

MSC SUSTAINABLE FISHERIES CERTIFICATION

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



Public Certification Report

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Glossary

B _{LIM}	Biomass limit reference point
B _{MSY}	The level of biomass resulting in maximum sustainable yield
CAB	Conformity Assessment Body
CCMs	WCPFC Commission Members, Cooperating Non-Members and Participating Territories
CITES	Commission on the International Trade in Endangered Species
CMM	Conservation and management measure
CNM	Co-operating Non Member
CoC	Chain of custody
CPUE	Catch per unit effort
DG Mare	EU Directorate-General Maritime Affairs and Fisheries
EEZ	Exclusive Economic Zone
ERA	Ecological risk assessment
ETP	Endangered, threatened or protected
F	Fishing mortality
FAD	Fish aggregating device
FAO	Food and Agriculture Organization of the United Nations
FFA	Forum Fisheries Agency
FFC	Forum Fisheries Committee
FIMS	Fisheries information management system
FL	Fork length
F _{LIM}	The rate of fishing mortality at the limit reference point
F _{MSY}	The rate of fishing mortality that results in the maximum sustainable yield
FR	Final report
FSM	Federated States of Micronesia
FSMA	Federated States of Micronesia Arrangement
HCR	Harvest control rule
IUU	Illegal, unreported and unregulated
LRP	Limit reference point
MFCL	MULTIFAN-CL stock assessment software
MFMRD	Ministry of Fisheries and Marine Resource Development (Kiribati)
MOW	Management objectives workshop
MSC	Marine Stewardship Council
MSY	Maximum sustainable yield
MTCs	Minimum terms and conditions
NFD	Non-fishing day
NGO	Non-governmental organisation
NPOA	National plan of action
OFF	Oceanic fisheries programme (Part of the SPC)
PA	Precautionary approach

PAE	Party allowable effort
PCDR	Public comment draft report
PCR	Public certification report
PI	Performance indicator
PNA	Parties to the Nauru Agreement
PNAFTF	PNA Western and Central Pacific skipjack and yellowfin, unassociated / non-FAD set, tuna purse seine fishery (i.e., the fishery under assessment)
PNAO	Parties to the Nauru Agreement Office
PNG	Papua New Guinea
PRI	Point of recruitment impairment
PTTP	Pacific tuna tagging programme
RBF	Risk-based framework
RFMO	Regional fisheries management organisation
ROP	Regional observer programme
RTTP	Regional tuna tagging project
SB	Spawning biomass
SB _{current}	Average spawning biomass over recent years
SB _{MSY}	Spawning biomass at MSY
SC	Science Committee (of the WCPFC)
SKJ	Skipjack
SG	Scoring guidepost
SI	Scoring issue
SSB	Spawning stock biomass
SSI	Species of special interest
SPC	Secretariat to the Pacific Community
TAC	Total allowable catch
TAE	Total allowable effort
TCC	Technical and Compliance Committee (of the WCPFC)
TRP	Target reference point
UNCLOS	United Nations Convention on Law of the Sea
UNFSA	United Nations Fish Stock Agreement
UoA	Unit of assessment
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

1 Executive summary

This report provides details of the MSC reassessment of the Parties to Nauru Agreement (PNA) PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery (PNAFTF). The client was the PNA, and the reassessment process commenced on 4th August 2016.

A comprehensive programme of stakeholder consultations were carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources. A rigorous assessment of the wide ranging MSC Principles and Criteria was undertaken by the assessment team and a detailed and fully referenced scoring rationale is provided in the assessment tree provided in Appendix 1 of this report.

The Target Eligibility Date for the reassessment is 15th June 2017.

The assessment team for this fishery assessment comprised of Dr. Rob Blyth-Skyrme, who acted as team leader and primary Principle 2 specialist; Kevin McLoughlin, who was primarily responsible for evaluation of Principle 1, and Dave Japp, who was primarily responsible for evaluation of Principle 3.

The PNAFTF is prosecuted with purse seine nets targeting free school tuna in the EEZs (i.e., not including waters inside 12 nautical miles (nm) and archipelagic waters) of the PNA and Tokelau. The fishery is divided in to two Units of Assessment (UoAs) – UoA 1 targets skipjack tuna (*Katsuwonus pelamis*), and UoA 2 targets yellowfin tuna (*Thunnus albacares*).

There are a number of areas which reflect particularly positively on the PNAFTF.

For Principle 1, these include that there is a comprehensive range of information available on stock structure, stock productivity and other matters to support the harvest strategy. Stock assessments for skipjack tuna and yellowfin tuna are undertaken regularly, and the assessments are subject to review and development. There is an extensive programme of research undertaken in support of the fisheries management approach.

Importantly, for skipjack tuna, current fishing mortality is below the MSY level ($F_{2008-11}/F_{MSY}=0.61$ for the base case), and spawning biomass is above the level that will support the MSY ($SB_{2015}/SB_{MSY} = 2.56$ for the base case). For yellowfin tuna, current fishing mortality is below the MSY level ($F_{current}/F_{MSY} = 0.72$), and recent levels of spawning potential were most likely above the level which will support the MSY ($SB_{current}/SB_{MSY} = 1.37$).

For Principle 2, a key feature of the PNAFTF is that it is an exceptionally clean fishery, with more than 98.5% of the catch in 2014-2015 being comprised of skipjack tuna and yellowfin tuna as the target species. Bigeye tuna then make up just over 1% of the catch, and all other species combined made up less than 0.2% of the catch.

There is also a focus on managing interactions with ETP shark, cetacean and turtle species, while there is no interaction with seabed habitats in the PNAFTF. Ecosystem interactions are addressed through appropriate management of the fishery in the context of skipjack tuna being a key ecosystem element of the Western and Central Pacific Ocean (WCPO) warm pool ecosystem.

For Principle 3, positive aspects include that there is a well-established legislative framework for fisheries operating within the WCPO. There is an effective national legal system and

a framework exists between not only the PNA parties, but also the consolidation of the PNA members' national commitments to the regional management of the fishery.

There is also organized and effective cooperation between parties, as evidenced through the participation of PNA states at the WCPFC level, as well as between cooperating states within the PNA. There are agreements between PNA parties on the principles associated with stock management and ecosystem-based management. Finally, a comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.

Overall, on completion of the assessment and scoring process to this stage, the Assessment Team concluded that the PNAFTF should score as follows:

Table 1: Principle scores for each UoA of the PNAFTF

Principle	UoA	
	1 (skipjack tuna)	2 (yellowfin tuna)
Principle 1 – Target Species	85.8	82.5
Principle 2 – Ecosystem	92.0	92.0
Principle 3 – Management	87.5	87.5

As such, it is determined that the PNAFTF meets the MSC Standard and should be recertified as a sustainable fishery.

Conditions & Recommendations

Weaknesses were identified in a number of areas, where the PNAFTF was considered to be not meeting the MSC passing score of 80, therefore triggering the introduction of binding Conditions of Certification; these must be addressed in the specified timeframe. Full explanation of these conditions is provided in the relevant scoring rationales provided in Appendix 1 of the report, and in Appendix 2, but brief summaries of the conditions are presented in Table 2, below:

Table 2: Summary of the conditions set against the PNAFTF at reassessment

Number	UoA	PI and SI	Condition
1	1	1.2.1 S1a	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.
2	1	1.2.2 S1a, S1b and S1c	<p>S1a) 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.</p> <p>S1b) By the fourth surveillance audit, the client will need to provide evidence that the HCRs are likely to be robust to the main uncertainties.</p> <p>S1c) By the fourth surveillance audit, the client will need to demonstrate that available evidence indicates that the tools in use are</p>

Number	UoA	PI and SI	Condition
			appropriate and effective in achieving the exploitation levels required under the HCRs.
3	2	1.2.1 Sla	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.
4	2	1.2.2 Sla, Sib and Slc	<p>Sla) 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.</p> <p>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.</p> <p>Slc) 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.</p>
5	1	2.3.2 Sla	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 <i>Manta</i> rays and devil rays.
6	2	2.3.2 Sla	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 <i>Manta</i> rays and devil rays.

In addition, the assessment team made three non-binding recommendations. These are not the result of a failure to meet the unconditional pass mark, but, in the opinion of the assessment team, they would make a positive contribution to ongoing efforts to ensure the long term sustainability of the fishery (Table 3).

Table 3: Summary of the non-binding recommendation set against the PNAFTF at reassessment

Number	UoA	PI and SI	Recommendation
1	1 & 2	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.
2	1 & 2	2.3.1, Slc	Although the number of pollution incidences from the 1,400-1,500 purse seine vessels considered in the Richardson <i>et al.</i> (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

Number	UoA	PI and SI	Recommendation
			initiatives identified by Richardson <i>et al.</i> (2015), which are as follows: ii) <i>A regional outreach and compliance assistance programme on marine pollution prevention for fishing vessel crews, business operators and managers; and</i> iii) <i>Improvements in Pacific port waste reception facilities to enable them to receive fishing vessel wastes on shore.</i>
3	1 & 2	3.1.3, Sla	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.

For interested readers, the report also provides background to the target species and fishery covered by the assessment, the wider impacts of the fishery and the management regime, supported by full details of the assessment team, a full list of references used, and details of the stakeholder consultation process.

Acoura Marine Ltd. confirms that the PNAFTF is within scope.

2 Authorship and peer reviewers

2.1 Assessment team

All team members listed below have completed all requisite training and signed all relevant forms for assessment team membership on this fishery.

Assessment team leader: Dr. Rob Blyth-Skyrme

Primarily responsible for assessment under Principle 2

Rob started his career in commercial aquaculture, but prior to undertaking his PhD he shifted focus to the sustainable management of wild fisheries. He subsequently worked at the Eastern Sea Fisheries Joint Committee where he became the Deputy Chief Fishery Officer. He then moved to Natural England, acting as the organisation's senior advisor to UK Government on marine fisheries and environmental issues, leading a team dealing with fisheries policy, science and nationally significant fisheries and environmental casework.

Rob now runs Ichthys Marine Ecological Consulting Ltd., a marine fisheries and environmental consultancy. As well as undertaking general fisheries consultancy, he has undertaken all facets of MSC work as a lead assessor, expert team member and peer reviewer across a large number of fisheries, including leading the assessment team that conducted the 2012 reassessments of the AAFA and WFOA North Pacific albacore and AAFA and WFOA South Pacific albacore fisheries. Rob is a member of the MSC's Peer Review College, and has completed the MSC v1.3 and v2.0 training modules.

Expert team member: Kevin McLoughlin

Primarily responsible for assessment under Principle 1

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. He was responsible for the production of annual status reports for Australian government-managed fisheries for a number of years. Kevin 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. Mr McLoughlin was also a delegate at meetings of the Commission for the Conservation of Southern Bluefin Tuna led Australia's delegation to 2006 scientific meetings of the Commission.

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 Fiji albacore longline fishery, Australia's blue grenadier fishery, as well as the Western Australia Exmouth Gulf and Shark Bay prawn trawl fisheries. He was a peer reviewer for the New Zealand albacore troll fishery and for the AAFA and WFOA North and South Pacific fisheries and has undertaken surveillance audits for a number of fisheries.

Kevin is currently a member of teams assessing the Northeastern Tropical Pacific Purse Seine Yellowfin and Skipjack Tuna Fishery, and the Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna Fishery.

Expert team member: Dave Japp

Primarily responsible for assessment under Principle 3

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.

Dave's 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. Dave 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, he has 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 was an MSC assessor of the South African hake fishery from 2002 through to reassessment in 2009. He is presently on the assessment team for Tristan da Chuna lobster, has conducted pre-assessments for Kenya lobster, Tanzanian octopus, Mozambique shrimp, Patagonian toothfish, South Africa tuna pole (albacore), has been appointed on the Russian Pollock assessment team, has refereed numerous MSC assessments and also supervises MSC-related Chain of Custody audits in South Africa.

2.1.1 RBF training

Dr. Rob Blyth-Skyrme and Kevin McLoughlin have been fully trained in the use of the MSC's Risk Based Framework (RBF), but the RBF was not used for this fishery assessment.

2.2 Peer reviewers

The two Peer Reviewers who reviewed this report were Bob O'Boyle and Jim Andrews, both of whom were selected through the MSC's Peer Review College system.

Both Peer Reviewers have extensive experience in the MSC assessment process, and across a broad range of fisheries, including large scale, pelagic fisheries. Neither is currently involved in any fisheries management issues in the Pacific, which is ideal in avoiding any bias or potential conflicts of interest.

A summary CV for each is available in the 'assessment downloads' section of the fishery's entry on the MSC website (https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/pna_western_central_pacific_tuna_unassociated_nonFAD_purse_seine/reassessment-downloads).

3 Description of the fishery

3.1 Units of assessment (UoAs) and scope of certification sought

There were two proposed Units of Assessment (UoAs) for the PNA Western and Central Pacific skipjack and yellowfin, unassociated / non-FAD set, tuna purse seine fishery (PNAFTF), covering the freeschool (unassociated, non-Fish Aggregating Device) purse seine fishery targeting 1) skipjack tuna (*Katsuwonus pelamis*) and 2) yellowfin tuna (*Thunnus albacares*) in the EEZ of the PNA and Tokelau (noting that Tokelau is not a member of the PNA, but signed an agreement with the PNA in 2012 to join the PNA vessel day scheme (VDS). There are no other eligible fishers:

UoA 1	
Species:	Skipjack tuna (<i>Katsuwonus pelamis</i>)
Stock:	Western and Central Pacific Ocean (WCPO) skipjack tuna
Geographical area:	Western and Central Pacific in the EEZs (i.e., not including archipelago waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokelau
Harvest method:	Purse seine targeting freeschool (unassociated / non FAD set) skipjack tuna (noting the WCPFC definition of a FAD ¹)
Client Group:	Vessels operating under the Vessel Day Scheme (VDS) as managed and monitored by the PNA Office on behalf of the PNA (Papua New Guinea, Kiribati, Federated States of Micronesia, Solomon Islands, Marshall Islands, Nauru, Palau and Tuvalu) and Tokelau.
Other eligible fishers:	None

UoA 2	
Species:	Yellowfin tuna (<i>Thunnus albacares</i>)
Stock:	Western and Central Pacific Ocean (WCPO) yellowfin tuna
Geographical area:	Western and Central Pacific in the EEZs (i.e., not including archipelago waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokelau
Harvest method:	Purse seine targeting freeschool (unassociated / non FAD set) yellowfin tuna (noting the WCPFC definition of a FAD ¹)
Client Group:	Vessels operating under the Vessel Day Scheme as managed and monitored by the PNA Office on behalf of the PNA (Papua New Guinea, Kiribati, Federated States of Micronesia, Solomon Islands, Marshall Islands, Nauru, Palau and Tuvalu) and Tokelau.
Other eligible fishers:	None

¹ The definition of a FAD is as defined by the WCPFC (2009b) in CMM 2009-02: “any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with”.

This UoAs as defined were compliant with client wishes for assessment coverage and in full conformity with MSC criteria.

3.2 Consideration of MSC scope criteria

The MSC FCR v.2.0 (MSC 2014) requires consideration of fisheries under assessment against the following scope requirements:

- 7.4.1.1: Species in scope – Skipjack tuna and yellowfin tuna are not among the list of taxa that may not be target species under Principle 1.
- 7.4.1.2: Poisons or explosives – The PNAFTF does not use poisons or explosives.
- 7.4.1.3: Controversial unilateral exemptions – the PNAFTF is not conducted under a “*controversial unilateral exemption to an international agreement*”.
- 7.4.1.4: Forced labour violations – The client or client group shall not include an entity that has been successfully prosecuted for a forced labour violation
- 7.4.2. Controversial disputes – there are mechanisms in place for resolving disputes between the fishery and the management system.
- 7.4.3: Enhanced fishery – The PNAFTF is not enhanced.
- 7.4.4: Introduced species based fishery – Both skipjack tuna and yellowfin tuna are native to the Western and Central Pacific Ocean (WCPO), and so ISBF considerations do not apply.

Acoura Marine Ltd therefore confirms that the PNAFTF is within scope of the MSC certification sought.

3.3 Final UoCs

UoC 1	
Species:	Skipjack tuna (<i>Katsuwonus pelamis</i>)
Stock:	Western and Central Pacific Ocean (WCPO) skipjack tuna
Geographical area:	Western and Central Pacific in the EEZs (i.e., not including archipelagic waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokelau
Harvest method:	Purse seine targeting freeschool (unassociated / non FAD set) skipjack tuna (noting the WCPFC definition of a FAD ¹)
Client Group:	Vessels operating under the Vessel Day Scheme (VDS) as managed and monitored by the PNA Office on behalf of the PNA (Papua New Guinea, Kiribati, Federated States of Micronesia, Solomon Islands, Marshall Islands, Nauru, Palau and Tuvalu) and Tokelau.
Other eligible fishers:	None

UoC 2	
Species:	Yellowfin tuna (<i>Thunnus albacares</i>)
Stock:	Western and Central Pacific Ocean (WCPO) yellowfin tuna
Geographical area:	Western and Central Pacific in the EEZs (i.e., not including archipelago waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokelau
Harvest method:	Purse seine targeting freeschool (unassociated / non FAD set) yellowfin tuna (noting the WCPFC definition of a FAD ¹)
Client Group:	Vessels operating under the Vessel Day Scheme as managed and monitored by the PNA Office on behalf of the PNA (Papua New Guinea, Kiribati, Federated States of Micronesia, Solomon Islands, Marshall Islands, Nauru, Palau and Tuvalu) and Tokelau.
Other eligible fishers:	None

3.3.1 Total WCPFC catch and UoA and UoC catch for the target species

Note that the total WCPFC catch data presented in Table 4 and Table 5, below, are derived from Brouwer *et al.* (2016), the UoA catch data for 2014 are derived from Daume & Morison (2016b), while the catch data for 2015 were provided by M. Brownjohn (pers. comm.).

Table 4: UoA 1 (skipjack tuna) catch data

Total WCPFC catch	Year	2015	Amount	1,831,440 t
Proportion taken by UoA	Year	2015	Amount	28.1%
Proportion taken by UoC	Year	2015	Amount	28.1%
Total green weight catch by UoC	Year (most recent)	2015	Amount	515,151 t
	Year (2 nd most recent)	2014	Amount	617,870 t

Table 5: UoA 2 (yellowfin tuna) catch data

Total WCPFC catch	Year	2015	Amount	575,901 t
Proportion taken by UoA	Year	2015	Amount	23.5%
Proportion taken by UoC	Year	2015	Amount	23.5%
Total green weight catch by UoC	Year (most recent)	2015	Amount	135,462 t
	Year (2 nd most recent)	2014	Amount	131,250 t

3.4 Overview of the fishery

3.4.1 Purse Seine Fishing Method

Purse seine fishing for tuna involves circling a tuna school with a deep curtain of netting. A float line mounted on the top of the net keeps it at the surface while the bottom of the net is weighted. The bottom of the net is pursed (closed) underneath the fish school by hauling a wire running from the vessel through rings along the bottom of the net and then back to the vessel, preventing the fish from swimming down to escape the net or 'sounding'. There are up to 3 sets in a day. Trip lengths may last from one to six weeks (M. Brownjohn, pers. comm.).

Fishing for tuna with purse seines may occur by setting the net opportunistically around free-swimming tuna schools, or around natural objects, the being referred to as 'free school sets' and the latter being referred to as 'log sets'. Vessels may also deploy nets around fish aggregation devices (FADs), which are specifically designed to attract and hold fish around them and are either anchored to the seabed or left to drift in the prevailing currents. FADs may be constructed from an array of materials, including ropes, palm tree fronds and old netting. As described earlier in the report, the UoA/UoC covered in this report is for 'unassociated' or 'free school' purse seine fishing (i.e. not associated with FADs as defined by the WCPFC²) for skipjack tuna (*Katsuwonus pelamis*) and yellowfin tuna (*Thunnus albacares*) for vessels licensed to fish by PNA parties (Papua New Guinea, Kiribati, Federated States of Micronesia, Solomon Is, Nauru, Marshall Islands, Tuvalu and Palau) and Tokelau, in their respective EEZs (Figure 1).



Figure 1: The PNA geographical area (in yellow), with Tokelau (as a signatory to the PNA vessel day scheme (VDS) but not part of the PNA) highlighted in green. Blue is international waters (i.e., outside any national EEZ).

Searching for the fish schools and assessing their size and direction of movement is an important part of the fishing operation. Sophisticated electronics, such as echo sounders,

² The definition of a FAD is as defined by the WCPFC (2009b) in CMM 2009-02: "any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with". Additionally, under PNA rules, catches from sets that include FAD-associated indicator species (i.e. oceanic puffer fish, ocean triggerfish and drummer) are ineligible to proceed forward to carry the MSC logo, whether or not a FAD is seen.

sonar, and track plotters, may be used to search for and track schools, assessing their size and movement and keeping in touch with the school while it is surrounded with the seine net. Crows nests may be built on the masts for further visual support. Large vessels can have observation towers and helicopter landing decks. Helicopters and spotter planes are used for detecting fish schools. A very heavy boom, which carries the power block used to haul the net, is fitted at the mast. Once pursing is completed, the net hauling (or “net rolling”) process begins. The net is stacked back on the back deck of the vessel with the aid of the power block and the crew. Vessels are usually equipped with a skiff which is used to help pull the net around when encircling the school (Figure 2).

