the fishery with WCPFC conservation and management measures and the MSC's shark finning requirements. in past analysis the CAB underplayed the extent of shark finning occurring in the fishery by focusing only on shark finning incidents that occurred during 'free school' or non-FAD sets. This means that the illegal transportation of fins that were obtained from FAD sets, and which were stored on board vessels alongside MSC-certified catch, was conveniently ignored. It might be possible to ignore shark finning incidents on FAD sets under PI 2.2.2 under the pretence that such incidents				

		fall outside of the UoA. When however assessing compliance with CMMs by individual vessels their level of compliance with shark finning regulations should be considered regardless of whether the sets were made on FADs or not. A vessels is either compliant with regulations or not. This PI cannot be scored without considering the level of compliance of vessels within the UoA with WCPFC CMMs, including those pertaining to shark finning. Another important consideration is that the CAB admitted during recertification of the fishery that 1,943 silky sharks were illegally retained on board vessels involved in the PNA fishery in direct contravention				

		of WCPFC Conservation and Management Measures (CMMs). No evidence was presented by the CAB to show that any successful prosecutions or sanctions resulted from these cases of illegal retention of silky sharks on board vessels involved in the PNA fishery. Annex A of the WCPFC-TCC14-2018-RP02ROP report shows some important data regarding compliance of fishing vessels in the UOA and the low level of investigations and sanctions meted out to vessels that are in contravention of CMMs: 1. CMMs that prohibited the setting of purse seines on cetaceans and whale sharks				

		are routinely ignored and sanctions are few. E.g. in 2016, 294 incidents of setting on cetaceans were reported. Only 1.4% (4 cases) resulted in a sanction being imposed on the vessel/master or company. Flag states launched investigations in only 61% of cases (111 cases) reported to them. Most of these remain under investigation, although most of these incidents occurred 2 years or longer ago. 2. Shark finning prosecutions are few. 3. In 2015, only 30 cases of shark finning are listed in Annex 1. This despite 315 cases being reported by observers that year. No explanation is provided for the				

		discrepancy between the two figures. 4. Out of the 30 cases, 14 led to sanctions, 2 supposedly had no infraction connected to them and a further 14 (47%) remain under investigation 3 years later! 5. As mentioned, the ROP report of 2015 lists 315 cases of shark finning. Annex A lists 14 cases which led to sanctions. This would mean that only 4.4% cases of shark finning that occurred in 2015 led to sanctions being imposed. The CAB cannot argue that the vessels in the UoA have a good compliance track record. CMMs are regularly contravened with very few consequences, such as proper sanctions,				

		. If the CAB is aware of additional sources of information other than the data presented in WCPFC-TCC14-2018-RP02ROP that shows that vessels are regularly prosecuted for transgressions such as shark finning, then it should be presented in the surveillance report as evidence that IUU fishing is not rife in the PNA fishery. Without such evidence it is difficult to understand how a score of 60 or more can be awarded under PI 3.2.3.				

General Comments

General comments	Evidence or references	CAB response to stakeholder input	CAB Response Code
General comments on the assessment. Stakeholders should note that input is most useful for assessment teams when attributed to an MSC Performance Indicator or Principle, and provided with objective evidence and references in support of any claims or claimed errors of fact.	Objective evidence or references should be provided in support of any claims or claimed errors of fact.	CABs should respond in this column. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	The CAB shall assign a response code to each row completed by the stakeholder.
SA2.4.4.1 states that "The team shall consider how the level of external validation and regulations in place work together to deliver the required confidence that shark finning is not taking place." Shark finning should not only be assessed as a P1 and/or P2 issue, but also as a compliance issue (P3). If there are repeated transgressions of CMMs by vessels in the UoA (shark finning and other measures) there should be clear evidence that vessels and captains are sanctioned. If this is not happening it is clear that PNA vessels are involved in IUU fishing and this should be fully considered and scored under P3.		Thank you for the comment. This has been addressed in the PI comments in that we believe vessels and captains are sanctioned appropriately (noting that an appropriate sanction for a minor offence may be a warning, only)..	Not accepted (no score change)

7.2.7 Shark Project

PI Comments:

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
2.2.2 - Secondary species management	PI 2.2.2d Finning	Please provide up to date data for the number of finning events that had occurred in the fishery in both, the certified and the non-certified part in 2016,2017 and 2018 to demonstrate that numbers have further decreased as publicly claimed Please also provide clear evidence for the successful prosecution of vessels that have been involved in finning events for the years 2013, 2014, 2015, 2016 to demonstrate that the ban is actually enforced	• There are only 4/ 5 incidents reported in total. • Three of the incidents reported are from July 2012. The MSC ban did not come into effect until 2013. Of the three reported, only two sanctions were imposed and one case was still ongoing. • The two news reports from 2013 relate to long-liners, which are not part of the MSC certified fishery. • The news reports from 2012 state that the sanction applied was a fine. Whilst the Marshall Islands Fisheries law provides a fine level that can be applied from $25,000 to $200,000 plus an amount equivalent to the value of shark fins confiscated, the two vessels reportedly fined had been fined merely $55,000. Therefore, not only was the	65	Thank you for the comment. The up to date finning figures are provided in the body of the main report. This shows that the number of shark finning events has continued to decline over time, with the number of individual cases of shark finning recorded annually dropping from 266 in 2013 to 14 in 2016 (representing six separate vessel trips) and just three in 2017 (representing one vessel trip). On actual MSC trips, the client reported to the Audit team that the incidents were one (1) in 2016, and zero (0) in 2017 and 2018 (noting that 2018 data are provisional). However the data are presented, in comparison to the scale of the certified fishery, it is clear that these are 'rare and isolated' cases. In the audit report we have highlighted the approach taken to monitoring and enforcing compliance within the PNA, as well as the current status of open cases where available, but note that 'appropriate sanction' may not require prosecution - there is a sliding scale	Not accepted (no score change)

		Will the fishery implement a strict fins naturally attached policy to lead by example in implementing this globally recognised best practice in preventing finning which is already discussed at RFMO level for the WCP?	fine at the bottom end of the scale but the level of fine is a drop in the ocean for most fisheries. • Only one report talks of a ban, and that, as aforesaid related to a long-liner vessel that is not part of the certified fishery. • All of the reports relate to sanctions reported to have been imposed in the Marshall Islands, yet the PNA is formed of 8 countries. • The MSC has been unable to provide any evidence that a vessel in the PNA FAD-Free fishery has been appropriately sanctioned since the imposition of the MSC ban. While "fins naturally attached" are already mandatory in EU since 2013 and other countries, the WCPFC, in its WCPFC-TCC14-2018-22, 5th Draft, 2018, proposes to implement the policy in order "to evaluate and assess compliance, as it has not been able to assess compliance with the 5% fins to carcass ratio currently included in CMM 2010-07". • MSC Fisheries Standard v2.01 (31 August 2018) recognises "that a policy requiring the landing of all sharks with fins naturally attached is the most rigorous approach to ensuring that shark finning is not occurring", yet MSC has not made this a mandatory requirement for scoring SG60 or "likely" to ensure that a practice that is officially banned can indeed not happen in a certified fishery.		of penalty in any fishery management system, and warnings are commonly, reasonably issued as the appropriate sanction for minor infringements. In any event, we highlight that the interpretation on shark finning (https://mscportal.force.com/interpret/s/article/Shark-finning-requirements-1527262010507) focuses the Audit Team's attention on the recent period (in fact 'the most recent year'), rather than previously. The Assessment team notes that compliance can take some time, however, and that patterns of activity (in this case a decline) are important, hence we find it important to report finning information from earlier years. Nevertheless, practices and data from 2012/13, as presented, are prior to the introduction of relevant legislation on finning in the WCPFC and should not be used to judge/score the fishery now. 2016, and zero (0) in 2017 and 2018 (noting that 2018 data are provisional). On the last point, we do not know if the PNA will implement a fins attached policy. Nevertheless, we highlight that the 100% observer coverage, including of landings, allows for strict enforcement of the existing restrictions, and identification of non-compliance.	