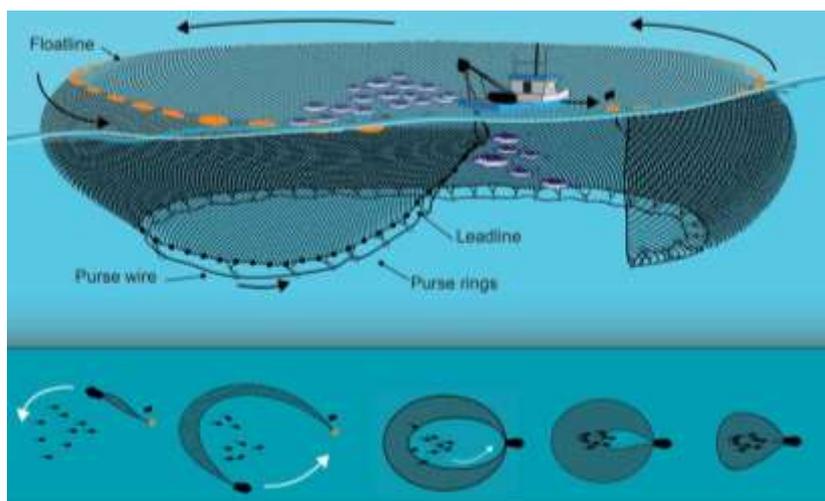


Figure 2: Illustration of an unassociated tuna purse seine set
(Source: <http://www.afma.gov.au/portfolio-item/purse-seine/>).

The catch is stowed in wells, each holding approximately 50-65 t, but the number of wells and their capacity will vary according to vessel size. Fish are generally frozen in a brine mix once in the wells and offloaded to carriers or directly into marketing or processing facilities when in port. Some seiners may also have small blast freezers and holds selected for ultra-low temperature handling of select, high quality fish. In recent years, ‘unassociated’ or ‘free school’ purse seine fishing accounts for approximately 50% of the total tuna catch in the WCPO. Unassociated sets have increased from around 50% of the total number of sets in 2000 to approximately 70% of all sets by 2015 (based on data in Williams & Terawasi 2016). Fishing by PNA vessels takes place between 20°N and 20°S, across a combined EEZ area extending over 14.3 million square kms (Figure 1).

3.4.2 Parties to the Nauru Agreement (PNA)

The Nauru Agreement (PNA 1982) is a regional agreement to facilitate cooperation in the management of fisheries resources of common interest. The Nauru Agreement is a binding Treaty-level instrument considered to be a sub-regional or regional fisheries management arrangement for the purpose of the United Nations Fish Stocks Agreement (UNFSA) – the agreement requiring management of straddling/highly migratory fish stocks on a sub-region by sub-region basis through Regional Fisheries Management Organisations (RFMOs), and the WCPFC Convention (the regional fisheries agreement covering the WCPFC convention area – the WCPFC-CA). The Solomon Islands, Tuvalu, Kiribati, Marshall Islands, Papua New Guinea, Nauru, Federated States of Micronesia and Palau, commonly referred to as the Parties to the Nauru Agreement (PNA), have worked collaboratively since 1982 to manage the tuna stocks within their national waters, and are full members of the WCPFC. The initial focus for PNA was to control access by vessel number, later evolving into limit by vessel days

(the Vessel Day Scheme, VDS). Tokelau is not a member but in 2012 signed an agreement with the PNA to join the VDS. Catches from the EEZs of this alliance of Pacific island states collectively account for a significant bulk of the region’s tuna catch and the majority of the purse seine catch. The PNA coordinates the implementation of management measures with a view to enhancing economic benefits from the fishery. The PNA secretariat is located in Majuro in the Marshall Islands. Its objectives are to enhance regional solidarity and promote economic control and participatory rights over tuna resources in PNA waters.

3.4.3 History of Purse Seine Fishing in the Pacific

Substantive purse seine fishing activities in the Western Central Pacific Ocean (WCPO) were first undertaken by the Japanese in the 1920s and 1930s in Micronesia. Industrial development of purse seine fishing evolved from a series of trials largely sponsored by the Japanese during the late 1960s and early 1970s (Gillett 2007). The purse seine technique evolved from other regional fisheries, namely eastern Pacific and off Japan, but faced particular development problems in the Pacific because of characteristically clear water and deep thermocline in the equatorial Pacific which created unfavourable conditions for purse-seining – the tuna schools tended to be smaller, faster-moving, and diving deeper than those in the Eastern Pacific Ocean.

By the late 1970s there were several fully commercial Japanese and American purse seine operations in the western equatorial area of the Pacific Islands. The number of purse seine vessels operating in the Pacific Islands increased rapidly during the early 1980s. The USA purse seine fleet moved in quickly from the eastern Pacific due to the very strong El Niño event of 1982–83 and pressure to reduce dolphin mortality in their traditional fishing grounds. In 1983, 62 USA seiners caught 179,000 t of tuna in the Pacific Islands area. During the period from the mid-1980s to 2003, the regional purse seine fleet expanded, albeit at a slower rate, and the national composition of the fleet became more diverse, with an expansion to include other Asian fishing nations, Taiwan, Korea, Philippines, followed by China and New Zealand. A more recent group of entrants to the fishery include the fleets of Spain, El Salvador and Ecuador. Access for these groups of vessels is under regional or bilateral fisheries partnership arrangements or agreements.

Over the last forty years there has been a general increase in the proportion of tuna caught by purse-seining relative to that by longline or pole-and-line. About 80 percent of the tuna in the region is presently caught by purse seine (Figure 3).

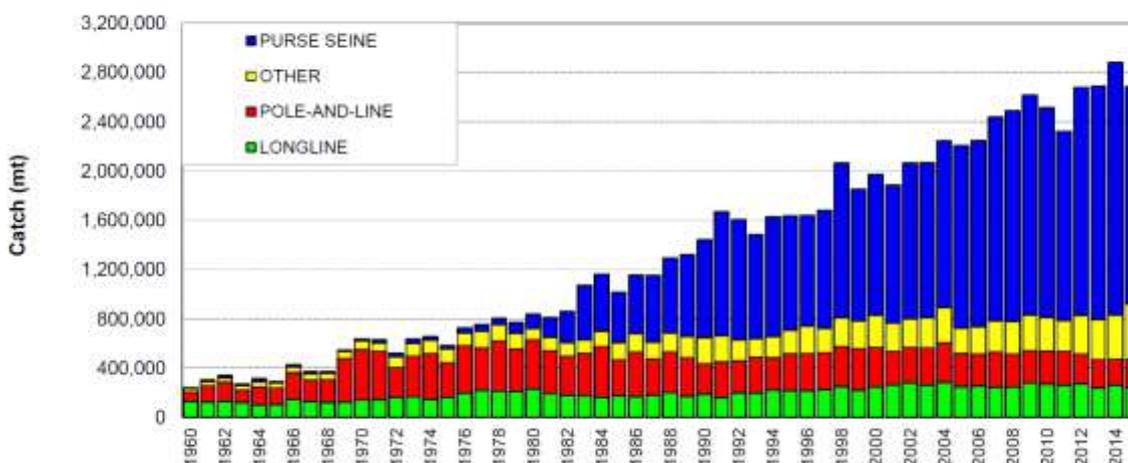


Figure 3: Catch (t) of tuna in the WCPFC-CA by purse seine, pole-and-line, longline and other gear types. (Source: Williams & Terawasi 2016).

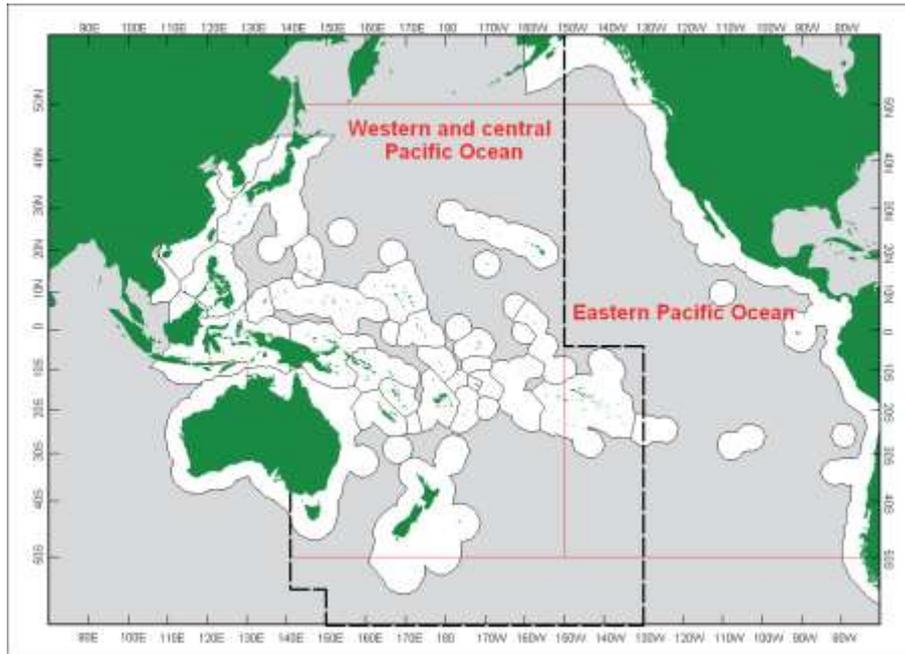


Figure 4: The WCPO, the Eastern Pacific Ocean; the WCPFC-CA boundary (dashed lines); and the EEZs of Pacific Ocean countries (unshaded).

3.4.4 Catch and effort

Catches for the WCPFC Convention Area (WCPFC-CA – see Figure 4) are provided in Williams & Terawasi (2016). The total tuna catch for 2015 (provisional) was estimated at 2,687,840 mt, the third highest on record and nearly 200,000 mt below the 2014 record catch (Figure 5).

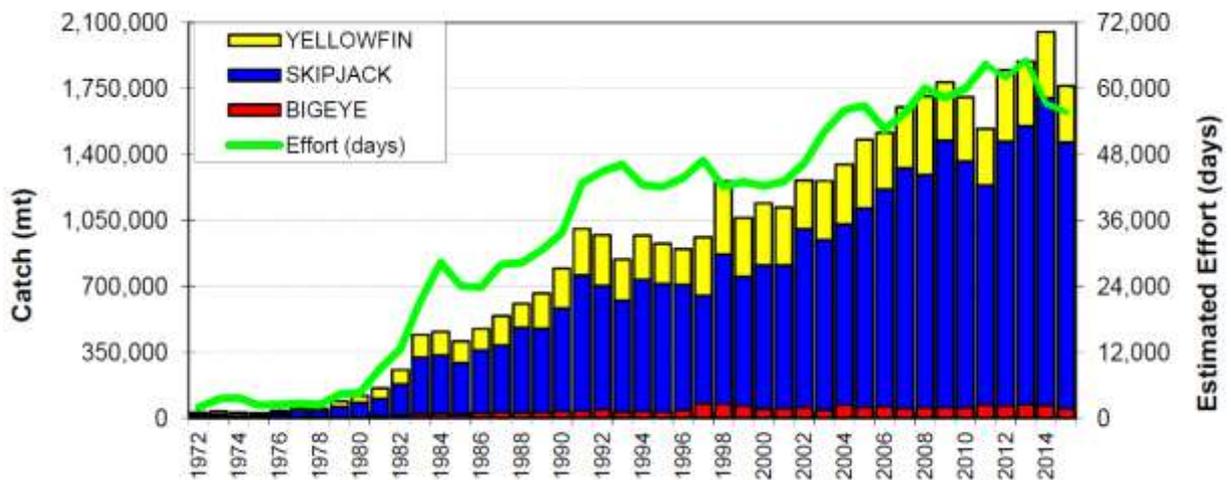


Figure 5: Purse seine catch (t) of bigeye, skipjack and yellowfin, and estimated fishing effort (days fishing and searching) in the WCPFC-CA. (Source: Williams & Terawasi 2016).

Skipjack tuna is the main target species in the purse seine fishery – yellowfin tuna are not separately targeted. The 2015 WCPFC-CA catch of skipjack (1,831,440 mt – 64% of the total tuna catch) was the third highest recorded, approximately 152,000 mt less than the record in

2014 (1,983,302 mt). The WCPFC–CA yellowfin catch for 2015 (575,901 mt – 20%) was the third highest recorded (highest recorded was 605,726 mt in 2012) (SPC 2016a).

The 2015 purse-seine tuna catch of 1,774,008 mt was the fifth highest catch on record, approximately 255,000 mt lower than the record in 2014 (2,028,631 mt) (SPC 2016a). The 2015 purse-seine skipjack catch (1,421,949 mt; 80% of purse seine tuna catch) was about 192,000 mt lower than the record in 2014. The 2015 purse-seine catch estimate for yellowfin tuna (300,717 mt) contributed only 17% of the total purse seine catch, which is amongst the lowest for the past decade, and continues the recent trend of a diminishing purse seine contribution to the overall yellowfin catch.

Table 6 shows the number of vessels on the PNA purse seine VDS register since 2010. Overall, there has been little change in the size of the fleets operating in PNA waters, which have ranged between 266 and 285 vessels annually over this period (WCPFC 2016a). Table 7 and Table 8 show the estimated purse seine fishing effort and catch in PNA waters since 2010, based on logsheets (WCPFC 2016a). The data for 2015 are provisional. Purse seine catch and effort outside PNA waters are shown in Table 9.

Table 6: No. of vessels operating in PNA EEZs for the period 2010 to 2015.
(Source: WCPFC 2016a).

Note: The Pacific Islands fleet includes foreign flag vessels operating under the FSM Arrangement. The 2016 figures are for vessels operating in PNA EEZs as at July 2016.

Fleet	2010	2011	2012	2013	2014	2015	2016
Pacific Islands	62	64	75	83	94	98	102
Foreign	211	202	204	189	191	181	137
Total	273	266	279	272	285	279	239

Table 7: Purse seine effort (logsheet days) in PNA waters.
(Source: WCPFC 2016a, as at 5 July 2016)

Area	2010	2011	2012	2013	2014	2015
PNA EEZs	44,253	47,403	42,855	43,808	43,060	32,798
PNA AWs	6273	8670	8811	7636	6775	3942
Total	50,526	56,073	51,666	51,444	49,836	36,739

Table 8: Purse seine catch (mt) in PNA waters.
(Source: WCPFC 2016a, as at 5 July 2016)

Area	2010	2011	2012	2013	2014	2015
PNA EEZs	1,333,782	1,192,516	1,379,828	1,335,906	1,482,147	1,203,767
PNA AWs	88,791	118,594	158,267	127,903	133,921	84,101
Total	1,422,573	1,311,110	1,538,095	1,463,809	1,616,068	1,287,868

Table 9: WCPO purse seine effort (logsheet days) and catch (mt) outside PNA waters.
(Source: WCPFC 2016a, as at 5 July 2016).

Note: Effort excludes fishing in waters of Indonesia and Philippines, and by Philippine vessels fishing in a high seas pocket area under special arrangements.

Metric	2010	2011	2012	2013	2014	2015
PS effort	3246	2854	4312	3997	4947	7904
PS catch	279,557	222,277	306,952	429,284	433,856	475,912

Catches of skipjack and yellowfin from PNA free school sets (i.e., catches from the UoA) are shown in Table 10 and Table 11, respectively. Recent (2010-2015) UoC skipjack catches have been approximately 33% of the total WCPFC skipjack catch, 41% of the WCPFC purse seine skipjack catch and 51% of the PNA purse seine skipjack catch (the remainder of the non-UoC PNA catch being from FAD-associated sets). Recent (2010-2014) UoC yellowfin catches have been approximately 29% of the total WCPFC yellowfin catch, 48% of the WCPFC purse seine yellowfin catch and 52% of the PNA purse seine yellowfin catch (again, the remainder of the non-UoC PNA catch being from FAD-associated sets).

Table 10: Catch of skipjack tuna from the WCPFC-CA by all gears and by purse seines, by purse seine from all PNA waters, and from the UoA, 2005-2014.
 (Source: WCPFC catches from SPC 2016a, PNA and UoC catches provided by SPC; as reported in Daume and Morison 2016b).

Year	WCPFC catch		WCPFC PS catch		PNA PS catch		UoA catch		
	t	T	% of WCPFC	t	% of WCPFC	t	% of WCPFC	% of PNA	
2005	1,404,576	1,056,706	75%	654,339	47%	318,779	23%	49%	
2006	1,505,993	1,154,329	77%	771,610	51%	263,619	18%	34%	
2007	1,657,707	1,277,734	77%	820,376	49%	353,533	21%	43%	
2008	1,629,291	1,235,583	76%	802,753	49%	355,117	22%	44%	
2009	1,793,798	1,416,942	79%	919,415	51%	370,373	21%	40%	
2010	1,696,669	1,308,561	77%	1,086,959	64%	674,783	40%	62%	
2011	1,539,485	1,177,661	77%	1,005,275	65%	400,427	26%	40%	
2012	1,760,121	1,399,390	80%	1,160,642	65%	565,987	32%	49%	
2013	1,844,569	1,479,430	80%	1,146,537	62%	616,410	33%	54%	
2014	1,983,302	1,614,169	81%	1,237,565	62%	617,870	31%	50%	

Table 11: Catch of yellowfin tuna from the WCPFC-CA by all gears and by UoC seines, by purse seine from all PNA waters, and from the UoA, 2005-2014.
 (Source: WCPFC catches from SPC 2016a, PNA and UoC catches provided by SPC; as reported in Daume & Morison 2016b).

Year	WCPFC catch		WCPFC PS catch		PNA PS catch		UoA catch		
	t	T	% of WCPFC	t	% of WCPFC	t	% of WCPFC	% of PNA	
2005	547,453	363,654	66%	264,522	48%	111,454	20%	42%	
2006	479,767	298,905	62%	235,672	49%	86,320	18%	37%	
2007	511,580	323,423	63%	232,558	45%	101,261	20%	44%	
2008	603,215	417,545	69%	311,865	52%	165,670	27%	53%	
2009	537,210	309,947	58%	245,579	46%	83,279	15%	34%	
2010	555,816	339,862	61%	335,479	60%	206,250	37%	61%	
2011	522,061	300,931	58%	300,385	58%	131,817	25%	44%	
2012	605,726	376,721	62%	354,640	60%	202,843	34%	57%	
2013	553,843	344,250	62%	286,779	52%	141,605	26%	49%	
2014	587,768	347,206	59%	287,945	47%	131,250	21%	46%	

The PNAFTF (and the wider WCPFC skipjack tuna and yellowfin tuna fishery) is managed through effort control, and the main tool to limit effort by PNA in the purse seine fishery is the VDS which introduced in 2007 and is administered by the PNA Office (PNAO). The VDS established a limit on the total number of fishing days (total allowable Effort – TAE) that could

be fished in PNA members' EEZs, with a system of tradable fishing days allocated to each of the PNA Parties as Party Allowable Effort (PAE). The TAE for PNA waters set under the VDS has been set at 2010 levels by WCPFC to prevent any increases in fishing effort. The distribution of purse-seine effort (days fishing by set type) for 2011–2015 is shown in Figure 6, and the distribution of skipjack tuna and yellowfin tuna catch by set type is shown in Figure 7.

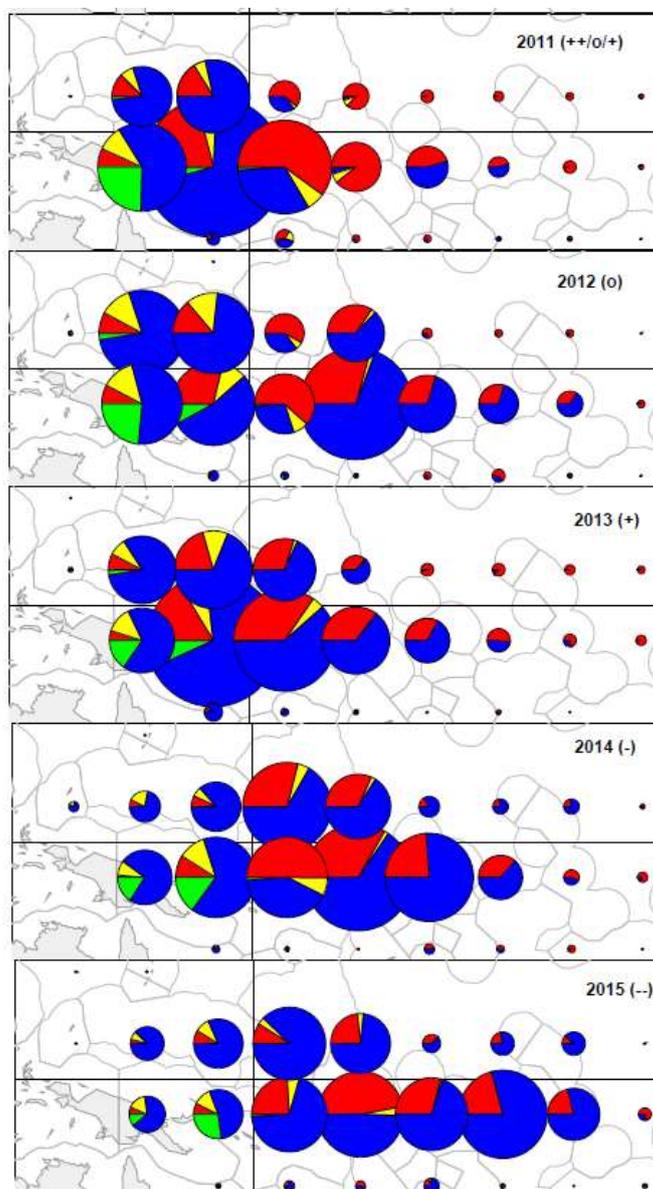


Figure 6: Distribution of purse-seine effort (days fishing by set type), 2011–2015.
(Source: Williams & Terawasi 2016).
Blue–Unassociated; Yellow–Log; Red–Drifting FAD; Green–Anchored FAD.