General comments:

General comments	Evidence or references	CAB response to stakeholder input	CAB Response Code

General comments on the assessment. Stakeholders should note that input is most useful for assessment teams when attributed to an MSC Performance Indicator or Principle, and provided with objective evidence and references in support of any claims or claimed errors of fact.	Objective evidence or references should be provided in support of any claims or claimed errors of fact.	CABs should respond in this column. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	The CAB shall assign a response code to each row completed by the stakeholder.
Please provide the requested data on ETP species bycatch for the most recent years including data for both sets of fishing - unassociated sets and FAD sets.	based on the previous objection and the current discussions about finning and the impact of FADs this would be important to detail	This is not an audit requirement.	Not accepted (no score change)
Please provide the requested data on finning for the most recent years including data for both sets of fishing - unassociated sets and FAD sets	Your reference to the downward trend of finning in WCPFC technical and compliance committee report WCPFC-TCC14-2018-RP02 with 1019, 332, 130 and 22 reported incidences between 2014 and 2017 shows indeed a very much appreciated overall decline of finning in the region. While we agree that "*the measures in CMM 2013-08 [have] been the catalyst" for this encouraging decline, those numbers should still be evaluated with caution, especially the figure for 2017, as this figure "only represents approx. 50% of data collected in 2017*". Furthermore it should be noted that WCPFC-TCC13-2017-RP02 actually had reported only 994, 190, and 97 cases of finning for 2014, 2015, and 2016, which obviously had to be corrected to higher values in the 2018 report for the years 2014 and 2015, as more data had become available.	Thank you. We agree that the decline in finning such that there were extremely low levels in the PNA is welcome. However, the numbers reported in the ROP report are for the entire purse seine operation within the WCPFC, which is clearly not the responsibility of the PNA nor the focus of the audit.	Not accepted (no score change)
Fins naturally attached policy implementation	While "fins naturally attached" are already mandatory in EU since 2013 and other countries, the WCPFC, in its WCPFC-TCC14-2018-22, 5th Draft, 2018, proposes to implement the policy in order "to evaluate and assess compliance, as it has not been able to assess compliance with the 5% fins to carcass ratio currently included in CMM 2010-07". • MSC Fisheries Standard v2.01 (31 August 2018) recognises "that a policy requiring the landing of all sharks with fins naturally attached is the most rigorous approach to ensuring that shark finning is not occurring", yet MSC has not made this a mandatory requirement for scoring SG60 or "likely" to ensure that a practice that is officially banned can indeed not happen in a certified fishery.	We note the comment. However, we also note that the 100% observer coverage in the PNA fishery, and comprehensive observation of landings, provides much stronger assurance that the regulations and restrictions in place are being followed thank if we had to rely simply on a requirement being set and expecting it to be complied with. We are satisfied that the PNA fishery is monitoring catches closely and addressing finning concerns. In any case, we encourage readers to view documents from the proposed new comprehensive shark CMM (https://www.wcpfc.int/iwg-sharks2018) which include reference to fins attached and alternatives.	Not accepted (no score change)

7.2.8 On the Hook

PI Comments:

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
2.2.2 - Secondary species management		1. Please provide clear evidence of sanctions taken against vessels involved in the finning incidents observed from the year 2013 onwards to demonstrate that the ban is effectively enforced. 2. Without a 'fins naturally attached' policy in place, the fishery cannot claim to implement globally best practice. Is the fishery planning to implement such a policy? 3. It is difficult for stakeholders to provide full input to this surveillance audit when the MSC says it is unable currently to share the full research report by Poseidon Aquatic Resource Management Ltd which the MSC has announced contains evidence that shark finning has been reduced in this fishery. Will the fishery explain why the full report regarding 2016 and 2017 data has not been made publicly available ahead of the surveillance audit input period to enable more informed stakeholder engagement? Furthermore, will the CAB also be considering other interpretations of the data as well as that provided by the Poseidon report? Links between members of the Poseidon team and this fishery (as advisors/ assessors) raise some potential questions about the independence of this report as evidence for use in this audit. 4. The CAB should not rely solely on observer data but use a variety of data sources such as at-sea	**Re sanctions (1)**: The MSC has yet to provide clear evidence of sanctions taken against vessels involved in the finning incidents from 2013 onwards for this fishery. They submitted some evidence to the UK Environmental Audit Committee, but this was wholly inadequate. While there were 429 incidences of finning observed between 2012-2015, the 'evidence' provided only consisted of newspaper articles related to 4/5 incidents. 3 of the incidents pre-dated the MSC's ban on finning. 2 relate to long liners which aren't part of the certified fishery. Only one report talks of a ban and that related to a long-lining vessel, therefore doesn't relate to the certified fishery. **Re access to data (3)**: An MSC press release dated 13th May 2019 announced that new data shows a continuing decline in the number of shark finning incidents occurring in the PNA fishery, including the MSC-certified element. However, this press release states that 'the MSC is not able to share the full research report by Poseidon Aquatic Resource Management Ltd'. As such, stakeholders do not have the opportunity to fully examine data beyond 2015 in the 2019 annual surveillance audit. This does not represent adequate stakeholder engagement. **Re data sources (4)**: published work (e.g. Clarke, 2009) has highlighted the need to use a variety of data sources (both catch-based and trade-based) in shark stock assessments.		1. The PNA has provided information in their submission to the Audit Team, and we have summarised that in the section dealing with Recommendation 1. We would also highlight, though, that in common with other fishery regulations and measures, an 'appropriate sanction' does not have to mean prosecution in every case. In fact, a warning may be the appropriate sanction in cases of minor non-conformity (which is the case for almost all recent cases). 2. There is currently a 'comprehensive CMM for sharks' being developed at WCPFC. We would encourage readers to review the ongoing process, here: https://www.wcpfc.int/iwg-sharks2018. In any case, the PNA operates 100% observer coverage and 100% dockside monitoring, and there is zero retention allowed for silky sharks, which is by far the most commonly finned species in the region. Although the survival rate of silky sharks when released is not high, any animals that do survive will benefit much more than if a retention with 'fins attached' policy was adopted. 3. We note that the MSC's report as provided by Poseidon was not discussed with or sanctioned by LR or the Audit team. It was commissioned entirely at the behest of the MSC, and we have not seen the terms of reference, or viewed/commented on the report in any way. 4. We consider the data as provided to us to be very good quality. If the stakeholder is aware of evidence that finning is occurring undetected by the observer programme in the PNA Tuna Fishery then we would welcome it and would pursue the issue further. 5. Simply, yes. The focus on shark finning in the PNA fishery is demonstrably effective and has provided the Assessment and Audit Team with a high degree of confidence that the MSC	Not accepted (no score change)

		inspection reports and port inspections to demonstrate that shark finning is occurring at low levels in the certified PNA fishery. 5. Do you consider the precautionary principle to have been applied with reference to the risk of shark finning in this fishery?			requirements as interpreted are being met. As we have commented elsewhere, there is 100% observer coverage and 100% dockside monitoring coverage in the fishery, with zero retention of silky shark. This gives much greater confidence that the MSC requirements around shark finning, as interpreted (https://mscportal.force.com/interpret/s/article/Shark-finning-requirements-1527262010507), are being met in the PNA Tuna Fishery than if no finning was identified in a fishery with a low level of observer coverage.	

General Comments:

General comments	Evidence or references	CAB response to stakeholder input	CAB Response Code
General comments on the assessment. Stakeholders should note that input is most useful for assessment teams when attributed to an MSC Performance Indicator or Principle, and provided with objective evidence and references in support of any claims or claimed errors of fact.	Objective evidence or references should be provided in support of any claims or claimed errors of fact.	CABs should respond in this column. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	The CAB shall assign a response code to each row completed by the stakeholder.
Compartmentalisation: the compartmentalised nature of this fishery remains a serious sustainability concern. The unit of assessment should not be defined on the basis of 'fishing practice' alone.	The MSC has recognised that this is an issue, launching a further consultation into it in March for which one of the consultation options is to 'remove the term 'fishing practice' from the definition of UoA requiring all practices/ activities by gear-type to be included in the UoA. The PNA 'unassociated' fishery is not entirely separate from the FAD-associated fishery; therefore, the Unit of Assessment being audited here represents an artificial division.	Thank you for the comment. This concern was raised and tested at Objection and no issue was found with it under the MSC requirements as they stood at the time. Of course, it is understood that there is now a consultation on changes to the requirements. If there are changes made to the requirements in future then those will be considered as required.	Not accepted (no score change)

7.3 Harmonised fishery assessments

Harmonisation between the PNA Tuna Fishery and other tuna fisheries has been undertaken recently in a coordinated manner across all CABs through a coordinated effort. For brevity, the full process and all relevant documents have not been reproduced, here. However, the harmonisation process was undertaken prior to the submission of a Variation Request by the CABs to the MSC in December 2018. Full details can be found here: https://fisheries.msc.org/en/fisheries/pna-western-and-central-pacific-skipjack-and-yellowfin-unassociated-non-fad-set-tuna-purse-seine/@@assessments.