The scope of the VDS has been expanded and it now includes an allowance for Tokelau (initially set at 1000 days and subsequently adjusted proportionately to the PNA TAE to 985 in 2015 then 991 in 2016) working with PNA. The US purse seine fleet *also* came under the VDS during 2013. This means that all purse seine efforts are now under a VDS regime in PNA waters with the exception of catches made in archipelagic waters in Solomon Islands and Papua New Guinea.

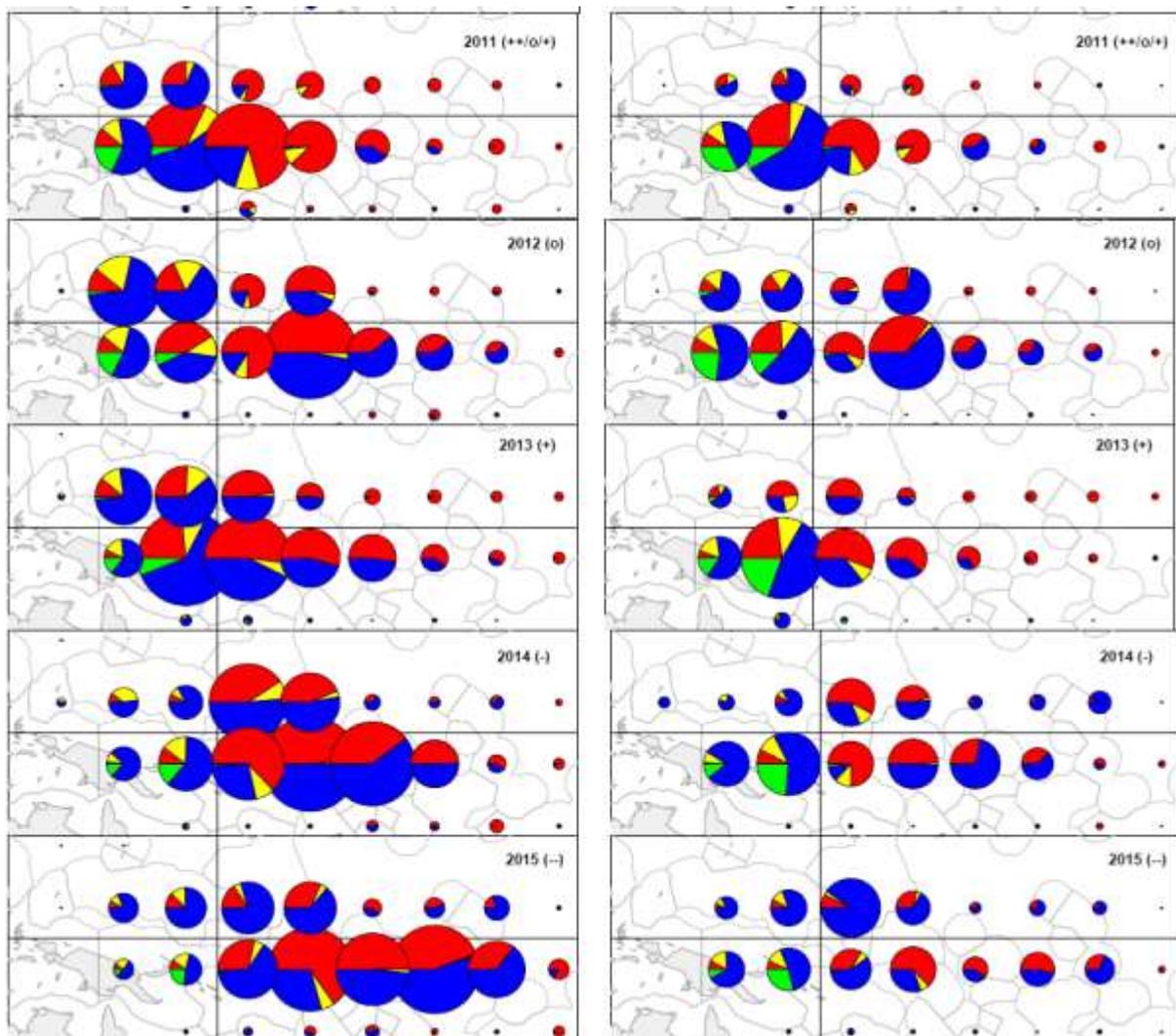


Figure 7: Distribution of purse seine skipjack (left) and yellowfin (right) tuna catch by set type, 2011–2015.
 (Source: Williams & Terawasi 2016)
 Blue–Unassociated; Yellow–Log; Red–Drifting FAD; Green–Anchored FAD.

There are also High seas effort limits set by WCPFC. The restriction of effort levels to 2010 levels was endorsed by WCPFC in 2013 and was incorporated into the WCPFC Conservation and Management Measure (CMM) 2013-01. This states (paragraph 20): “Coastal States within the Convention Area that are Parties to the Nauru Agreement (PNA) shall restrict the level of purse seine effort in their EEZs to 2010 levels through the PNA Vessel Days Scheme”. This CMM was amended and replaced by CMM 2014-01 and subsequently by CMM 2015-01, but the aim is still to restrict effort to 2010 levels.

Under the VDS, the TAE for 2014 and 2015 was set at a total of 44,625 VDS days; the 2016 TAE was set at 44,890 days (PNA 2015a). Although Tokelau is not a PNA member and not covered by the PNA TAE, it is now part of the VDS. It has its own TAE, which it brings to the VDS and which is transferable with PNA members. This was initially established at 1000 days and is adjusted proportionately with changes in the PNA TAE. The Tokelau TAE for 2014 and 2015 was 985 days, and 991 days respectively (resulting in total TAEs of 45,610 for 2014 and 2015, and 45,881 days for 2016). More information on the origin and allocation of the TAE is provided in Sections 3.5.1.5, 3.5.1.6 and 0.

3.5 Principle One: Target species background

3.5.1 Skipjack tuna (*Katsuwonus pelamis*)

3.5.1.1 Biology and distribution (skipjack tuna)

Skipjack tuna are found in tropical and subtropical waters of the Atlantic, Indian and Pacific Oceans. They are the smallest of the major commercial tuna species, generally not exceeding 20 kg. In the Western Pacific, warm, pole ward-flowing currents near northern Japan and southern Australia seasonally extend skipjack tuna distribution to 40°N and 40°S (Rice *et al.* 2014). Their greatest abundance is seen in equatorial waters, roughly corresponding to a 20°C surface isotherm.

Skipjack in the WCPO are considered to comprise a single stock for assessment and management purposes. A substantial amount of information on skipjack movement is available from tagging programs, which have documented some large-scale movement within the Pacific (Figure 8). Skipjack movement is highly variable (Sibert *et al.* 1999) but is thought to be influenced by large-scale oceanographic variability (Lehodey *et al.* 1997). Analyses of the tagging data have, however, indicated that the median lifetime displacement of skipjack ranges from 420 to 470 nautical miles (Sibert & Hampton 2003). The tagging data indicate that the spatial extent of the WCPO stock is believed to approximate the WCPFC-CA (see Figure 4) (Wild & Hampton 1994).

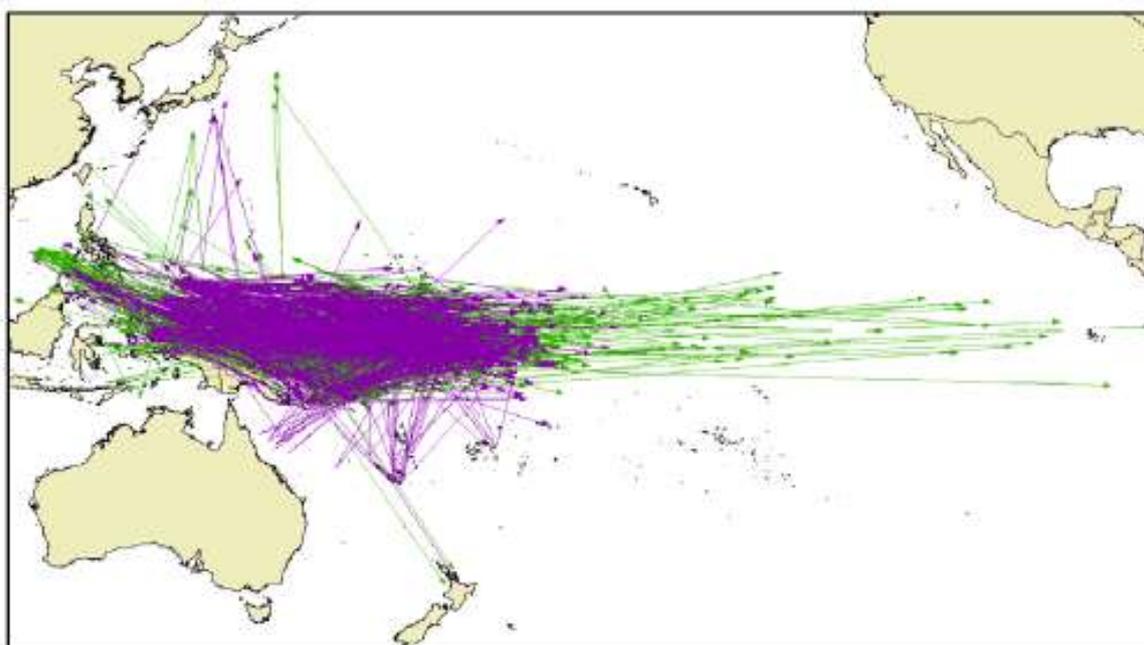


Figure 8. Released and recaptured skipjack from the Regional Tuna Tagging Program (purple arrows) and Pacific Tuna Tagging Program (green arrow) tagging programs. Only recaptures >1,000 nautical miles shown (Source: Rice *et al.* 2014).

Skipjack are highly fecund and spawn opportunistically throughout their range and throughout the year when conditions are favourable, with the spawning season becoming shorter with increasing distance from the equator. They reach maturity at about 40 cm fork length (FL) and within their first year. Fecundity increases with size but is highly variable. The estimated number of eggs produced per season in females of 41 to 87 cm FL ranges between 80,000 and 2 million. Skipjack tuna have a generation time of 2 years (Berger *et al.* 2013).

Skipjack growth is rapid compared to yellowfin and bigeye tuna. In the Pacific, approximate age estimates from counting daily rings on otoliths suggest that growth may vary between areas. At 150, 200, 300 and 400 days, FLs of 30, 33, 40, and 46 cm were estimated for fish sampled mostly in the north Pacific (Tanabe *et al.*, 2003), but growth estimates were faster (42, 47, 55, and 60 cm) for fish sampled close to the equator (Leroy 2000). Growth has been found to vary spatially in the eastern Pacific (Maunder 2001) and in the Atlantic (Gaertner *et al.* 2008), based on analyses of tagging data.

Estimates of natural mortality rate have been obtained using a size-structured tag attrition model (Hampton 2000), which indicated that natural mortality was substantially larger for small skipjack (21-30 cm FL, $M=0.8$ per month) compared to larger skipjack (51-70 cm FL, $M=0.12-0.15$ per month). The longest period at liberty for a tagged skipjack was 4.5 years.

Skipjack tuna form both free schools and schools associated with FADs or other floating objects. Monthly observer sampling of the catch indicates that, when fished as surface schooling adults, they are typically caught at 30-70 cm and 2-5 kg in size. Depth distribution ranges from the surface to about 260 m during the day, but is limited to near surface waters at night (FAO 2016).

Skipjack tuna feed on fishes, crustaceans, cephalopods and molluscs; cannibalism is common. They are preyed upon by large pelagic fishes and sharks. Skipjack tuna are not a Low Trophic Level species. Their trophic level (as reported in www.Fishbase.org) has been estimated at 4.4 (± 0.5 se).

3.5.1.2 Stock assessment (skipjack tuna)

Skipjack tuna stock assessments have been conducted regularly since 2000. Assessment are conducted using the well-established MULTIFAN-CL software (see: <http://www.multifan-cl.org/>) which was developed as an analytical tool for fisheries in which large-scale age sampling of catches is unfeasible or not cost effective, but where length-frequency (size composition) sampling data are available. It provides a statistically based, robust method of length-frequency analysis.

Assessments are undertaken by the Oceanic Fisheries Program (OFP) of the Secretariat for the Pacific Community (SPC) as the scientific advisory body for the WCPFC. The latest assessment (Rice *et al.* 2014) was presented at the 10th regular session of the WCPFC SC meeting, held in 2014 (WCPFC 2014a). This assessment makes a number of structural and technical changes to the 2011 assessment (Hoyle *et al.* 2011), and takes account of issues raised in an independent review of the 2011 bigeye tuna assessment which were also applicable to the skipjack assessment (Ianelli *et al.* 2012).

The skipjack assessment reports present descriptions of structural assumptions, model parameterization and priors and the model used has been developed progressively over many years. The latest assessment predominantly gives details of changes to assumptions which may be more fully described in earlier versions. MULTIFAN-CL requires the definition of 'fisheries' that consist of relatively homogeneous fishing units and the model is age and spatially-structured. The 2014 assessment defines 16 quarterly age-classes and 5 regions (see Figure 9), a change from the 3 regions used in the 2011 assessment (Rice *et al.* 2014).

The model uses a maximum likelihood approach to fit a range of parameters and evaluate stock status probabilistically with respect to reference points. Catch, effort, size composition, and tagging data are assembled for 23 fisheries, a change from the 17 used in the 2011 assessment. Fisheries are modelled with respect to their selectivity by size, areas fished, and standardised catch-per-unit-effort (CPUE). Effort data units for purse seine fisheries were

defined as days fishing/or searching, and are allocated to set type (associated or unassociated) in logbook data (McKechnie *et al.* 2016). The pole-and-line fishery for skipjack has been the basis for a CPUE time series used in the assessment. However, the decline in skipjack pole and line activity in recent years means that the continuity of this key time series is becoming uncertain. CPUE time series for the Philippines domestic purse seine fishery and the PNG archipelagic purse seine fishery have been developed for inclusion in the skipjack and yellowfin assessments. Further detail on abundance indices is provided in McKechnie *et al.* (2016).

The model is complex, fitting data of varying quality from a diverse range of fishing activities. It also accommodates quarterly movements of fish between the regions. Uncertainty is investigated extensively, especially in the key parameters (biomass and recruitment). Sensitivity tests were informative (varying S-R steepness, alternate growth assumptions, alternate mixing assumptions and changes in weighting factors). A crosswise grid of (36) model runs was undertaken to explore the main sources of structural and data uncertainty due to all sensitivity factors in combination. Confidence intervals on key outputs were calculated using standard statistical approaches.

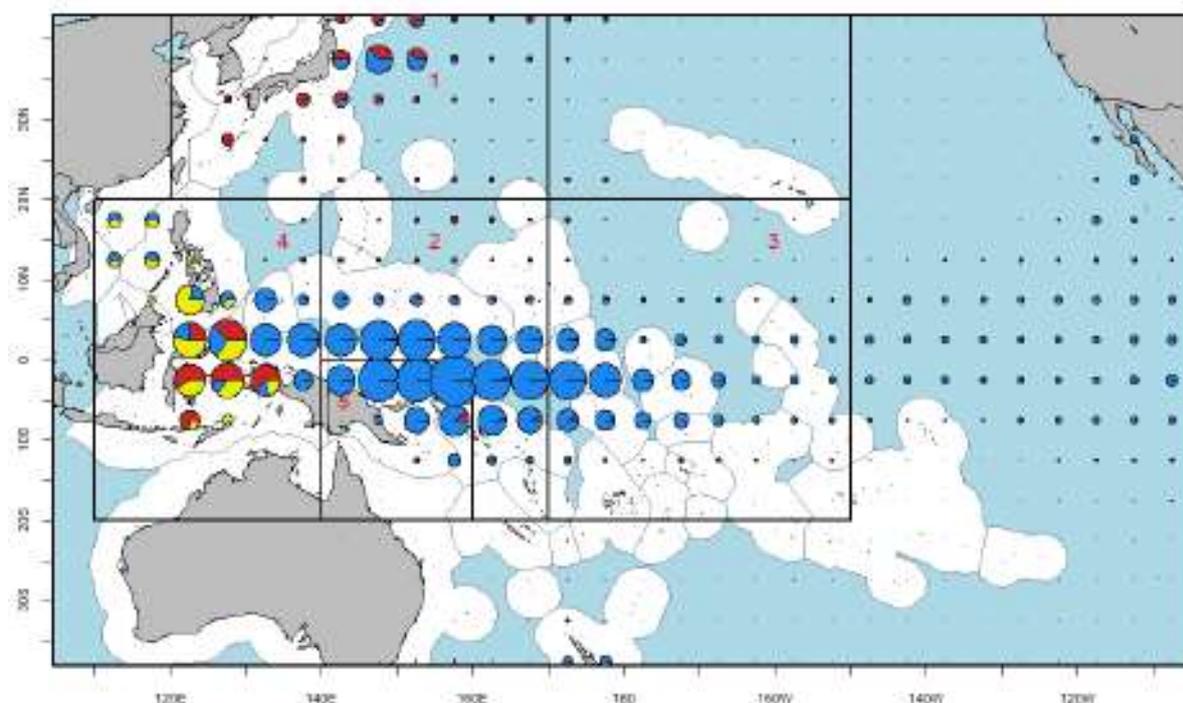


Figure 9: Catch distribution (2003-2012) of skipjack tuna by 5 degree squares of latitude and longitude and fishing method: longline (green), purse-seine (blue), pole-and-line (red), and other (yellow).

(Source: Rice *et al.* 2014).

NB: Overlaid are the subregions for the assessment model. Note also there is in fact no break at 170°E in Region 1.

The extensive data sets used in the assessment are described in Rice *et al.* (2014). The primary data types are tagging, length frequency, and catch and effort. Several analyses describe the methods used in producing the purse seine size data (Abascal *et al.* 2014), and tagging data (Berger *et al.* 2014); and revisions to the fisheries and spatial definitions (McKechnie *et al.* 2014).

Catch and effort data

Catch and effort data are compiled by year and quarter for each of the 23 defined fisheries. Discarded catches of skipjack are estimated to be minor and are ignored (Rice *et al.* 2014). The majority of skipjack catch is taken by purse-seine vessels in the equatorial regions fishing under the Parties to the Nauru Agreement (PNA) Vessel Days Scheme (VDS). PNA Members are the Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu. Reporting is by standardised WCPFC logbook and there is an increasing use of electronic data reporting in some areas. Observers are required to be carried on all purse-seine vessels fishing under the PNA VDS.

There have been concerns about bias in purse-seine catch weight estimates due to the catch sampling approach (grab sampling as opposed to more recent spill sampling methods). The issue was subject to an independent review by Cordue (2013). The issue of bias has been recognised and whereas previous assessments have tried to accommodate both approaches, the 2014 assessment uses only a single set of purse-seine catch estimates, using estimates based on the spill method. For some fleets (e.g., Spanish and Japanese, reported catch is used rather than an estimate).

Purse-seine catch data are aggregated by 1° latitude, 1° longitude, month flag, and set type (i.e. whether a set is associated with a FAD, or not). Some VDS effort data is known to have been potentially misrepresented due to different approaches to reporting fishing versus non-fishing, with some fleets reporting searching days as non-fishing transit days. The issue has been recognised by Rice *et al.* (2014) who note the practice essentially represents effort creep which has not yet been specifically corrected to ensure consistency of reporting. The impact of this is not known, however Rice *et al.* consider the effect will be minimised by estimation of frequent time-based changes in catchability. The issue is well-recognised by management. The 3rd Annual Surveillance of the PNA Western and Central Pacific Skipjack Tuna Unassociated and Log Set Purse Seine Fishery certification, to which this certification assessment, considers the issue in some detail and concludes that “Given these measures, and the evidence that effort remains within the TAE, the audit team concluded that this weakness in the VDS is not currently considered sufficient to compromise the effectiveness of the VDS as a tool for limiting fishing effort to the desired levels.” WCPFC (2016b) reports that “the trend of increased reporting of transit days has remained relatively constant, and the CPUE patterns in those years are likely consistent as a result, though there will be longer term influences of this change in reporting”. SPC indicated at SC12 (WCPFC 2016b) that this reporting of transit days “does not have a large effect as the penalties on these fisheries in the model are low, i.e. the relationship between fishing mortality and effort for purse-seine fisheries is not overly influential in the model”. McKechnie *et al.* (2016) indicates that the practice essentially represents effort creep. The impact of it is minimized by estimating time-variant changes in catchability for the fisheries involved and ascribing low weight to the effort deviations.

Size composition data

Size composition data (length-frequency) for each of the defined fisheries were compiled into 54 x 2 cm size classes (2–4 cm to 108–110 cm) with data from purse-seine, longline and pole-and-line, as well as a limited amount of data from domestic fisheries in the Philippines and Indonesia. Previous assessments used purse-seine length frequencies from grab samples taken by observers, with a correction for known grab sample bias. Incomplete coverage led to gaps in the data series and a time series of size data that did not show evidence of modal progression (and hence poor estimation of age). Changes made in the latest assessment include the use of port sampling from Pago Pago in American Samoa (available to 2008) and weighting of the samples by catch. Longline fisheries catch few and large skipjack which are usually discarded, however, the length-frequency data collected from Japanese training and

research longline vessels are used in the model because they allow improved selectivity of the surface fisheries to be measured against these larger skipjack.

Size composition data are also available for pole-and-line fisheries, primarily from observers, with the exception of more northern fishing grounds (regions 1 and 2) where length data are available from the Japanese off shore and distant-water fleet from the beginning of the model period, 1972, until 2009. For equatorial fishing grounds (excluding region 2) data are available from both the Japanese distant-water fleet and from domestic fleets. Data from the pole and line fisheries in region 3 were dominated by observer collected samples from the Japanese fleets (1974–2004), with additional data from Fiji in the 1990's. Length data from the pole and line fishery in Region 4 consist of mostly Japanese data (1972–2009), with significant data from Indonesia in the years 2009–2012. The data from the pole-and-line fishery in region 5 are from multiple countries, dominated by the USA in the years 1988–1997 and Papua New Guinea (PNG) in the years 1998–2012.

Tagging data

Tagging data are a key input — data used in the assessment include the SPC Oceanic Fisheries Programme Skipjack Survey and Assessment Project carried out during 1977–80, the Regional Tuna Tagging Project (RTTP) undertaken during 1989–92 and in-country projects in the Solomon Islands (1989–90), Kiribati (1991), Fiji (1992) and the Philippines (1992). In addition, tagging data from regular Japanese research cruises were available for the period 1988–2012 and tagging data from the Pacific Tuna Tagging Programme (PTTP) were available from 2006 until the 2nd quarter of 2012. All tags were released using standard tuna tagging equipment and techniques by trained scientists and technicians. Tags have been returned mostly from purse seine vessels via processing and unloading facilities throughout the Asia-Pacific region. For incorporation into the assessment, tag releases were stratified by release region, time period of release (quarter) and the same size classes used to stratify the length-frequency data. A total of 314,555 effective releases were classified into 251 tag release groups. Returns from each size-class of each tag release group (50,087 effective tag returns in total) were then classified by recapture fishery and recapture time period (quarter). Because tag returns by purse seiners were often not accompanied by information concerning the set type, tag return data were aggregated across set types for the purse seine fisheries in each region. The population dynamics model was in turn configured to predict equivalent estimated tag recaptures by these grouped fisheries.

3.5.1.3 Stock status (skipjack tuna)

The main conclusions of the 2014 stock assessment (Rice *et al.* 2014; WCPFC 2014a) were as follows, and management advice is summarised in Table 12.

1. A fluctuating but consistently high level of recruitment since the early 1970s has supported a robust fishery in all regions. The analysis suggests that the regional declines in spawning potential are being driven primarily by the fishing impacts (in all regions except region 1 of Rice *et al.* 2014, i.e. north of 20°N).
2. Although the ratio of exploited to unexploited spawning potential is estimated to have declined, with some fluctuations, throughout the model period, the average total biomass of the last five years is estimated to be above the average total biomass of the first five years of the model.
3. Latest catches slightly exceed MSY (reference case $C_{\text{latest}}/MSY = 1.02$).
4. Fishing mortality for adult and juvenile skipjack tuna is estimated to have increased continuously since the beginning of industrial tuna fishing, but fishing mortality still remains below the level that would result in the MSY ($F_{\text{current}}/F_{MSY} = 0.61$).

5. Recent levels of spawning potential are well above the level that will support the MSY MSY ($SB_{current}/SB_{MSY} = 1.86$, $SB_{latest}/SB_{MSY} = 1.74$).
6. The estimated 2011 level of spawning potential represents approximately 52% of the unfished level, and is well above the limit reference point of $20\%SB_{F=0}$ agreed by WCPFC.
7. Recent levels of spawning potential are in the middle of the range of candidate biomass related target reference points currently under consideration for skipjack tuna, i.e., $40\text{--}60\% SB_{F=0}$.
8. Stock status conclusions were most sensitive to alternative assumptions regarding steepness and growth. However, the main conclusions of the assessment are robust to the range of uncertainty that was explored.

Table 12: Estimates of management quantities for selected stock assessment models. (Source: WCPFC 2014a).

N.B: For the purpose of this assessment, “current” is the average over the period 2008–2011 and “latest” is 2011. Mix_2qtr relates to the tag mixing period and h = steepness.

Parameter	Base case	h=0.65	h=0.95	Mix_2qtr
MSY	1,618,800	1,426,800	1,806,800	1,784,000
C_{latest}/MSY	1.02	1.16	0.92	0.93
$F_{current}/F_{MSY}$	0.61	0.82	0.45	0.52
B_0	6,587,000	6,913,000	6,404,000	7,419,000
$B_{current}$	3,615,213	3,613,290	3,612,585	4,374,786
SB_0	6,229,000	6,538,000	6,056,000	6,989,000
SB_{MSY}	1,753,000	2,111,000	1,453,000	1,999,000
$SB_{F=0}$	6,303,358	6,690,474	6,082,301	7,085,699
$SB_{current}$	3,260,579	3,258,721	3,258,170	3,971,998
SB_{latest}	3,052,995	3,050,692	3,049,508	3,548,468
$SB_{current}/SB_{F=0}$	0.52	0.49	0.54	0.56
$SB_{latest}/SB_{F=0}$	0.48	0.46	0.50	0.50
$SB_{current}/SB_{MSY}$	1.86	1.54	2.24	1.99
SB_{latest}/SB_{MSY}	1.74	1.45	2.10	1.78

The results of the 2014 assessment are summarised in Figure 10, Figure 11 and Figure 12. Figure 10 shows a Kobe plot of the outcomes across the grid of model runs. The ratio of exploited to unexploited spawning potential for the WCPO for the reference case is shown in Figure 11. Figure 12 shows estimated annual average spawning potential for the WCPO for the reference case with approximate 95% confidence intervals.

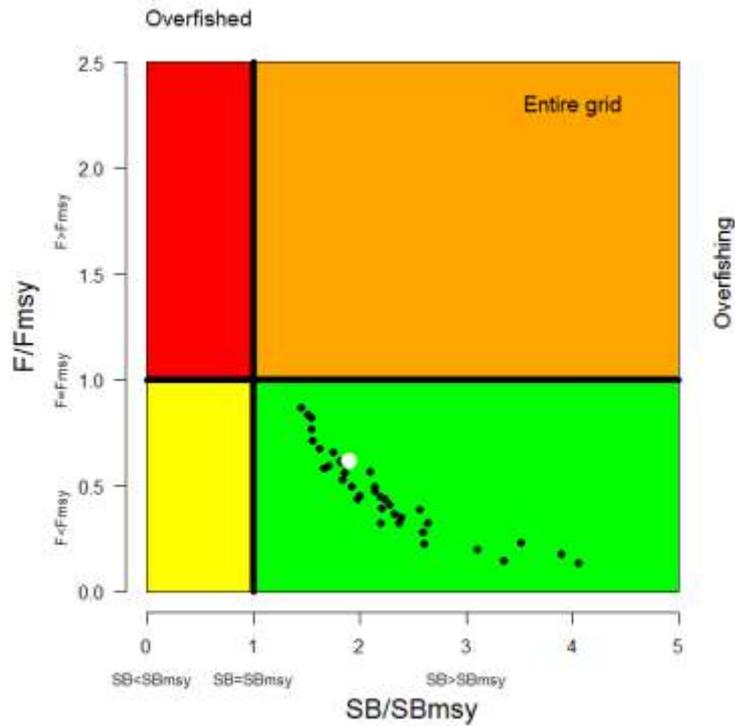


Figure 10: Summary of latest stock status (2011) for the entire grid of model runs. The white circle represents the reference case (Source: Rice *et al.* 2014).

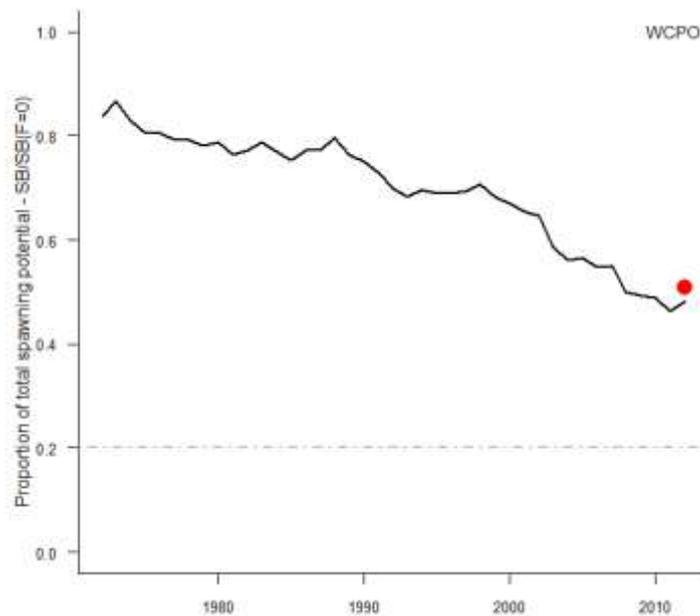


Figure 11: Ratio of exploited to unexploited spawning potential for the WCPO for the WCPO for the reference case. (Source: Rice *et al.* 2014).
 N.B: The current WCPFC limit reference point of 20% $SB_{F=0}$ is provided for reference as the grey dashed line and the red circle represents the level of spawning potential depletion based on the agreed method of calculating $SB_{F=0}$ over the last ten years of the model (excluding the last year).

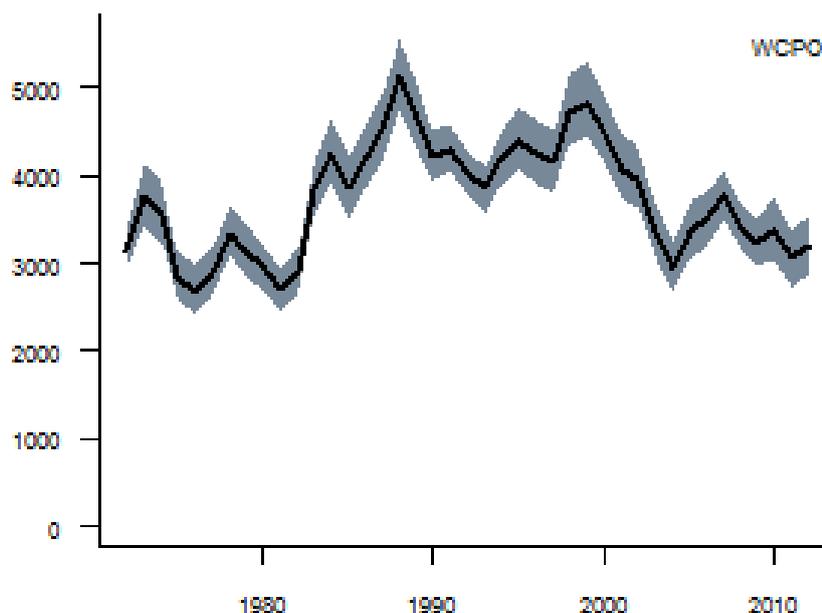


Figure 12: Estimated annual average spawning potential for the WCPO for the reference case. The shaded areas indicate the approximate 95% confidence intervals. (Source: Rice *et al.* 2014).

The total skipjack catch in 2014 was provisionally estimated to be 1,957,693 t, which is the highest catch recorded, a 6% increase over 2013 and a 14% increase over the average for 2010–2013 (WCPFC 2015a). The 2014 provisional was 20% above the estimated MSY (1,618,800 mt, noting that those two numbers are not directly comparable because MSY is calculated based on the historical average recruitment (WCPFC 2015a).

3.5.1.4 2016 stock assessment (skipjack tuna)

An updated assessment of skipjack tuna was presented at the 2016 WCPFC-SC (McKechnie *et al.* 2016). The outcomes of this assessment were considered at the December 2016 Commission meeting. A further 3 years of data were available since the 2014 assessment, extending the model time period until the end of 2015. The 2016 assessment incorporates developments addressing the recommendations of the 2014 stock assessment report (Rice *et al.*, 2014), exploration of uncertainties in the assessment model, particularly in response to the inclusion of additional years of data, and improvement in diagnostic weaknesses of previous assessments (McKechnie *et al.* 2016).

The main conclusions of the 2016 assessment are largely consistent with previous assessments based on the results of the reference case model and consideration of the results of sensitivity runs (including the structural uncertainty grid). The general conclusions from McKechnie *et al.* (2016) are that:

1. 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.
2. Current catches are lower than, but approaching, estimated MSY.
3. 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.

4. Recent levels of spawning biomass are well above the level that will support the MSY, and are well above the limit reference point, $20\%SB_{F=0}$.
5. 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 $50\%SB_{F=0}$.
6. 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.
7. Modelling results were most sensitive to assumptions about weighting of data components, tag mixing period and steepness, and several important avenues of research related to these assumptions have been identified and will improve future assessments.

Management advice is summarised in Table 13, below.

Table 13: Estimates of management quantities for selected stock assessment models.
(Source: WCPFC 2016b).

N.B: For the purpose of this assessment, “recent” is the average over the period 2011–2014 and “latest” is 2015. Mix_2qtr relates to the tag mixing period and h = steepness.

Parameter	Base case	h=0.65	h=0.95	Mix_2qtr
C_{latest}	1,679,528	1,679,517	1,679,522	1,679,609
MSY	1,891,600	2,026,400	1,832,800	2,076,800
F_{recent}/F_{MSY}	0.45	0.51	0.40	0.41
SB_0	6,764,000	7,637,000	6,284,000	7,463,000
SB_{MSY}	1,626,000	1,972,000	1,423,000	1,858,000
$SB_{F=0}$	7,221,135	7,802,299	6,877,143	7,751,452
SB_{latest}/SB_0	0.62	0.55	0.66	0.68
$SB_{latest}/SB_{F=0}$	0.58	0.53	0.61	0.61
SB_{latest}/SB_{MSY}	2.56	2.11	2.93	2.73
$SB_{recent}/SB_{F=0}$	0.52	0.48	0.54	0.56
SB_{recent}/SB_{MSY}	2.31	1.90	2.63	2.32

The 2016 assessment was considered at WCPFC-SC 12 (WCPFC 2016b). There was some disagreement amongst member countries on how the outcomes of the 2016 assessment should be presented in describing WCPO skipjack status and trends. The *majority of member countries* selected the reference case model as the base case and characterize uncertainty using the structural uncertainty grid, as discussed above for the 2014 assessment. Annual estimates of MSY compared with catches of three major fisheries for the reference case model are show in Figure 13. The temporal trend for the reference case model and the structural uncertainty grid in stock status are shown in Figure 14.

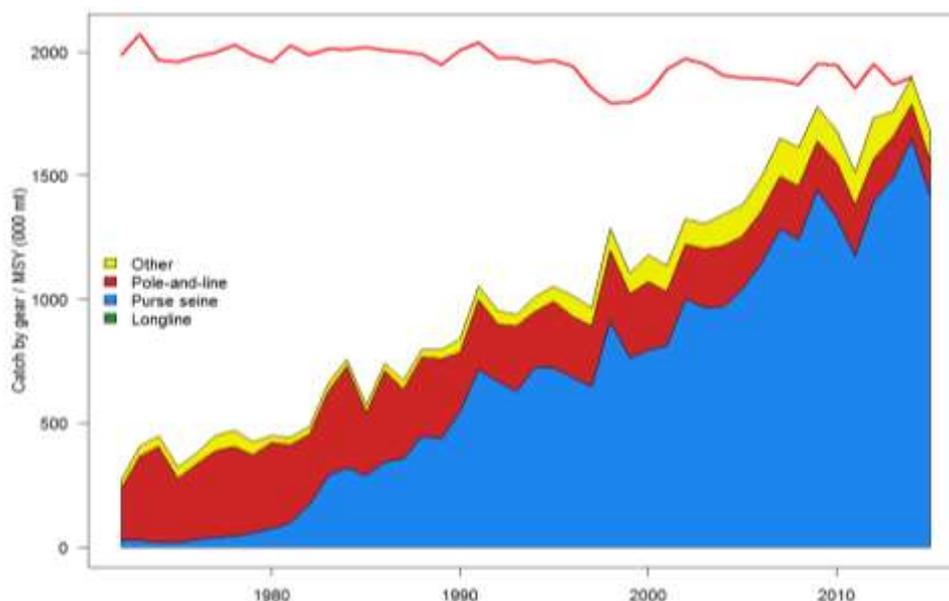


Figure 13: History of annual estimates of MSY compared with catches of three major fisheries for the reference case model.
 (Source: Mckechnie *et al.* 2016)

The latest (2015) estimate of spawning biomass is well above both the level that will support MSY ($SB_{latest}/SB_{MSY} = 2.56$, for the reference case model) and the adopted LRP of $0.2 SB_{F=0}$ ($SB_{latest}/SB_{F=0} = 0.58$, for the reference case model), and $SB_{latest}/SB_{F=0}$ was relatively close to the adopted interim target reference point ($0.5 SB_{F=0}$) for all models explored in the assessment (structural uncertainty grid: median = 0.51, 95% quantiles = 0.39 and 0.67) (WCPFC 2016b).

The *alternative view* (China, Japan and Chinese Taipei) at the 2016 SC considered it is not possible to select a base-case model from various sensitivity models in the 2016 assessment, given the advice from the Scientific Service Provider that a suite of the sensitivity models were plausible. Therefore, these members considered that it would be more appropriate to provide advice to the Commission on skipjack stock status based on the range of uncertainty expressed by the alternative model runs in the sensitivity analysis rather than based on the single base case model. The estimated MSY of WCPO skipjack stock ranges from 1,641,200 to 2,076,800 mt across the alternative skipjack stock assessment models represented in the sensitivity grid. These CCMs also noted that some alternative models indicate that the 2015 biomass is below the adopted TRP of $0.5SB_{F=0}$.

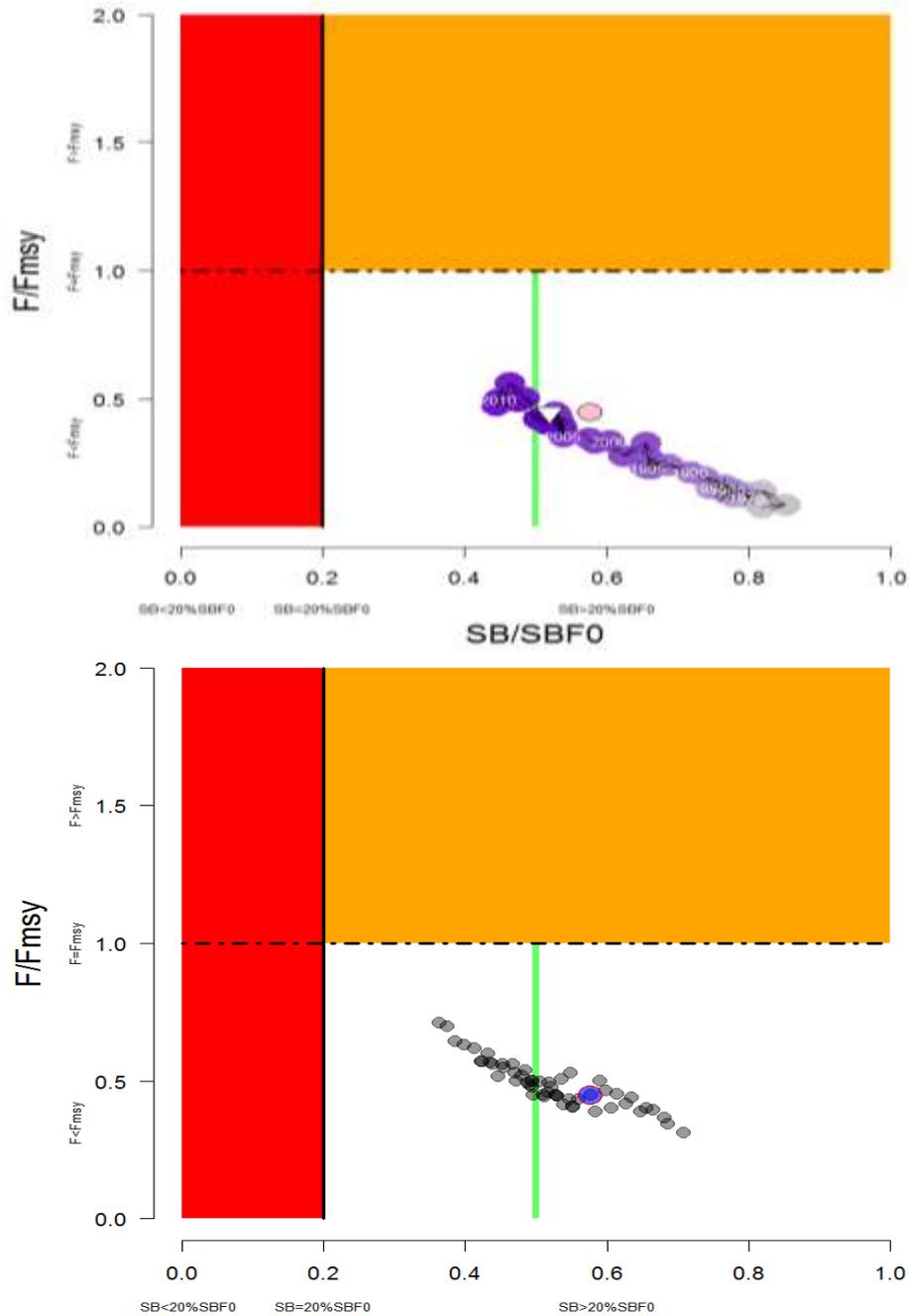


Figure 14: Temporal trend for the reference case model (top) and the structural uncertainty grid (bottom panel) in stock status relative to $SB_{F=0}$ (x-axis) and F_{MSY} (y-axis). (Source: WCPFC 2016b).
 N.B: The red zone represents spawning potential levels lower than the agreed LRP, which is marked with the solid black line ($0.2SB_{F=0}$). The orange region is for fishing mortality greater than F_{MSY} ($F = F_{MSY}$; marked with the black dashed line). The green line indicates the interim target reference point $50\%SB_{F=0}$.