In summary, the Variation Request stated the following:

"*There are currently 54 HMS fisheries (counting each stock per fishery in the case of multiple stocks in a single fishery, separately) in the MSC programme, 43 with outstanding conditions in relation to Reference Points, Harvest Control Rules and Harvest Strategies in Principle 1. While conditions have been harmonised (as per Annex PB of the FCRv2.0), the associated timelines have not. This lack of coherence amongst RFMO HMS fisheries and CABs has resulted in inconsistencies between in assessment and certified fisheries and undermines the influence the MSC programme may have on mobilizing RFMOs toward developing harvest strategies for HMS stocks.*

This problem has arisen in part because of shifting MSC requirements and standards for Principle 1 and for harmonization at the same time as many tuna fisheries have been entering the MSC program and becoming certified on staggered timelines. The proposed variations in Section 1 therefore all contribute to a one-off Principle 1 alignment between RFMO HMS fisheries, to which all CABs and all certified, in-assessment and applicant RFMO HMS fisheries will be subject for the stocks in Appendix 2:

- *Fisheries currently scored against CRv1.3 will be rescored against FCRv2.0 for Principle 1 at the next available opportunity and resulting conditions will be harmonized with other relevant RFMO HMS fisheries. It is noted that this rescoring would have to take place at reassessment anyway.*
- *Principle 1 conditions that relate to HCRs and HSs and their associated timelines will be harmonized between all relevant RFMO HMS fisheries. A hard deadline for achievement of the conditions will be set in line with the most recent RFMO workplan as per Appendix 2. It is believed this approach will remove any ambiguity in the condition timelines and enable CABs to measure and assess progress in a meaningful manner.*
- *To facilitate harmonization efforts between CABs, surveillance schedules of the relevant RFMO HMS fisheries will be aligned (to the extent that is practical) so that annual progress can be assessed collectively by CABs.*
- *This variation request does not need to extend to stocks in the program not currently subject to harmonization (i.e. it does not have to be 'future proof') because:*
    a. *the FCP v2.1 explicitly allows for 'exceptional circumstances' when establishing condition timelines at the point of certification that may be longer than one certification period to apply in these cases; and*
    b. *new guidance in the FCP (GBP 1.3) clearly states a preference for harmonization of condition timelines.*

Therefore this mechanism can be carried forward when new timeline harmonization needs arise without the need to vary from MSC requirements."

The MSC subsequently accepted the Variation Request in February 2019, noting:

"Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- *Where applicable, rescoring against v2.0 is to be undertaken at the next surveillance audit and shall follow the process requirements set out in Appendix B*
- *Relevant P1 conditions shall be closed by the proposed dates given in Appendix A as per FCP v2.1 7.28.16.1.b.i and 7.28.16.2 and GCR v2.2 7.4.2.b*
- *All new or in assessment fisheries for which harmonisation is required must be aligned with the applicable timelines given in Appendix A, as per the guidance in the FCP v2.1*
- *CABs shall make efforts to ensure the language of the conditions and milestones is consistent between harmonised fisheries*
- *CABs should make good faith efforts to coordinate surveillance with overlapping fisheries*

- *Reassessments shall be undertaken on usual timelines*."