2016 Scientific Committee management advice and implications

The overall management advice from the 2016 SC is that the skipjack assessment continues to show that the stock is currently moderately exploited and fishing mortality level is sustainable. The recent catches are fluctuating around and some models also indicate that the stock is currently under the TRP. The SC noted that skipjack spawning biomass is now

around the adopted TRP and recommended that the Commission take action to keep the spawning biomass near the TRP and also advocated for the adoption of harvest control rules based on the information provided. WCPFC SC12 also noted that fishing is having a significant impact on stock size and can be expected to affect catch rates. The stock distribution is also influenced by changes in oceanographic conditions associated with El Niño and La Niña events, which impact on catch rates and stock size. Additional purse-seine effort will yield only modest gains in long-term skipjack tuna catches and may result in a corresponding increase in fishing mortality for bigeye and yellowfin tunas. The management of total effort in the WCPO should recognize this (WCPFC 2016a).

3.5.1.5 Harvest strategy and control rules (skipjack tuna)

The MSC defines a harvest strategy as “The combination of monitoring, stock assessment, harvest control rules and management actions, which may include an MP or an MP (implicit) and be tested by MSE.” (MSC 2015).

As described in the original MSC assessment for the fishery, the WCPO harvest strategy for skipjack tuna has several components, with WCPFC, PNA and national and archipelagic management actions, supported by a robust stock assessment and extensive monitoring frameworks (Banks *et al.* 2011). 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 current WCPFC CMM relating to the harvest strategy for skipjack tuna, CMM 2015-01, has evolved from CMM 2005-01 which was aimed at managing bigeye tuna and yellowfin tuna rather than skipjack tuna, predominantly limiting purse seine effort to the 2004 level or average 2001 to 2004 levels. Under CMM 2005-01 there was an exemption for domestic vessels and provision for existing effort levels under agreed regional or bilateral arrangements.

CMM 2008-01 (replacing CMM 2005-01) was also aimed at managing bigeye tuna and yellowfin tuna. It introduced measures such as a requirement for 100% observer coverage for purse seine vessels, and FAD restrictions. Purse seine effort levels in CMM 2008-01 were similar to those described for 2005-01, but recognized the limits in place under the VDS.

WCPFC (2010) noted that “*the WCPO skipjack tuna stock is decreasing slowly, and is now about 50% depleted from an unexploited level. This is a moderate level of depletion: the stock is not overfished, and there is no overfishing. However, at some time in the near future a decision will have to be made as to the acceptable level of depletion and future harvest strategies for this stock.*” WCPFC (2010) discussed the need for extension of several aspects of 2008-01, including the conservation and management of skipjack tuna as well as bigeye tuna and yellowfin tuna. As reflected in CMM 2011-01, PNA advised WCPFC in 2011 that they would apply a hard limit to purse seine effort in their EEZs, limiting effort to the 2010 level, removing the exemptions for domestic vessels and US vessels and a range of other elements that allowed flexibility in the setting and use of PAEs.

A major update of CMM 2008-01 came in 2012 with the adoption of CMM 2012-01 as a measure for the conservation and management of skipjack tuna as well as bigeye tuna and yellowfin tuna, introducing an objective for skipjack tuna that $F/F_{msy} \leq 1$. CMM 2012-01 included binding purse seine effort limits without exemptions for all EEZs. This includes, limiting effort in PNA EEZs to the 2010 level (paras 12-14 of the CMM) and limiting effort or catch in all other EEZs, including Pacific Island countries, Indonesia and Philippines and other coastal states including Australia, Japan, New Zealand and the US. The CMM also extended the effort and capacity limits of other commercial fisheries to apply also to skipjack tuna (para 30 of the CMM). As a result, the 2010 effort level was applied as a hard limit for all purse seine

effort in PNA EEZs. As discussed at WCPFC12 (WCPFC 2015b), the change from 2004 to 2010 as the base year for the effort limit was to allow for the removal of exemptions for Small Island Domestic State domestic fleets and exemptions for existing regional arrangements that were allowed under previous CMMs. Limits have also been adopted under CMM 2014-01 and 2015-01 for purse seine effort levels in high seas waters.

Prior to recent progress in adopting reference points, the UNFSA Annex II provisions, incorporated in the Convention, were taken as constituting implicit target and limit reference points. As noted above, the WCPFC practice is that the SC issues an agreed statement on the current status of the stock, management advice and implications, which is forwarded to the WCPFC annual session for consideration of any Conservation and Management Measures (CMMs) recommended. Management advice (and the implications of that advice) has been regularly provided with respect to indicators of fishing mortality and biomass relative to MSY levels – i.e. $F_{\text{current}}/F_{\text{MSY}}$, $B_{\text{current}}/B_{\text{MSY}}$ and $SB_{\text{current}}/SB_{\text{MSY}}$.

At the 9th regular session of the Commission in 2012 (WCPFC 2012a), WCPFC established a limit reference point for skipjack tuna ($20\%SB_{\text{recent}, F=0}$, i.e., 20% of the estimated spawning biomass in the absence of fishing averaged over a recent time window). At its 10th regular session, the Commission further agreed that the time window for estimation of the spawning biomass in the absence of fishing should be 10 years, and be based on the years (from the last year used in the assessment to 10 years prior to that). Work on determining acceptable levels of risk of not breaching the limit reference point is still in progress.

At the 12th regular session of the Commission in 2015 (WCPFC 2015b), CMM 2015-01 was passed (replacing a CMM 2014-01 and its predecessors). Included in this resolution is the statement: “*the Fishing Mortality Rate (F) for skipjack tuna will be maintained at a level no greater than F_{MSY} , i.e. $F/F_{\text{MSY}} \leq 1$.*” This reiterates the same statement made previously in CMM 2013-01 and CMM 2014-01. The agreed fishing mortality limit of $F/F_{\text{MSY}} \leq 1$ is consistent with maintaining the skipjack stock at or above B_{MSY} . This is an indication of an intent to maintain the stock at a high productivity level, not just well above the point at which recruitment might be impaired. The time window used in estimating the recent average spawning biomass is the same as that described above for the LRP.

CMM 2014-06 describes how the WCPFC views harvest strategies and its plans for implementing them for all tropical tuna stocks, including skipjack. 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 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>).

Work towards establishing reference points and harvest control rules has progressed over several years through a series of Management Objectives Workshops (MOWs). CMM 2014-06 was adopted at the 11th regular session of WCPFC to develop and implement a harvest strategy approach for key fisheries and stocks in the WCPO. The CMM identifies the elements that harvest strategies are to contain (including defined operational objectives, target and limit reference points for each stock, acceptable levels of risk of not breaching limit reference points, a monitoring strategy, decision rules that aim to achieve the target reference point and avoid the limit reference point, and management strategy evaluation).

CMM 2014-06 includes a paragraph that the Commission shall agree a workplan and indicative timeframes to adopt or refine harvest strategies for skipjack, bigeye, yellowfin, South Pacific albacore, Pacific bluefin and northern albacore tuna by no later than the twelfth meeting of the Commission in 2015. A work plan to further the development and adoption of harvest strategies for these species was adopted at the 12th regular session of the Commission

(WCPFC 2015b, Attachment Y). The Commission tasked the SC with support from the Scientific Service Provider to undertake the activities specified in the agreed work plan (included in this report at Appendix 10). Further development of the harvest strategy will require consideration of potential shortcomings, for example, the need for appropriate mechanisms to be integrated into the harvest strategy to manage potential effort creep. The main disadvantage of the VDS is that the fisheries management unit is defined as a single method / three species fishery. The VDS regime is likely to become fragile if the three species require separate management or if the TAE for the entire fishery is driven by an imperative to conserve bigeye tuna rather than representing an appropriate target reference point for skipjack (McClurg 2016).

Also at the 12th Regular Session of the Commission (WCPFC 2015b), CMM 2015-06 saw the adoption of a target reference point for skipjack tuna, “*The target reference point for the WCPO skipjack tuna stock shall initially be 50 per cent of the estimated recent average spawning biomass in the absence of fishing, ($SB_{F=0, t1-t2}$)*”. This is to be an interim TRP, subject to review by 2019.

There are no formally agreed decision rules or harvest control rules (HCRs) yet in place. However, the harvest strategy is based on high quality science and compliance information. The current state of the stock provides evidence of successful management to date. Skipjack spawning biomass is estimated to be at $48\%SB_{F=0}$, approaching twice the SB_{MSY} level of $28\%SB_{F=0}$, and fishing mortality is estimated to be $0.61F_{MSY}$. Skipjack is also not projected to fall to the SB_{MSY} level. WCPFC (2014c) reports 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 ($F > F_{MSY}$)*.” Nevertheless, the WCPFC has put in place CMM 2014-06 aimed at ensuring harvest control rules and agreed TRPs are developed and implemented for tuna stocks, including skipjack. This was strengthened in 2015 through the agreed work plan for the adoption of harvest strategies required under CMM 2014-06.

3.5.1.6 Vessel Day Scheme (VDS)

The VDS was established in 2006 under the Palau Arrangement (PNA 2016g) and became operational on 1 December 2007, initially limiting effort levels of PNA countries to 2004 levels. The VDS limits total days fished by purse seiners fishing within the EEZs of PNA countries, where the majority of purse seine fishery takes place within the WCPFC-CA. Fishing under the VDS is subject to strict PNA-wide rules, as well as to any national or WCPFC rules in force. Additionally, the 3rd Implementing Arrangement of the Nauru Agreement prescribed closures to purse seine fishing, by vessels licensed to fish in PNA waters, of areas of the high seas from 1 January 2011 that were surrounded by the EEZs of PNA countries (from 10°N to 20°S latitude and 170°E to 150°W longitude, equating to an area of 4,555,000 sq. km) (PNA 2010, Banks *et al.* 2011).

The VDS has been progressively improved to address identified shortcomings (e.g. rollover of days between years and over-runs of some national PAEs). The major function of effort limits initiated by the PNA to date has been to improve economic returns rather than address the sustainability of skipjack tuna given the healthy status of the stock.

The VDS TAE is determined annually in advance, currently for the next two years, based on the best available scientific, economic and management information and advice. The TAE is limited by the decisions of the WCPFC on the level of purse seine effort in PNA EEZs. The current provision in CMM 2015-01 limiting purse seine effort in PNA waters to the 2010 level was confirmed by the Commission following advice from the Scientific Committee based on

the 2014 skipjack stock assessment that the Commission should “take action to avoid further increases in fishing mortality and keep the skipjack stock around the current levels.” The actual TAE is calculated by applying an adjustment factor to the estimated effort in PNA EEZs advised by SPC from logsheets (typically in the range of 2-3%) to calculate a VDS TAE in VDS days after allowing for the vessel length adjustment factors in the VDS. The analysis of the relevant scientific, economic and management information and advice on which the TAE is based is included in a Working Paper to the annual meeting of the Parties to the Palau Arrangement which is available on the PNA website (PNA 2016a). The discussion and decision-making among Parties on these papers takes place at sessions of the annual meetings of the Officials of the Parties to the Palau Arrangement that are open to observers and are regularly attended by observers, including NGO observers. Fishing days (PAE) are allocated to each PNA country and can be traded amongst the eight countries in a single licensing year under conditions designed to ensure that the TAE is not exceeded. At the 20th Annual PNA Meeting in the Federated States of Micronesia in March 2015, the PNA countries agreed to confirm the provisional 2015 TAE of 44,625 days. In addition, a TAE of 44,890 days was adopted for 2016 and set as the provisional PNA TAE for 2017. In addition, non-PNA member Tokelau joined the VDS in 2015 and was allocated a TAE of 985 days for 2015 and 991 days for 2016 (i.e. a total VDS TAE of 45,610 days for 2015 and 45,881 days for 2016) (PNA 2016a).

It is noted that further discussion on the harvest strategy is presented in Section 4 (Box 1).

3.5.2 Yellowfin tuna (*Thunnus albacares*)

3.5.2.1 Biology and distribution (yellowfin tuna)

Yellowfin tuna are found in tropical and subtropical waters of the Atlantic, Indian and Pacific Oceans. The thermal boundaries of occurrence are roughly between 18° and 31°C.

The distribution of yellowfin tuna in the Pacific is nearly continuous. However, the lack of evidence for long-range east-west or north-south migrations of adults suggests that exchange between the yellowfin tuna from the Eastern and the Central Pacific, and between the Western and the Central Pacific, is limited. This suggests the existence of subpopulations. There is a large amount of tagging data (1989-2012) which indicate extensive latitudinal movements among the equatorial regions but also a level of longitudinal movements to and from the subtropical latitudes (Figure 15).

The tagging data suggest that tuna can follow the movement of convergence zones and other areas of higher productivity, and respond to events such as the El Niño Southern Oscillation (ENSO), which change geographical patterns of productivity in the equatorial Pacific (Lehodey and Leroy, 1999). For the purpose of WCPFC yellowfin stock assessments, the stock within the domain of the model area (essentially the WCPO, west of 210°E – see Figure 4) has been considered as a discrete stock unit, with movement between regions modelled empirically based on analysis of tagging data (Davies *et al.* 2014).

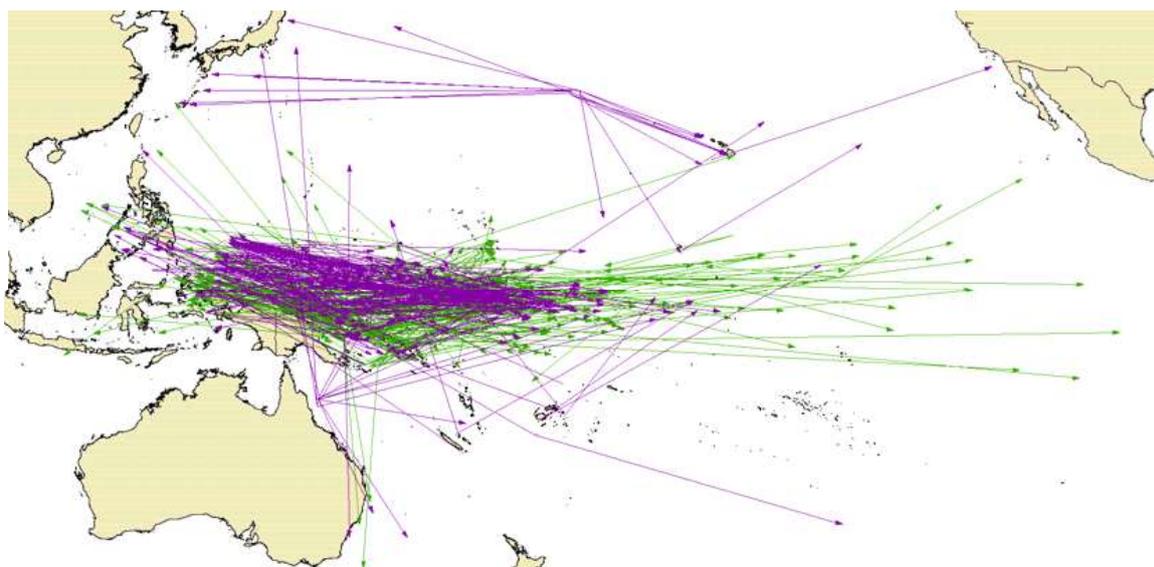


Figure 15: Long-distance (>1,000 nmi) displacements of tagged yellowfin in the Pacific Ocean from data available to SPC. (Source: Davies *et al.* 2014).
The green arrows are data from the Pacific Tuna Tagging Programme (2008-current). The purple arrows are from earlier SPC tagging in the western Pacific (Regional Tuna Tagging Project, 1989-1992), the IATTC in the eastern Pacific and the University of Hawaii in the North Pacific around Hawaii.

Yellowfin tuna are a fast-growing species. Juvenile yellowfin are first recruited to commercial fisheries (mainly surface fisheries in Philippines and eastern Indonesia) at a few months of age. They grow quickly to an estimated mean length for the final age-class of approximately 153 cm, with a maximum fork length close to 200 cm (Figure 16). However, growth rates are uncertain and may vary significantly by area in the western Pacific. Yellowfin tuna have a generation time of 3 years (Berger *et al.* 2013).

Yellowfin tuna mature at around 2-3 years of age but when information on sex ratios, maturity at age, fecundity, and spawning fraction are included, the reproductive output is found to peak between 10 and 15 years of age (Figure 17). Spawning occurs throughout the year in the core areas of distribution, but peaks are observed in the northern and southern summer months. Individuals may spawn every few days over the spawning period. Larval distribution in equatorial waters is trans-oceanic the year round but there are seasonal changes in larval density in subtropical waters.

Small yellowfin tuna are found in surface waters for the most part (often associated with skipjack), but as they grow, they may change their behaviour to live somewhat deeper (although still usually above the thermocline and shallower than albacore in a given area). This change in behaviour may be associated with the development of the gas bladder, which greatly reduces the metabolic costs of swimming starting from ~50cm, but it will depend on, for instance, relative food availability in surface vs. deeper waters (Lehodey & Leroy 1999). Yellowfin tuna feed on other fish, crustaceans and squid.

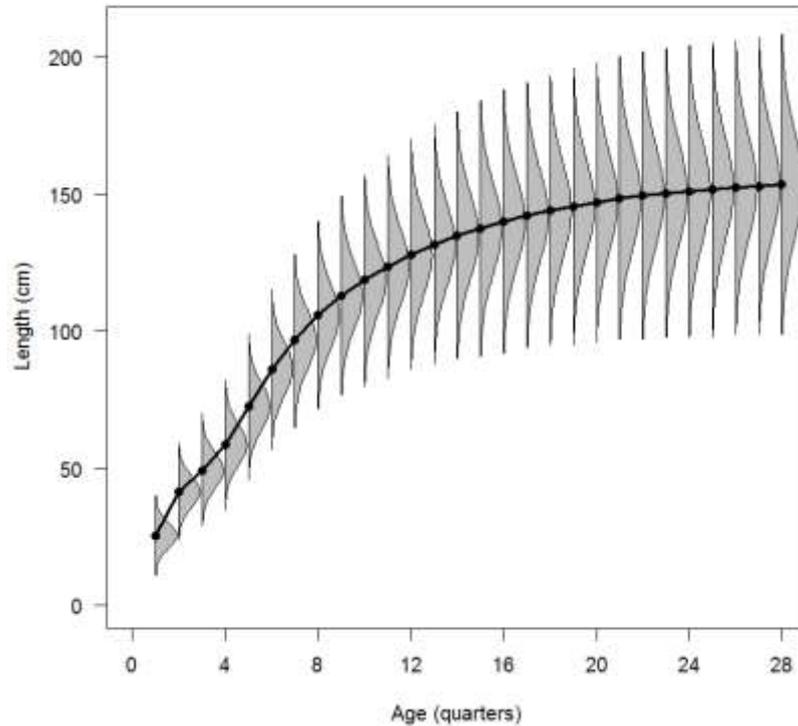


Figure 16: Yellowfin tuna: estimated growth for the reference case. (Source: Davies *et al.* 2014). The black line represents the estimated mean length (FL, cm) at age and the grey area represents the estimated distribution of length at age.

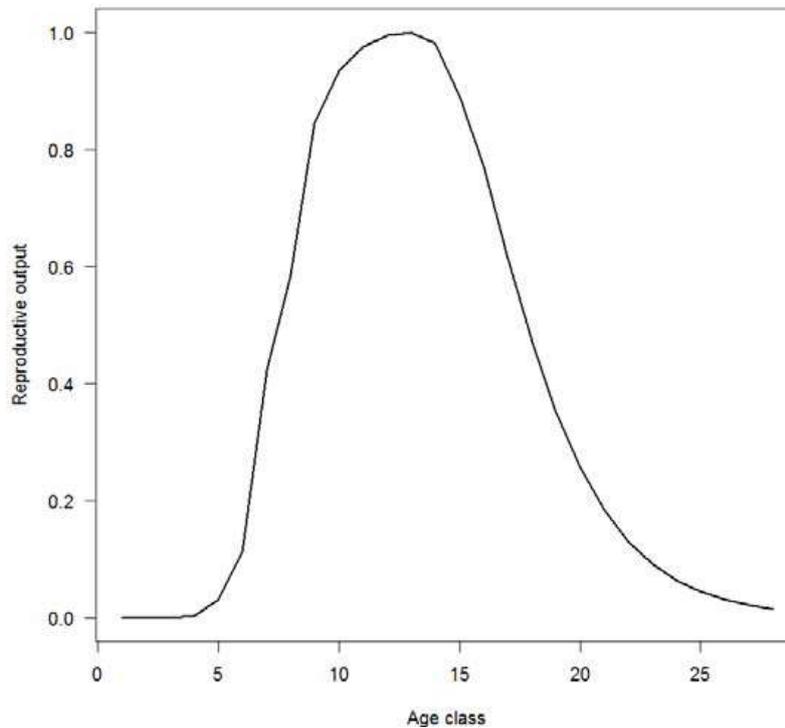


Figure 17: Yellowfin tuna: Index of spawning potential incorporating information on sex ratios, maturity at age, fecundity, and spawning fraction (Source: Davies *et al.* 2014).

Natural mortality is considered to be variable by size, declining initially with size, then increasing at the onset of maturity (Figure 16 in Davies *et al.* 2014). The lowest rate is estimated at approximately 0.6-0.8 per year for pre-adult yellowfin of around 50-80cm fork length (Hampton 2000, cited in Davies *et al.* 2014). Natural mortality is a key uncertainty in the stock assessment, as it is for many stocks.

3.5.2.2 Stock assessment (yellowfin tuna)

Stock assessments for yellowfin tuna have been conducted frequently since 1999. An independent review of the 2011 bigeye tuna assessment (Ianelli *et al.*, 2012) made several recommendations for improvement that apply equally to the yellowfin tuna assessment, and these have been incorporated into the current assessment where possible.

The assessment model relies mainly on catch and effort data for various fleets, size data and tagging data. The most recent stock assessment was conducted in 2014 (Davies *et al.*, 2014) and follows much the same process as described above for skipjack, i.e., it is undertaken by SPC's OFP, uses MULTIFAN-CL, draft results are submitted to the SC for discussion and review, and a final report presented to the WCPFC plenary. A pre-assessment workshop provided overview of the main input data sets and recommendations regarding the range of assessment model options and sensitivities to be included within the stock assessment. CPUE as an indicator of abundance from several fisheries is incorporated into the stock assessment. These include the Philippines and PNG archipelagic waters purse seine fisheries. The longline CPUE indices for the main longline fisheries in each region are one of the most important inputs to the assessment as they provide information on trends in abundance over time for each subregion. Additional information on CPUE indices is provided by Davies *et al.* (2014).

The main conclusions of the 2014 stock assessment were as follows (Davies *et al.* 2014; WCPFC 2014a):

1. The new regional structure appeared to work well for yellowfin, and in combination with other modelling and data improvements, provided a more informative assessment than in the past.
2. Spatially-aggregated recruitment was estimated to decline in the early part of the assessment, but there was no persistent trend post-1965.
3. There appeared to be confounding between the estimates of regional recruitment distribution and movement such that certain regions have had very low recruitments. While adding complexity to the recruitment process of age 1 fish, this did not add to the uncertainty over the range of runs considered in the assessment.
4. Latest catches marginally exceeded the MSY (reference case $C_{latest}/MSY = 1.02$).
5. Recent levels of fishing mortality were most likely below the level that will support the MSY ($F_{current}/F_{MSY} = 0.72$).
6. Recent levels of spawning potential were most likely above (based on 2008-11 average and based on 2012) the level which will support the MSY ($SB_{current}/SB_{MSY} = 1.37$, $SB_{latest}/SB_{MSY} = 1.24$).
7. Recent levels of spawning potential were most likely above (based on 2008-11 average and based on 2012) the limit reference point of $20\%SB_{F=0}$ agreed by WCPFC.
8. Recent levels of spawning potential were most likely higher (by 1%, based on 2008-11 average) and lower than (by 2% based on 2012) the candidate biomass-related target reference points (TRPs) currently under consideration for skipjack tuna, i.e., $40-60\%SB_{F=0}$.

9. Stock status conclusions were most sensitive to alternative assumptions regarding the modelling of tagging data, assumed steepness and natural mortality. However, the main conclusions of the assessment were robust to the range of uncertainty that was explored.

Davies *et al.* (2014) describes structural assumptions, model parameterization and priors which have been progressively developed over the years. The latest report generally only contains details of changes to these assumptions which may be more fully described in earlier versions. Aside from updating the input data (catch, effort, size frequencies, and standardised CPUE derived from aggregate and operational data), there were five main differences in the input data and structural assumptions of the 2014 assessment compared to the Langley *et al.* (2011) assessment:

1. Spatial structure was expanded from six to nine regions (see Figure 18);
2. Fishery structure was expanded from 25 to 33 fisheries; and featured the first inclusion of some Japanese and Vietnamese coastal fishery catches necessitating redefining of the WCPO fisheries;
3. Incorporation of CPUE indices derived from either Japanese logsheet data, or all operational data from all fleets (combined flags) available to SPC;
4. A revised protocol for deriving the length and weight size compositions for the principal longline fisheries;
5. The correction of the purse seine length frequency data collected by observers to account for sampling bias and the inclusion of Pago Pago port sampling data, with all data weighted in respect of the set catch weight.

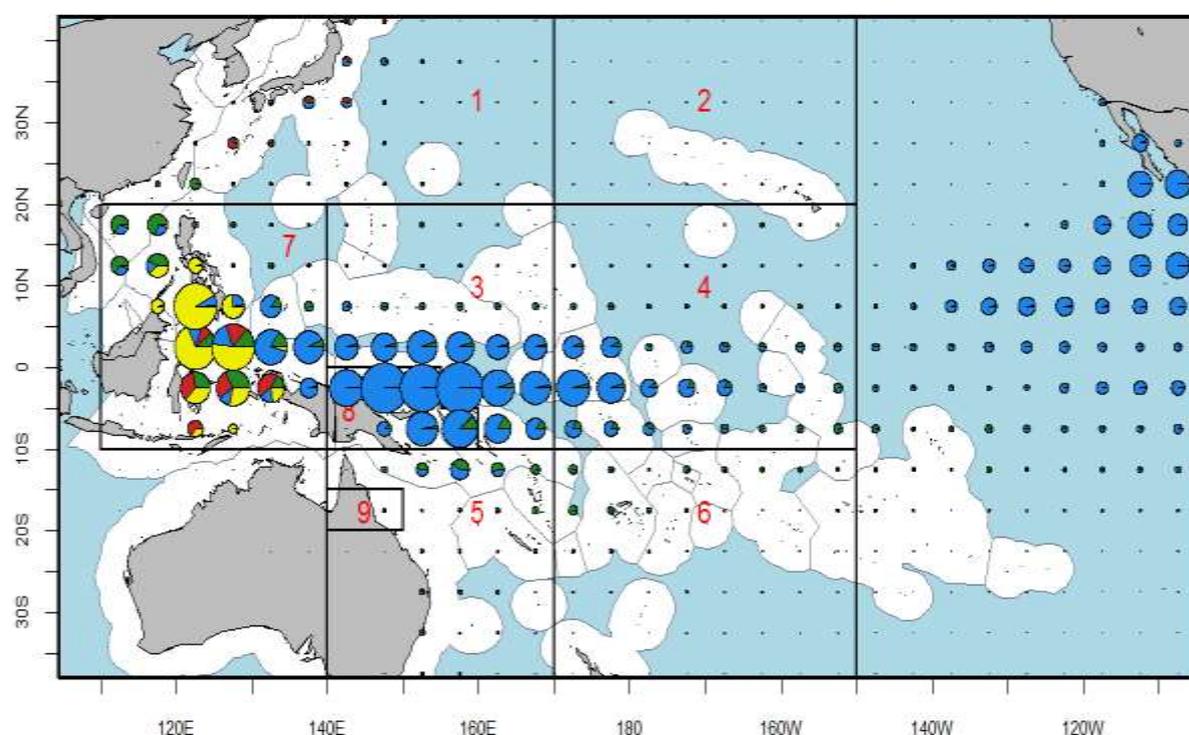


Figure 18: Catch distribution (1990-2010) for yellowfin tuna by 5 degree squares of latitude and longitude and fishing method. (Source: Davies *et al.* 2014). Fishing methods are longline (green), purse-seine (blue), pole-and-line (red), and other (yellow). Overlaid are the regions for the 2014 assessment.

The impacts of each of these changes was examined in a stepwise development towards a new reference case model. In addition to the reference case a wide range of other model formulations were examined. The key uncertainties were identified and the effect of the uncertainty was explored through a grid of 48 combinations of model runs:

- Tag mixing period (2 different levels);
- Steepness (3 levels: 0.8 0,65 and 0.95);
- CPUE (2 levels);
- Size data weighting (2 levels); and
- Natural mortality (2 levels: fixed vs estimated).

A retrospective analysis was also undertaken for the yellowfin tuna assessment, involving re-running the model after consecutively removing successive years of data to estimate model bias. The results of the retrospective analyses were the basis of a modification to the reference case whereby recruitment deviates for the last four periods were not estimated.

As discussed under the skipjack tuna stock assessment, there a potential impact of some fleets changing their reporting practices such that some searching days are reported as non-fishing transit days. "This practice essentially represents effort creep and we have not yet specifically corrected recent data to ensure consistency of reporting. Therefore, the impact of this is not known, but it will be minimized by the practice of estimating frequent time-based changes in catchability" (Davies *et al.* 2014). The issue was not identified as a major source of uncertainty for the assessment but is well-recognised by management.

As reported in Morison & McLoughlin (2016), two reviews of the previous yellowfin tuna assessment (Haddon 2010 and Maguire 2010) were commissioned by the USA through the Center for Independent Experts (CIE). A response to these reviews was provided by SPC to SC7 (SPC 2011) but there was no reference to the findings of this review or the response in the latest stock assessment (Davies *et al.* 2014). There is, however, extensive consideration of the results of the review of the bigeye tuna assessment (Ianelli *et al.* 2012). The SPC response also notes that the review was not initiated by SPC or WCPFC and was conducted without the knowledge of SPC or any direct contact with SPC by either CIE or the reviewers.

Catch and effort data

The spatial distribution of catches of yellowfin tuna across the WCPO for the period 1990-2010 is in shown in Figure 18, above.

WCPO annual catches by major gear categories are shown in Figure 19. Catch identified as "other" is dominated by the domestic fisheries of the Philippines and Indonesia, principally catching smaller fish using a variety of small-scale gear types (e.g. pole and line, ringnet, gillnet, handline and seine net) but also including small to medium sized purse seines (Davies *et al.* 2014).

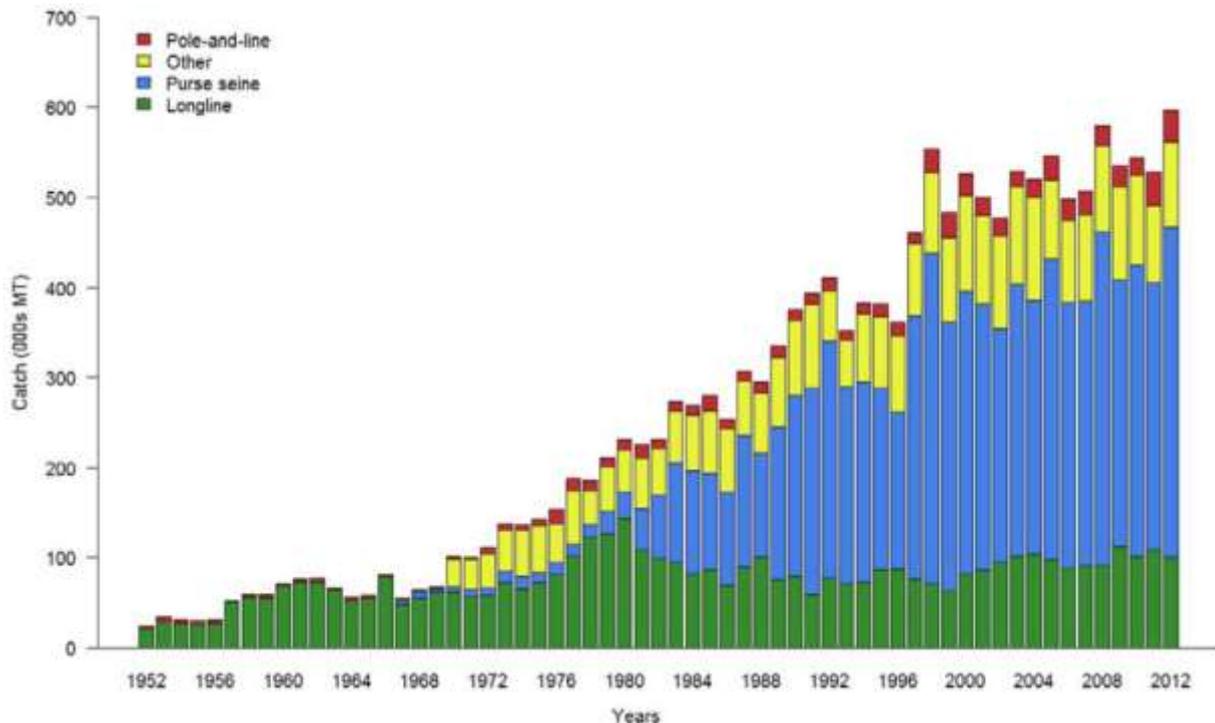


Figure 19: Total annual catch (1000s mt) of yellowfin tuna by fishing gear as used in the 2014 stock assessment’s reference case model (Source: Davies *et al.* 2014).

Tagging data

The yellowfin assessment incorporates tagging data, as they are informative about stock size, and exploitation rate. A large amount of tagging data was available for incorporation into the assessment. The data used consisted of the OFP’s Regional Tuna Tagging Project conducted during 1989-1992, the Coral Sea tagging program (1991-1995), and the Pacific Tuna Tagging Programme (PTTP) data. For incorporation into the MULTIFAN-CL analysis, tag releases were stratified by release region, time period of release (quarter) and the same size classes used to stratify the length frequency data. A total of 82,581 releases were classified into 78 tag release groups. Returns from each size-class of each tag release group (17,121 tag returns in total) were then classified by recapture fishery and recapture time period (quarter). Because tag returns by purse seiners were often not accompanied by information concerning the set type, tag return data were aggregated across set types for the purse-seine fisheries in each region. The population dynamics model was in turn configured to predict equivalent estimated tag recaptures by these grouped fisheries (Davies *et al.*, 2014).

3.5.2.3 Stock status

Stock status is presented in the 2014 assessment report (Davies *et al.* 2014) and the 2014 SC summary report (WCPFC 2014a). Outputs of the 2014 assessment relative to a range of reference points are given in Table 14. Outcomes are summarized in Figure 20, Figure 21, Figure 22 and Figure 23.

Table 4 shows that the latest estimate of spawning biomass (2012) of 899,496 t is above both the level that will support MSY ($SB_{latest}/SB_{MSY} = 1.24$ for the base case and ranges from 1.05 to 1.51 across the four models) and also above the newly adopted LRP of $0.2SB_{F=0}$ ($SB_{latest}/SB_{F=0} = 0.38$) for the base case model and ranges from 0.35 to 0.40 (WCPFC 2014a).

Table 14: Estimates of management quantities for selected stock assessment models.
 (Source: WCPFC 2014a).
 N.B: For the purpose of this assessment, “current” is the average over the period 2008–2011 and “latest” is 2012. Mix_1 relates to the tag mixing period and h = steepness.

Parameter	Base case	h=0.65	h=0.95	Mix_1
MSY	586,400	527,200	642,800	526,400
C_{latest}/MSY	1.02	1.12	0.93	1.12
$F_{current}/F_{MSY}$	0.72	0.87	0.58	0.87
B_0	4,319,000	4,475,000	4,221,000	3,862,000
$B_{current}$	1,994,655	1,996,179	1,995,224	1,597,536
SB_0	2,467,000	2,557,000	2,411,000	2,202,000
SB_{MSY}	728,300	859,600	594,500	648,000
$SB_{F=0}$	2,368,557	2,556,733	2,255,523	2,206,510
$SB_{current}$	998,622	999,474	998,914	746,743
SB_{latest}	899,496	899,362	898,389	770,210
$SB_{current}/SB_{F=0}$	0.42	0.39	0.44	0.34
$SB_{latest}/SB_{F=0}$	0.38	0.35	0.4	0.35
$SB_{current}/SB_{MSY}$	1.37	1.16	1.68	1.15
SB_{latest}/SB_{MSY}	1.24	1.05	1.51	1.19

Fishing mortality has generally been increasing through time. For the reference case $F_{current}$ (2008–2011 average) is estimated to be 0.72 times the fishing mortality that will support MSY. Across the four models (base case and three sensitivity models) $F_{current}/F_{MSY}$ ranged from 0.58 to 0.90 (WCPFC 2014a).

The SC (WCPFC 2014a) reported equilibrium unfished spawning potential SB_0 was estimated at 2,467,000 mt and the spawning potential that would support the MSY was estimated to be 728,300 mt or 30 % of SB_0 . The total equilibrium unfished biomass B_0 was estimated to be 4,319,000 mt (Table 14).

Management advice based on the 2014 assessment is that yellowfin spawning biomass is above the biomass-based LRP ($0.2SB_{F=0}$) and overall fishing mortality appears to be below F_{MSY} . It is highly likely that the stock is not overfished and overfishing is not occurring. Latest catches in the assessment (612,797 mt, 2012) of WCPO yellowfin tuna marginally exceed MSY (586,400 mt).

Estimated MSY has declined substantially since the 1970s (Figure 24). Prior to this time, the WCPO yellowfin fishery was almost exclusively conducted using longlines, with low exploitation rates of small yellowfin. The increased development of fisheries catching younger yellowfin has reduced estimated MSY levels (Davies *et al.* 2014).

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).

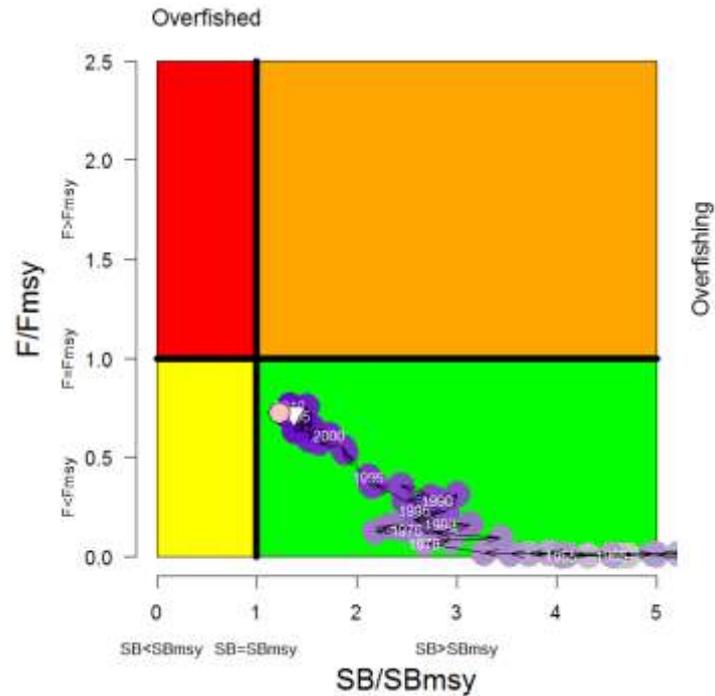


Figure 20: Yellowfin tuna: Temporal trend in annual stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) reference points, for the period 1952–2011 from the reference case. (Source: Davies *et al.* 2014).
 The colour of the points is graduated from mauve to dark purple through time and the points are labelled at 5-year intervals. The white triangle represents the average for the current period and the pink circle the latest period

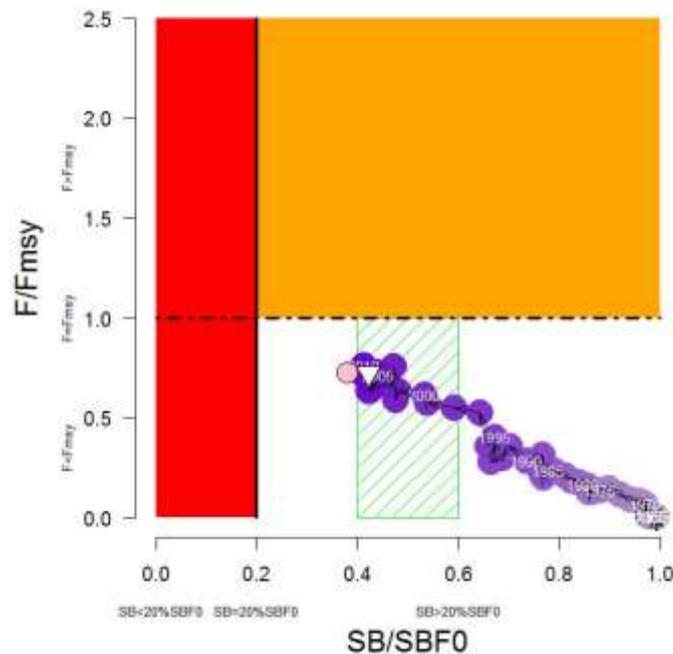


Figure 21: Yellowfin tuna: Alternative portrayal of stock status with target and limit reference points. (Source: Davies *et al.* 2014).
 The red zone represents spawning potential levels lower than the agreed limit reference point which is marked with the solid black line. The orange region is for fishing mortality greater than F_{MSY} ($F=F_{MSY}$ is marked with the black dashed line). The lightly shaded green rectangle covering 0.4-0.6 $SB_{F=0}$ is the 'space' that WCPFC asked for consideration of a TRP for skipjack tuna.