A list of WCPO fisheries taking skipjack and/or yellowfin tuna subject to harmonization under Principle 1 is shown below:

Certified:

- American Samoa EEZ Albacore and Yellowfin Longline Fishery
- Fiji albacore and yellowfin longline fishery
- French Polynesia albacore and yellowfin longline fishery
- Ishihara Marine Products albacore and skipjack pole and line fishery
- Japanese pole and line skipjack and albacore fishery
- PNA WCP skipjack and yellowfin tuna unassociated tuna purse seine
- PT Citraraja Ampat, Sorong pole and line Skipjack and Yellowfin Tuna
- Solomon Islands skipjack and yellowfin tuna purse seine and pole and line
- SZLC CSFC & FZLC FSM EEZ Longline Yellowfin and Bigeye Tuna
- SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore & yellowfin longline
- Talley's New Zealand skipjack tuna fishery
- TriMarine Western and Central Pacific Skipjack and Yellowfin Tuna
- Walker Seafood Australian albacore, yellowfin tuna, and swordfish longline
- WPSTA purse seine free school yellowfin and skipjack.

In assessment:

- Kiribati albacore, bigeye and yellowfin tuna longline fishery
- Pan Pacific yellowfin, bigeye and albacore longline fishery
- Tropical Pacific yellowfin and skipjack free-school purse seine fishery
- Solomon Islands longline albacore and yellowfin tuna fishery.

Given that re-assessment of the PNA client fishery was undertaken using FCR v2.0, the outcome of the variation for the fishery is that timelines are to be harmonised at this surveillance audit. The Principle 1 hard deadline indicated in the variation for the PNA client fishery is 2021.

As noted against Condition 1, the PNA Tuna Fishery Audit Team agree that there is merit in the position put by PNA for PI 1.2.1, especially in relation to the link between the TAE and scientific advice on stock status. The origin of this stated concern appears to be the first MSC assessment of the PNA unassociated fishery (Banks et al,. 2011), which comments on the lack of a clear link as being a weakness of the VDS. This identified weakness was a factor in a condition on the original assessment for PI 3.2.2 on decision-making processes. The condition indicated that in meeting its requirements, PNA may consider "The link between the VDS TAEs and WCPFC requirements and the scientific advice should be clearly established by the PNA. Records of meetings should demonstrate discussion on VDS TAEs, that scientific advice is incorporated into the decision making process, and that PNA actions are being agreed upon and implemented". It is noted that this condition was closed at the 2nd surveillance audit for the fishery in December 2013.

PNA argue that there have been changes since the original assessment of the fishery which clarify the link between the TAE and the scientific advice on stock status. In its submission to the WPSTA MSC assessment, PNA provide a number of statements which they believe support their position. As indicated, those arguments have not been accepted as a reason to change the harmonised scoring for PI 1.2.1, hence are not repeated in detail here, though there is little commentary by other CABs on the statements made by PNA. Following V2.1 when agreement is not reached, the lowest score is stuck to, meaning current scores are not changed. Section 7.2 (Report 3) provides additional comment from PNA on recent developments on the issue. PNA outline the steps involved in the preparation of CMM 2017-01 and CMM 2018-01 which are described by the Commission as measures to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks in accordance with the agreed work plan for the adoption of harvest strategies under CMM 2014-06. These steps demonstrate the scientific input to the development of the CMMs and PNA's role in their development. PNA also describe developments intended to make the process of determining the TAE more transparent.

Appendix 1 shows the Principle 1 condition milestones and client actions alongside the CMM 2014-06 harvest strategy workplan (as at the December 2018 Commission meeting). The milestones/actions listed for 2018 are those evaluated at this 1st surveillance audit. When written, the 1st audit would have taken place earlier but there were delays due to an objection to certification. The next scheduled audit should take place in late 2019/early 2020 and consider outcomes from the 2019 Commission meeting. This timetable means that no change to the current timelines for the fishery.

Appendix 1. Milestones/Client Action Plan vs WCPFC 2014-06 workplan (as at WCPFC15, December 2018)

Condition 1 (UoA1) Skipjack tuna

	Milestones/CAP	2014-06 workplan as at WCPFC15
2018	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan. **CAP** **By Year 1-2018 PNA will**: 1. Review the responsiveness of the harvest strategy for WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 2. Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO skipjack tuna. 3. Support the implementation of a WCPFC Harvest Strategy Workplan that includes a process for development of a harvest strategy for WCPO skipjack tuna. 4. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO skipjack tuna management within the Tropical Tuna CMM.	Develop harvest control rules (e) and Management strategy evaluation (f). • SC provide advice on candidate harvest control rules based on agreed reference points (ongoing). • Commission consider advice on progress towards harvest control rules (ongoing).
2019	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 2-2019 PNA will**: 1. Develop a strategy to address any shortfalls in the Year 1 Review of the responsiveness of the harvest strategy for	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. (ongoing) • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress

	WCPO skipjack tuna to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 for implementation for application until a HCR for WCPO skipjack tuna is implemented 2. Work towards the adoption of a formal harvest strategy for WCPO skipjack tuna. 3. Implement actions to raise awareness of the need for any additional WCPFC skipjack tuna management measures among PNA Members. 4. Support the undertaking of a new assessment for WCPO skipjack tuna by 2020.	towards harvest control rules. (ongoing). ["TRP shall be reviewed by the Commission no later than 2019" – CMM 2015-06] [Updated stock assessment considered by SC15] [SC to advise on required analyses to support TRP review]
2020	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 3-2020, PNA will:** 1. Prepare an assessment of how the harvest strategy for WCPO skipjack tuna responds to the state of the stock and the extent to which the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 2. Provide evidence of support for the adoption of a formal harvest strategy for WCPO skipjack tuna. 3. Raise awareness of the need for any additional WCPFC skipjack tuna management measures among PNA Members. 4. Promote the adoption by PNA and/or the WCPFC of any additional management measures needed for WCPO skipjack tuna.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. **Adopt a Harvest Control Rule**
2021	**Milestones** Year 4: (Resulting score ≥80) The client will need to provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving management objectives reflected in PI 1.1.1 SG80. **CAP** **By Year 4-2021, PNA will provide evidence that:**	**Harvest Strategy for Skipjack in place**

	1. The harvest strategy for WCPO skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy working together towards achieving management objectives reflected in the target and limit reference points.	

Condition 2 (UoA1) Skipjack tuna

	Milestones/CAP	2014-06 workplan as at WCPFC15
2018	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 1-2018 PNA will**: 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC; 2. Participate in work to refine the initial list of performance indicators for the Tropical Purse Seine Fisheries for the purpose of the evaluation of HCRs agreed at WCPFC13 3. Support WCPFC preparatory MSE work for the tropical purse seine fishery 4. Promote support by PNA Member governments for the adoption and application of a HCR for skipjack; and 5. Collaborate with other stakeholders to support work towards adoption of a HCR for skipjack by the WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies.	Develop harvest control rules (e) and Management strategy evaluation (f). • SC provide advice on candidate harvest control rules based on agreed reference points (ongoing). • Commission consider advice on progress towards harvest control rules (ongoing).
2019	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 2-2019 PNA will**: 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC 2. Support MSE work for the Tropical Purse seine Fishery 3. Promote support by PNA Members for the adoption and application of a HCR for skipjack; and 4. Collaborate with other stakeholders to support work towards adoption by the WCPFC of a HCR for skipjack in	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. (ongoing) • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing). ["TRP shall be reviewed by the Commission no later than 2019" – CMM 2015-06]

	accordance with the WCPFC workplan for the adoption of harvest strategies.	[Updated stock assessment considered by SC15] [SC to advise on required analyses to support TRP review]
2020	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 3-2020, PNA will:** 1. Work with SPC on analysis of candidate HCRs for skipjack for PNA and the WCPFC 2. Support MSE work for the Tropical Purse seine Fishery 3. Promote support by PNA Members for the adoption and application of a HCR for skipjack; and 4. Collaborate with other stakeholders to support the adoption by the WCPFC of a HCR for skipjack in accordance with the WCPFC workplan for the adoption of harvest strategies.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. **Adopt a Harvest Control Rule**
2021	**Milestones** Year 4: (Resulting score ≥80) • The client will need to provide evidence that well defined harvest control rules taking into account the main uncertainties are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. **CAP** **By Year 4-2021, PNA will provide evidence that:** 1. Well-defined harvest control rules, under PNA or WCPFC, taking into account the main uncertainties, are in place for skipjack tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the point of recruitment impairment is approached, and are expected to keep the stock fluctuating around a target level consistent with (or above) MSY; and 2. The tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Harvest Strategy for Skipjack in place**