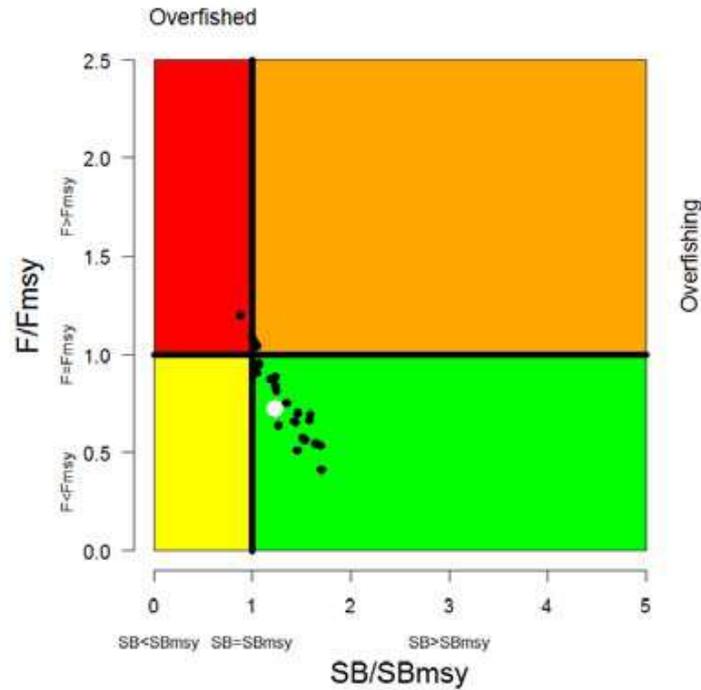


Figure 22: Yellowfin tuna: Plot of $S_{B_{late}}/S_{B_{MSY}}$ versus $F_{Current}/F_{MSY}$ for the 48 model runs undertaken for the structural uncertainty analysis. (Source: Davies *et al.* 2014). The reference case model is denoted by the large white circle.



Figure 23: Yellowfin tuna: Ratio of exploited to unexploited spawning potential, $S_{B}/S_{B_{F=0}}$, for the WCPO for the reference case. (Source: Davies *et al.* 2014). The current WCPFC limit reference point of 20%SBF=0 is provided for reference as the grey dashed line and the red circle represents the level of spawning potential depletion based on the agreed method of calculating SBF=0 over the last ten years of the model (excluding the last year)

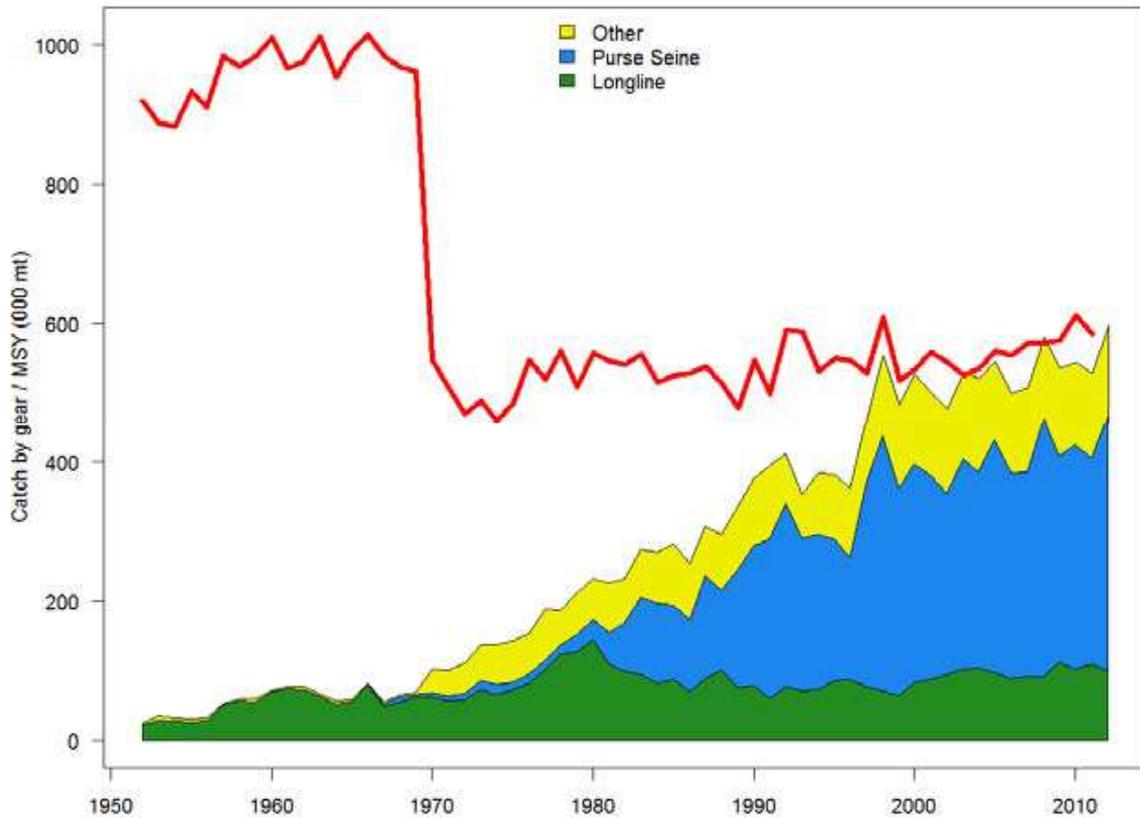


Figure 24: Yellowfin tuna: History of the annual estimates of MSY (red line) compared with annual catch split into three sectors for the 2014 assessments' reference case. (Source: Davies *et al.* 2014).

Apart from variability early in the time series, spawning biomass for the WCPO yellowfin was estimated to have declined steadily over the model period (Figure 25). Uncertainty in the biomass estimates is substantially higher earlier in the time series, consistent with uncertainty in recruitment (Davies *et al.*, 2014).

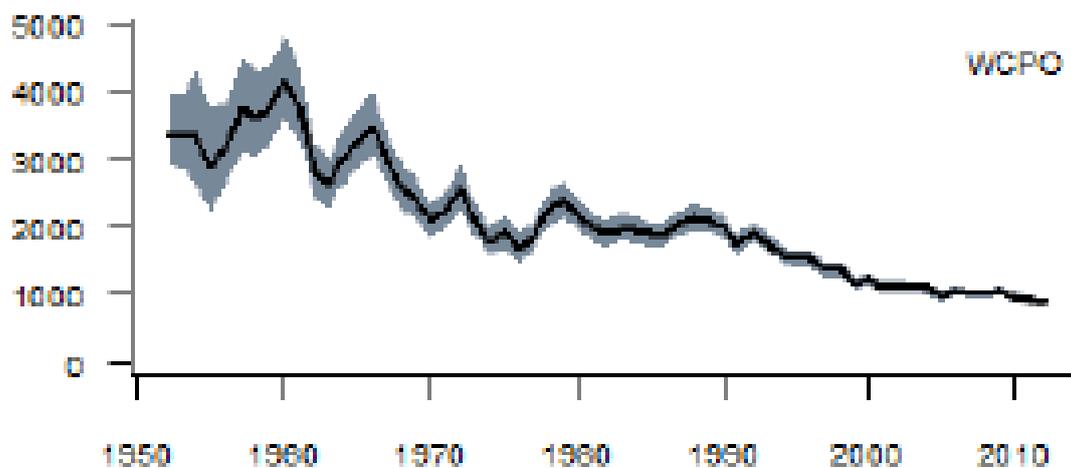


Figure 25: Estimated annual average spawning potential for the WCPO for the reference case. (From Davies *et al.* 2014). The shaded areas indicate the approximate 95% confidence intervals

3.5.2.4 Harvest strategy and control rules (yellowfin tuna)

Notes above on the harvest strategy for skipjack tuna are largely also applicable to yellowfin tuna. However, fishing methods other than purse seine take a higher percentage of the total catch than is the case for skipjack tuna. Since 2010 annual catches of yellowfin by methods other than purse seine have been approximately 40-50% of the total, hence the measures in place for these other fishing methods require greater consideration for yellowfin tuna.

Yellowfin have been subject to the provisions of CMMs since CMM 2005-01 was passed, requiring that “*CCMs shall take necessary measures to ensure that purse seine effort levels do not exceed either 2004 levels, or the average of 2001 to 2004 levels, in waters under their national jurisdiction, beginning in 2006.*” The most recent measure is CMM 2015-01, and the purse seine effort control measures it contains are discussed above under skipjack tuna. Also, as described in the section on skipjack tuna, CMM 2014-06 describes how the WCPFC views harvest strategies and its plans for implementing them for all tropical tuna stocks, including yellowfin tuna.

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 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>). CMM 2013-01, CMM 2014-01 and CMM 2015-01 have, in addition to the measures for the purse seine component of the fishery, incorporated requirements that other commercial fisheries for bigeye tuna, yellowfin tuna and skipjack tuna take necessary measures such that fishing effort and capacity shall not exceed the average level for the period 2001-2004 or 2004. For longline fisheries, these CMMs require that “*CCMs agree to take measures not to increase catches by their longline vessels of yellowfin tuna.*” These 3 CMMs state that at the following regular Commission meeting “*...the Commission will formulate and adopt appropriate limits for CCMs, based on recommendations from the Scientific Committee, and taking into account other measures in this CMM.*” These limits have not yet been agreed.

At the 9th regular session of the Commission in 2012, WCPFC established a limit reference point for yellowfin tuna ($20\%SB_{\text{recent},F=0}$, i.e., 20% of the estimated spawning biomass in the absence of fishing averaged over a recent time window). At its 10th regular session, the Commission further agreed that the time window for estimation of the spawning biomass in the absence of fishing should be 10 years, and be based on the years (from the last year used in the assessment to 10 years prior to that). Work on determining acceptable levels of risk of not breaching the limit reference point is still in progress.

A formal target reference point is under discussion by WCPFC and subject to development under the workplan established under CMM 2014-06. In the absence of a formal target reference point, the default WCPFC target of B_{MSY} applies.

There are no formally agreed decision rules or HCRs yet in place. However, the harvest strategy is based on high quality science and compliance information. The current state of the stock provides evidence of successful management to date.

3.6 Principle Two: Ecosystem background

3.6.1 Primary and secondary species

Under the CR v.2.0 (MSC 2014), primary species are defined as those species that are in scope but not target (P1) species “*where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points*”. Secondary species’ are then defined by the MSC as fish/shellfish species that do not meet the definition of ‘primary’ species, or species that are out of scope of the program but where the definition of endangered, threatened or protected (ETP) species is not applicable (MSC 2014).

For primary and secondary species, a ‘main’ designation is then given where either i) “*the catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA*”, ii) “*the species is classified as ‘less resilient’ and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA*”, or iii) in cases where a species does not meet the 2% or 5% designated weight thresholds, a species is main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations.

SA 3.1.3.1 (MSC 2014) also requires that yellowfin tuna is considered as a P2 species in scoring UoA 1 (skipjack tuna), and that skipjack tuna is considered as a P2 species in scoring UoA 2 (yellowfin tuna); in both cases, these were assessed as main primary species.

Catch data for the PNAFTF were provided to the Assessment Team by the Secretariat for the Pacific Community (SPC), as recorded and reported by independent observers (Table 15). It was confirmed by Steven Hare (SPC, pers. comm.) that the data were provided for purse seine sets that were designated by skippers and verified by observers at the point of setting as being ‘freeschool’ (i.e., FAD-set catches were not included in the data).

It is important to note that observers are specifically instructed not to change the set designation once made (i.e., observers are instructed not to mark the set type in the observer report as ‘free school’ upon setting, but then change it to ‘FAD-set’ if, for example, a whale shark, semi-submerged log or other debris is found in the catch). This allows for a precautionary assessment of the impact of the PNAFTF, in that it means this MSC assessment is able to consider all catches that were designated as free school upon setting, not just a subset that were confirmed as being ‘free school’ at some point after hauling was completed. Nevertheless, under PNA rules, catches from sets that include FADs or FAD-associated indicator species (i.e, oceanic puffer fish, ocean triggerfish and drummer) are ineligible to proceed forward to carry the MSC logo. In this regard, a Variation Request clarifying that the PNAFTF does not infringe CR 7.4.9: “*The UoA and UoC shall not be defined based on the species caught as determined at the time of fishing*” (MSC 2014) was accepted by the MSC in November 2016.

Within the catch, the percentage contribution of the principal tuna species (skipjack tuna, yellowfin tuna and bigeye tuna) is determined by observers through spill or grab sampling, while the percentage contribution of all other species is estimated for the whole catch in order to avoid undersampling species comprising only a small percentage. For species considered to be ‘species of special interest’ (SSIs), including whale sharks, turtles and marine mammals, efforts are made to release the animals before hauling by sinking the headline, in order to minimise the potential for mortality (SPC, pers. comm.). Weights of SSIs are therefore estimated and included by observers in their reports, even though the animals are not landed on to the vessels, and in some cases may survive the catching process.

Table 15: Catch profile for the PNAFTF, 2014-2015, based on confirmed, processed observer data. N.B. Sampling was of 20,029 (11,037 successful) sets in 2014, and 15,113 (9,086 successful) sets in 2015), and cover > 60% of the total PNAFTF tuna catch from each year. (source: SPC, pers. comm.)

Rank	Species		2014 (t)	2015 (t)	2014-2015 Mean (t)	2014-2015 Mean %
1	Skipjack tuna	<i>Katsuwonus pelamis</i>	389,403.2	316,438.1	352,920.7	79.601
2	Yellowfin tuna	<i>Thunnus albacares</i>	79,822.5	89,196.5	84,509.5	19.061
3	Bigeye tuna	<i>Thunnus obesus</i>	4,475.3	5,804.4	5,139.8	1.159
4	Silky shark	<i>Carcharhinus falciformis</i>	286.9	160.4	223.6	0.050
5	Blue marlin	<i>Makaira nigricans</i>	141.8	132.2	137.0	0.031
6	Whale shark	<i>Rhincodon typus</i>	117.2	68.3	92.7	0.021
7	Black marlin	<i>Istiompax indica</i>	81.5	60.0	70.8	0.016
8	Devil manta ray	<i>Mobula</i> spp.	40.1	51.8	45.9	0.010
9	Giant manta	<i>Manta birostris</i>	42.3	35.7	39.0	0.009
10	Rainbow runner	<i>Elagatis bipinnulata</i>	27.6	26.9	27.2	0.006
11	Kawakawa	<i>Euthynnus affinis</i>	16.7	27.0	21.8	0.005
12	Striped marlin	<i>Kajikia audax</i>	18.9	22.8	20.8	0.005
13	Frigate tuna	<i>Auxis thazard</i>	20.7	11.3	16.0	0.004
14	Mahi mahi	<i>Coryphaena hippurus</i>	22.6	5.8	14.2	0.003
15	Manta rays (no ID)	Species not specified	9.5	10.4	9.9	0.002
16	False killer whale	<i>Pseudorca crassidens</i>	6.2	6.7	6.4	0.0015
17	Slender sunfish	<i>Ranzania laevis</i>	6.5	4.1	5.3	0.0012
18	Moontail bullseye	<i>Priacanthus hamrur</i>	10.0	0.0	5.0	0.0011
19	Mackerel scad / Saba	<i>Decapterus macarellus</i>	5.3	4.5	4.9	0.0011
20	Short-billed spearfish	<i>Tetrapturus angustirostris</i>	8.8	0.6	4.7	0.0011
25	Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	2.43	2.43	2.43	0.0005
29	Risso's dolphin	<i>Grampus griseus</i>	3.03	1.24	2.13	0.0005
35	Pygmy sperm whale	<i>Kogia breviceps</i>	0.00	2.00	1.00	0.0002
41	Olive Ridley turtle	<i>Lepidochelys olivacea</i>	1.14	0.12	0.63	0.0001
46	Dolphins / porpoises (no ID)	Species not specified	0.00	0.84	0.42	0.0001
52	Green turtle	<i>Chelonia mydas</i>	0.18	0.25	0.22	0.0000
56	Bottlenose dolphin	<i>Tursiops aduncus</i>	0.00	0.30	0.15	0.0000
57	Rough-toothed dolphin	<i>Steno bredanensis</i>	0.29	0.00	0.15	0.0000
58	Leatherback turtle	<i>Dermochelys coriacea</i>	0.23	0.05	0.14	0.0000
60	Melon-headed whale	<i>Peponocephala electra</i>	0.22	0.00	0.11	0.0000
61	Loggerhead turtle	<i>Caretta caretta</i>	0.04	0.15	0.09	0.0000
69	Hawksbill turtle	<i>Eretmochelys imbricata</i>	0.05	0.06	0.05	0.0000
84	Marine turtle (no ID)	Species not specified	0.05	0.00	0.03	0.0000
	79 other fish species ≤ 0.001% each	Negligible	38.9	38.8	38.9	0.0088
	Total all species		474,609.9	412,113.6	443,361.8	100.000

= P1 target species,
 = P2 primary species,
 = P2 secondary species,
 = ETP species
 (Yellowfin also P2 in UoA 1, Skipjack also P2 in UoA 2)

The data are presented in Table 15, and show that skipjack tuna and yellowfin tuna as the target species together made up 98% of the catch in 2014-2015. Bigeye tuna then made up 1.16% of the catch, but no other species made up more than 0.05% overall. Therefore, no species is a 'main' primary or secondary species. A large number of species are recorded in the catch at very low frequency – all 92 species comprising $\leq 0.001\%$ together accounted for just 0.01% of the total catch, and are therefore negligible components that are not considered further in the assessment (Table 15).

It is noted that the total weights for skipjack tuna and yellowfin tuna as presented in Table 15 do not match those presented in the UoA catch data (i.e., Table 4 and Table 5). The discrepancy is caused by a number of reasons, for example that there are delays in receiving some observer data, some data have yet to be processed, and there are queries over other data such that they remain unconfirmed. Nevertheless, these data are high quality and comprise more than half of the catch; they are clearly appropriate for understanding and assessing the PNAFTF catch profile overall.

3.6.1.1 Yellowfin tuna (Primary species for UoA 1)

SA 3.1.3.1 (MSC 2014) requires that yellowfin tuna is considered as a P2 primary species in scoring UoA 1. In the case of the PNAFTF, yellowfin tuna comprises more than 5% of the catch and so it is considered to be a main primary species for UoA 1. More details on the status, management and information available for yellowfin tuna are presented in Section 3.5.2 of this report.

3.6.1.2 Skipjack tuna (Primary species for UoA 2)

SA 3.1.3.1 (MSC 2014) requires that skipjack tuna is considered as a P2 primary species in scoring UoA 2. In the case of the PNAFTF, skipjack tuna comprises more than 5% of the catch and so it is considered to be a main primary species for UoA 2. More details on the status, management and information available for skipjack tuna are presented in Section 3.5.1 of this report.

3.6.1.3 Bigeye tuna (Primary species)

The introductory paragraphs for bigeye tuna (*Thunnus obesus*) are adapted from the SPC website: <http://www.spc.int/OceanFish/en/tuna-fisheries/tuna-species/298-bigeye>.

In the WCPO, bigeye tuna have a relatively broad distribution, both geographically between 40°N and 40°S, and vertically between the surface and 500 m deep (occasionally to 1000 m) due to their tolerance of low oxygen levels and low temperatures. In the tropical and subtropical waters of the WCPO, adult bigeye migrate from cooler deeper waters (beneath the thermocline) where they live during the day to warmer, near-surface waters (above the thermocline) at night. Juvenile bigeye tend to inhabit shallower waters and can form mixed schools with skipjack and yellowfin, which results in catches by the surface fishery, particularly in association with floating objects.

In the WCPO, smaller bigeye (20 to 75 cm, of 3 months to 1.7 years of age) are typically caught on the surface by a range of gears including handline, ringnet and purse seine and are used mainly for canning, while the majority of larger/older fish (100 to 180 cm, of 2 to 10 years of age) are caught by longline fisheries. Very few captured fish exceed 200cm or 120 kg. Bigeye tuna account for a relatively small proportion of the total tuna catch in the region.

Bigeye tuna grow more slowly than either yellowfin or skipjack, reaching around 40cm after one year. They also have a longer lifespan (at least 12 years) and mature later (around 3-4 years of age). Natural mortality is estimated to be relatively low compared with other tropical tuna species. These biological characteristics promote only moderate turnover in bigeye tuna populations, and, in combination with their susceptibility to multiple gear types throughout their

lifespan, make bigeye tuna less resilient to exploitation than more productive tuna species, including skipjack tuna. The bigeye tuna biomass is estimated to be significantly smaller than those of yellowfin tuna and skipjack tuna in the WCPO. For stock assessment purposes, bigeye tuna are believed to constitute a single stock in the WCPO.

The latest stock assessment for bigeye tuna was published as Harley *et al.* (2014). The main conclusions from the assessment were consistent with the other recent assessments from 2010 and 2011, and indicate that current fishing mortality exceeds F_{MSY} ($F_{CURRENT}/F_{MSY} = 1.57$), while bigeye tuna spawner biomass (SB) is currently at or very close to the limit reference point of 20% $SB_{F=0}$ ($SB_{CURRENT (2008-2011)} = 20\% SB_{F=0}$, $SB_{LATEST (2012)} = 16\% SB_{F=0}$). CMM 2015-01 states that the fishing mortality rate for bigeye tuna will be reduced to a level no greater than F_{msy} , to be achieved through a step-by-step approach through 2017.