Condition 3 (UoA2) Yellowfin tuna

	Milestones/CAP	2014-06 workplan as at WCPFC15
2018	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 1-2018 PNA will**: 1. Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO yellowfin tuna. 2. Support the adoption of a WCPFC Harvest Strategy Workplan that includes a process for development of a harvest strategy for WCPO yellowfin tuna. 3. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO yellowfin tuna management.	• • • [SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]
2019	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 2-2019 PNA will**: 1. Support the implementation of a harvest strategy process for the WCPFC, including the adoption of a harvest strategy for WCPO yellowfin tuna. 2. Work towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. 3. Implement actions to raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 4. Undertake activities either directly by PNA or through FFA to ensure appropriate focus is given to more effective	Agree Target Reference Point (b). • SC provide advice on potential Target Reference Points for yellowfin. • Commission agree a TRP for yellowfin.

	measures for WCPO yellowfin tuna management at the 14th Session of the WCPFC (December 2017).	
2020	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that the harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (see Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 3-2020, PNA will:** 1. Provide evidence to illustrate working towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. 2. Raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 3. Prepare, with the support of SPC, an assessment of how the elements of the harvest strategy for WCPO yellowfin tuna work together to achieve the management objectives for this fishery. 4. Promote the adoption by PNA and/or the WCPFC of any additional management measures needed for WCPO yellowfin tuna.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. (ongoing). • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2021	**Milestones** Year 4: (Resulting score ≥80) • The client will need to provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving management objectives reflected in PI 1.1.1 SG80. **CAP** **By Year 4-2021, PNA will provide evidence that:** 1. The harvest strategy for WCPO yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy working together towards achieving management objectives reflected in the target and limit reference points.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. **Adopt a Harvest Control Rule**

Condition 4 (UoA2) Yellowfin tuna

	Milestones/CAP	2014-06 workplan as at WCPFC15
2018	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as LRPs are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **<u>By Year 1-2018 PNA will</u>**: 1. Support and participate in WCPFC work on performance indicators to evaluate performance of harvest control rules for yellowfin tuna WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies. 2. Promote support by PNA Member governments for the adoption and application of a HCR for yellowfin tuna. 3. Collaborate with other stakeholders to support work towards adoption of a HCR for yellowfin tuna by the WCPFC in accordance with the WCPFC workplan for the adoption of harvest strategies; and. 4. Act to raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members.	• • • [SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]
2019	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as LRPs are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **<u>By Year 2-2019 PNA will</u>**: 1. Support and participate in WCPFC work on a TRP for yellowfin tuna and support the adoption of a TRP for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies. 2. Support MSE work for yellowfin tuna. 3. Collaborate with other stakeholders to support work towards adoption by the WCPFC of a HCR for skipjack	Agree Target Reference Point (b). • SC provide advice on potential Target Reference Points for yellowfin. • Commission agree a TRP for yellowfin.

	in accordance with the WCPFC workplan for the adoption of harvest strategies; and 4. Support any additional WCPFC management measures needed for WCPFC yellowfin tuna.	
2020	**Milestones** Years 1, 2 and 3: (Resulting score 70) • The client will need to provide evidence that it is actively working to ensure that well defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as LRPs are approached. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan (Appendix 10, Blyth-Skyrme et al. 2018). **CAP** **By Year 3-2020, PNA will:** 1. Support MSE work for yellowfin tuna. 2. Support and participate in WCPFC work on a HCR for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies. 3. Collaborate with other stakeholders to support the adoption by the WCPFC of a HCR for yellowfin tuna in accordance with the WCPFC workplan for the adoption of harvest strategies.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. (ongoing). • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2021	**Milestones** Year 4: (Resulting score ≥80) • The client will need to provide evidence that well defined HCRs taking into account the main uncertainties are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as LRPs are approached. **CAP** **By Year 4-2021, PNA will provide evidence that:** 1. Well-defined harvest control rules, taking into account the main uncertainties, are in place for yellowfin tuna that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the point of recruitment impairment is approached, and are expected to keep the stock fluctuating around a target level consistent with (or above) MSY; and 2. The tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Develop harvest control rules (e) and Management strategy evaluation (f) • SC provide advice on performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. **Adopt a Harvest Control Rule**