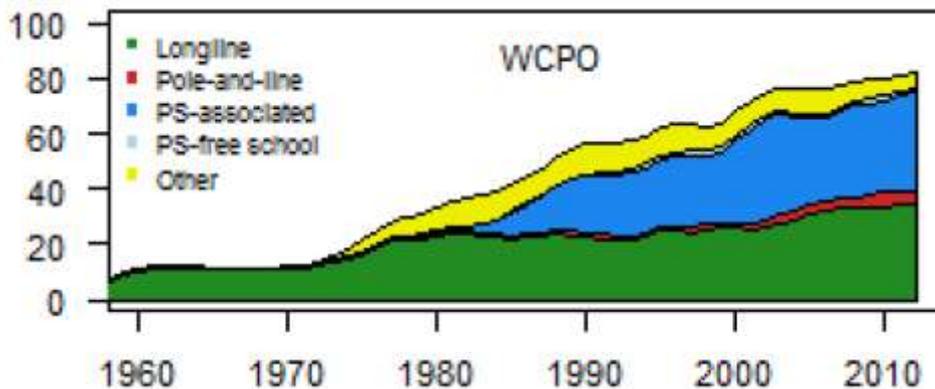


Figure 26: Estimates of reduction in spawning potential due to fishing (fishery impact = $1 - SB_t / SB_{t(F=0)}$) for the WCPO attributed to various fishery groups for the reference case. (Source: Harley *et al.* 2014)

Bigeye tuna are taken in a wide variety of different fisheries, but the vast majority of the catches in purse seines are taken from sets on FADs (Figure 26 and Harley *et al.* 2014). The impact of free school purse seine sets on the spawning potential of bigeye is very small relative to that of FAD-associated purse seine fishing or longline fishing, and bigeye tuna comprised only 1.159% of the PNAFTF catch in 2014-2015 (Table 15). In addition, the annual catch of bigeye tuna in the WCPO is estimated to have exceeded 150,000 t in most of the last 20 years (Harley *et al.* 2014), and so bigeye tuna is treated as a minor primary species for reassessment of the PNAFTF.

3.6.1.4 Blue marlin (Secondary species)

Blue marlin (*Makaira nigricans*) is a cosmopolitan species found primarily in tropical and subtropical epipelagic waters of the Pacific, Indian, and Atlantic Oceans. They are taken by a variety of different gear types, including in recreational troll fisheries, but in the period 2000-2009, 94.6% were taken in longline fisheries, with 3% taken by purse seine fleets (BWG 2013).

The most recent stock assessment was undertaken by the Billfish Working Group in 2013, and it is currently assumed that blue marlin consists of a single stock within the Pacific Ocean (BWG 2013). No target or limit reference points have been established for the Pacific blue marlin stock under the auspices of the WCPFC. Compared to MSY-based reference points, though, the spawning biomass was estimated to be 29% above SSB_{MSY} in 2011, and the fishing mortality (average across 2009-2011) was 19% less than F_{MSY} . BWG (2013) concluded that the blue marlin stock in the Pacific Ocean is not being overfished and is not in an overfished state.

The blue marlin catch in the WCPFC-CA is estimated to have exceeded 26,000 t in 2003, but catches have generally been maintained at around 18,000 – 20,000 t annually since the early 2000s (SPC 2016a). The catch in the PNAFTF represents a very small percentage of this total, and therefore blue marlin is treated as a minor secondary species for this assessment.

3.6.1.5 Black marlin (Secondary species)

Black marlin (*Istiompax indica*) is usually found in surface waters above the thermocline at temperatures from 15–30°C, often close to land masses, islands and coral reefs (Collette *et al.* 2011).

Black marlin is the second most common secondary species taken in the PNAFTF, with an average of 70.8 t recorded annually for 2014-2015, but this still comprised just 0.016% of the total PNAFTF catch (Table 15). There has been no stock assessment for Pacific black marlin, but the average annual total catch of black marlin in the WCPFC-CA is estimated at 2,524 t for the 2010-2015 period (SPC 2016a). The catch in the PNAFTF represents a very small percentage of this total, and therefore black marlin is also treated as a minor secondary species for this assessment.

3.6.1.6 Other secondary species

Apart from blue marlin and black marlin, no other secondary species comprised more than 0.01% of the PNAFTF catch (Table 15). Rainbow runner (*Elagatis bipinnulata*) = 0.006%, kawakawa (*Euthynnus affinis*) = 0.005%, striped marlin (*Kajikia audax*) = 0.005%, frigate tuna (*Auxis thazard*) = 0.004% and mahi mahi (*Coryphaena hippurus*) = 0.003% were the only species that comprised more than 0.002% of the catch, annually. These very low catch levels indicate that there is an all but negligible interaction between the PNAFTF and other secondary species.

3.6.1.7 Shark finning

Through the MSC interpretations log, the MSC has clarified the following:

“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.” Also, *“Fisheries should not be perversely penalised, for example, for putting in place very good surveillance and enforcement systems that are proving effective and still detecting and quickly resolving the odd rare case”* (<http://msc-info.accreditation-services.com/questions/shark-finning/>).

In 2010, the WCPFC introduced CMM 2010-07, which specifies that Commission Members (CCMs) take measures necessary to require their fishers to fully utilize any retained catches of sharks, with all parts of the shark excepting head, guts and skins to be retained to the point of first landing or transshipment. CMM 2010-07 also requires that CCMs take measures to encourage the release of live sharks that are caught incidentally and are not used for food or other purposes in fisheries not directed at sharks. CMM 2011-04 was then adopted and requires that no oceanic whitetip sharks (*Carcharhinus longimanus*) are retained in whole or in part, while CMM 2013-08 also requires that silky sharks (*Carcharhinus falciformis*) are not retained in whole or in part. Importantly, there is a requirement for 100% observer coverage in the PNAFTF (although some purse seine observer data are yet to be processed – SPC, pers. comm.), and while there is evidence of shark finning having occurred in the PNAFTF, the number of finning instances has dropped considerably in the recent period, and the overall number of animals concerned has also dropped dramatically (Table 16). The recent introduction and enforcement of CMM 2011-04 and 2013-08 appear to have been fundamental

in this regard, in particular because silky shark was, by far, the species that was most commonly recorded as being finned (Table 16). It is noted that finning or possession of sharks in contravention of legislation is an offence, and the Assessment Team was provided with evidence to show that PNA member countries are prosecuting vessel masters as required.

Table 16: Shark finning instances in the PNAFTF.
 (source: SPC, pers. comm., October 2016)

Year	Instances of finning	Number of animals retained	% silky shark
2012	179	928	84.8
2013	191	970	94.4
2014	45	222	94.1
2015	14	32	96.9

3.6.2 ETP species

ETP species are defined by the MSC (MSC 2014) as species that are:

- i) Recognised by national ETP legislation,
- ii) Listed on Appendix I of CITES (unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered),
- iii) Listed in any binding agreements concluded under the Convention on Migratory Species (CMS), or
- iv) Classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

In the original assessment of the PNAFTF (Banks *et al.* 2011), ETP species were considered to be any species that comprised more than 0.01% of the observed catch and was listed on CITES Appendix I or II. As such, the four species considered as being ETP were whale shark (*Rhincodon typus*), false killer whale (*Pseudorca crassidens*), sei whale (*Balaenoptera borealis*) and common dolphin (*Delphinus delphis*), with only the first two species considered to be at risk of being significantly affected by the fishery.

For the recently certified TriMarine fishery (Morison & McLoughlin 2016), a much greater number of species were included as ETP, including ten (10) shark and ray species or species groups, nine (9) cetaceans and six (6) turtle species. However, while oceanic whitetip shark was considered to be an ETP species under CMM-2011-04, which provides a prohibition to retain and store on-board, transship, or land oceanic whitetips sharks, silky shark was considered only as a bycatch species, although there is also a prohibition on retaining on board, transshipping, storing on a fishing vessel, or landing silky shark under CMM 2013-08.

For the purpose of this new assessment of the PNAFTF, it is noted that Palau (but no other PNA Signatory) is a Party to the Convention on Migratory Species (CMS). The MSC has clarified that Parties to the CMS are required to 'endeavour to provide immediate protection for migratory species included in Appendix I of the CMS' and to 'endeavour to conclude Agreements covering the conservation and management of migratory species included in Appendix II' (GSA3.1.5.2, MSC 2014). The MSC has also clarified that where international agreements apply to only one part of the UoA, the fishery should be assessed as if the agreement applied to the whole UoA (GSA3.10, MSC 2014). As such, the PNAFTF is assessed as if the CMS and any associated agreements apply to the whole fishery.

Table 17: The basis for considering species to be ETP for the PNAFTF assessment.

Species	Mean % weight (in t) 2014/15 (from Table 15)	Requirement for inclusion as ETP species	IUCN Redlist **
Silky shark	0.050	Covered under CMM 2013-08	NT
Whale shark	0.021	Covered under CMM 2012-04	En
Devil manta ray	0.010	CMS Appendix I (CMS 2015) (CITES App. II only)	N/A
Giant manta	0.009	CMS Appendix I (CMS 2015) (CITES App. II only)	Vu
Manta rays (no ID)	0.002	CMS Appendix I (CMS 2015) (CITES App. II only)	N/A
False killer whale	0.0015	Covered under CMM 2011-03	DD
Oceanic whitetip shark	0.0005	Covered under CMM 2011-04	Vu
Risso's dolphin	0.0005	Covered under CMM 2011-03	LC
Pygmy sperm whale	0.0002	Covered under CMM 2011-03	DD
Olive Ridley turtle	0.0001	CMS Appendix I (CMS 2015) / CITES Appendix I	Vu
Dolphins / porpoises (no ID)	0.0001	Covered under CMM 2011-03	N/A
Green turtle	0.0000	CMS Appendix I (CMS 2015) / CITES Appendix I	En
Bottlenose dolphin	0.0000	Covered under CMM 2011-03	DD
Rough-toothed dolphin	0.0000	Covered under CMM 2011-03	LC
Leatherback turtle	0.0000	CMS Appendix I (CMS 2015) / CITES Appendix I	CR
Melon-headed whale	0.0000	Covered under CMM 2011-03	LC
Loggerhead turtle	0.0000	CMS Appendix I (CMS 2015) / CITES Appendix I	CR
Hawksbill turtle	0.0000	CMS Appendix I (CMS 2015) / CITES Appendix I	CR
Marine turtle (no ID)	0.0000	CMS Appendix I (CMS 2015) / CITES Appendix I	N/A
Seabirds (unidentified)	N/A	Various	N/A

= ETP species considered in detail, = ETP species considered only briefly (comprise < 0.001%).

** IUCN status provided for information only.

IUCN codes:

DD = data deficient, LC = least concern, NT = near threatened
Vu = vulnerable, En = endangered, CR = critically endangered.

Through the MSC Interpretations Log, the MSC has also clarified that national ETP legislation can also mean binding fisheries legislation where the intent is to protect vulnerable species³:

“As ETP species include ‘protected’ species (not just endangered/threatened), there may be instruments other than those created specifically for protection of wildlife/endangered species where this protection is provided. For example EC Regulation 104/2015 setting fishing opportunities for 2015 lists “prohibited species” such as certain sharks, skates and rays (Article 12). The intent of prohibiting these species (or setting a ‘0’ TAC for them as done prior to 2015) is clarified in the introduction to this document as being particularly because these species have a poor conservation status and that discarding will be beneficial for them due to their high survivability This being the case, the MSC recommends that the assessment team consider the listing of species as prohibited in Article 12 of EC Regulation 104/2015 as equivalent to being recognised by national ETP legislation. However, the MSC recognises that not all species that have a 0 TAC set for a given year (e.g. in other instruments) should

³ <http://msc-info.accreditation-services.com/questions/should-species-that-are-listed-under-the-prohibitions-set-out-in-eu-fisheries-regulations-be-regarded-as-etp-species/>

normally be considered as ETP, unless the intent of doing so is stated in the instrument as being to specifically to protect the species because of its poor conservation status.”

It is noted that CMM 2010-07 does not prohibit the retention, transshipping, storing or landing of sharks, generally, and neither do the Food and Agriculture Organisation International Plan of Action for Conservation and Management of Sharks (FAO 1999) nor the Pacific Islands Regional Plan of Action for Sharks (Lack & Meere 2009). As such, and following the MSC guidance above, it is considered that these documents do not result in a requirement that all shark species be designated as ETP within the PNAFTF assessment.

In an effort to make the MSC assessment process more consistent and transparent to stakeholders, the MSC has also clarified that all ETP scoring elements impacted need to be included at all SG levels, even those species that are very rarely captured⁴. However, the requirement for 100% observer coverage and detailed reporting from the PNAFTF means that some species are recorded in extremely small quantities, as shown in Table 15, and any species comprising $\leq 0.001\%$ (equivalent to 1 t in 100,000 t of catch) will only be considered briefly in this assessment.

The basis for determining that a species is ETP, and the current status of each species according to the International Union for the Conservation of Nature (IUCN) redlist are provided in Table 17. It is noted that none of the stocks of ETP species concerned here are considered to be subject to national or international requirements that have set limits for ETP species; as such PI 2.3.1 Sla is not scored as part of the assessment.

3.6.2.1 Silky shark

The introductory paragraphs for silky shark are adapted from Rice & Harley (2013).

Silky shark is a circumtropical species, and those inhabiting the coastal and oceanic waters of the WCPO are considered a single stock for stock assessment purposes. Silky sharks are one of the most commonly caught sharks in the tropical tuna fisheries, but there is only limited understanding of silky shark biology, ecology and movement patterns, information on the movements, migration and distribution of silky sharks in the Pacific can be inferred from previous, globally distributed studies.

Silky sharks show a preference for warmer tropical waters above 23°C. It has been suggested that for the first few years of life silky sharks in the Pacific Ocean lead demersal/semipelagic lifestyles associated with reefs and deeper parts of the continental and insular shelves, but then move to more offshore and pelagic environments as sub-adults. At some point, probably when near 130 cm in total length, silky sharks switch to a more oceanic habitat where they often join schools of large pelagic fish (such as tuna) and may disperse seasonally from the equator to higher latitudes. Estimated sizes at 50% maturity for silky sharks in the western Pacific are 212.5 cm total length for males and 210-220 cm total length for females, and the average litter size has been estimated at 6 pups, with a 9-12 month gestation period.

There are no formal reference points established for silky shark, but Rice & Harley (2013) estimated that fishing mortality now exceeds F_{MSY} ($F_{CURRENT}/F_{MSY} = 4.48$), while spawning biomass has declined to levels below SB_{MSY} ($SB_{CURRENT}/SB_{MSY} = 0.70$). It was therefore considered that overfishing is occurring, and that the silky shark stock is in an overfished state (Rice & Harley 2013).

⁴ <http://msc-info.accreditation-services.com/questions/p2-species-assessing-negligible-interactions/>

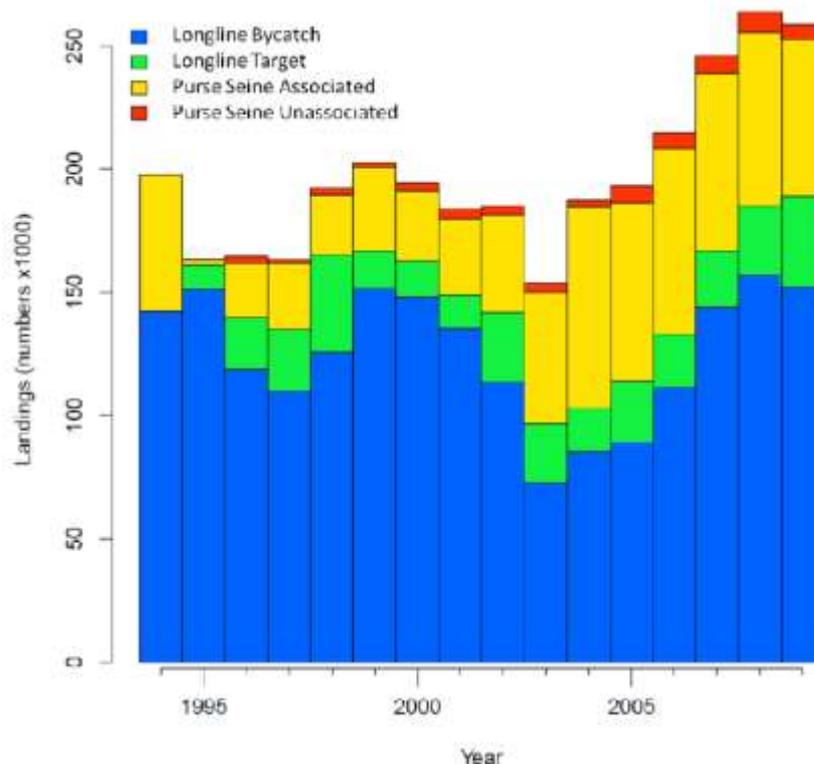


Figure 27: Annual estimated silky shark catch (in weight) in the WCPO by fleet, 1994-2009. (source: Rice & Harley 2013).

The greatest impact on the silky shark stock is attributed to bycatch from the tuna longline fishery, but there are also significant impacts from a targeted longline fishery, and from the FAD-associated purse seine fishery which catches predominantly juvenile individuals (Rice & Harley 2013). The WCPO unassociated purse seine fishery is estimated to take a small proportion ($\approx 3\%$) of the overall catch (Figure 27), while Williams (1997) estimated that the CPUE of silky sharks in FAD-associated purse seine sets was 9.7 times that of the CPUE in unassociated sets. Silky sharks represent just 0.05% of the PNAFTF catch (Table 17).

CMM 2013-08 recognises the recommendation from Rice & Harley (2013) that the Commission should consider measures directed at by-catch mitigation as well as measures directed at targeted catch to improve the status of the silky shark population, and requires that silky sharks are not retained in whole or in part in the WCPFC-CA. Recent records of silky shark in the PNAFTF catch data (Table 15) reflect the total of all silky sharks that were caught in the fishery, and no deduction is made for any animals that were subsequently released alive. There do not appear to be WCPO-specific data on silky shark survival post release, but other data reported in indicate that 10-20% may survive being returned (Filmler *et al.* 2012). Post-release survival is maximised if the animals are released immediately during brailing or sorted and returned to the water quickly from the upper work deck (Muir *et al.* 2013). A good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing shark and ray species (Poisson *et al.* 2012).

3.6.2.2 Whale shark

Rice & Harley (2012) summarised available information on the stock status of whale shark (*Rhincodon typus*) in the WCPO. The whale shark is the world's largest fish and they noted that while there is a paucity of biological studies, it is thought to be one of the latest maturing and longest living animals on earth. While whale sharks have potentially the highest fecundity of all the worlds sharks, this is countered by estimates of age at maturity around 30 years and size at maturity over 8m. These estimates are uncertain, and there is limited evidence to

accurately determine age, growth, and maturity of wild whale sharks, but it is concluded that they are likely to be a species with low population growth and therefore be vulnerable to fishing-related mortality.

As part of the Nauru Agreement, and as a condition of access to the fisheries zones of the Parties, no purse seine vessel shall engage in fishing or related activity in order to catch tuna associated with whale sharks, while the net roll must be immediately stopped and the whale shark released if a whale shark is encountered in a purse seine net in PNA waters. (PNA 2010). The WCPFC also adopted CMM 2012-04, which prohibits vessels from setting on tuna schools associated with a whale shark, and ensuring that all reasonable steps are taken to ensure the safe release of any whale sharks that are encircled during purse seine operations.

Whale sharks represented 0.021% of the PNAFTF catch, although it is noted that this is an estimate based on observer-estimated weights of all whalesharks that are encircled during fishing operations, and no deduction is made for any animals that were observed within the net but escaped prior to completing the pursing operation, or which were fully encircled but were subsequently released alive. SPC (2010) estimated the mortality rate of whale sharks taken in purse seines to be 12%. Using data reported by Clarke (2015), if the number of whalesharks with unknown life status post release is excluded, then 11.3% of whalesharks (63 from 555 animals) were reported dead by purse seine observers in the WCPFC area from 2010-2014.

As noted previously, a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing shark and ray species, including whale sharks (Poisson *et al.* 2012). Guidelines on the safe release of encircled animals have also been endorsed by the WCPFC (WCPFC 2016c). It is not yet clear what impact this guidance has had on the rate of successful releases, generally.

Observer data indicate that the number interactions between the PNAFTF and whale sharks has averaged 61 animals annually over the period 2011-2015 (PNAO, pers. comm.). Based on the SPC (2010) estimate of mortality rate, an average of seven (7) whale sharks have suffered mortality in the PNAFTF, annually, from 2011-2015. However, Clarke (2015) noted that additional post-capture mortality may occur in excess of those whale sharks that are reported dead upon release, and that the fate of the animal has not been recorded in 35.9% of the capture events reported. As such, the annual PNAFTF-associated mortality estimate of only seven whale sharks may be low.

It is noted that, since 1st January 2014 and with respect to whale sharks, CMM 2012-04 has required that the master of the vessel shall:

- (a) *ensure that all reasonable steps are taken to ensure its safe release, and*
- (b) *report the incident to the relevant authority of the flag State, including the number of individuals, details of how and why the encirclement happened, where it occurred, steps taken to ensure safe release, and an assessment of the life status of the whale shark on release (including whether the animal was released alive but subsequently died).*

It is therefore anticipated that data on the fate of encircled whale sharks should improve in coming years.

3.6.2.3 Devil and giant manta rays

The introductory paragraphs for devil rays and giant manta ray are adapted from Marshall *et al.* (2011) and Walls *et al.* (2016).

The identification of *Manta* and *Mobula* species can be difficult, and is complicated by the fact that the genus *Manta* has recently been split into the giant manta ray (*Manta birostris*) and the

reef manta ray (*Manta alfredi*). There are also five devil ray species that appear to occur in PNA waters; the pygmy devil ray – *M. eregoodootenkee*, spinetail devil ray – *M. japonica*, Chilean devil ray – *M. tarapacana*, Shortfin devil ray – *Mobula kuhlii*, and bentfin devil ray – *M. thurstoni*.

Giant manta ray and Chilean devil ray are assessed as Vulnerable in the IUCN Redlist, and the Shortfin devil ray is considered to be Data Deficient, but the other devil rays are assessed as Near Threatened (indicating a lower level of risk).

While previously mainly taken in the WCPO as bycatch, devil rays are increasingly being targeted in some gillnet and harpoon fisheries in Indonesia and the Philippines in response to demand for devil ray gill plates. These fisheries have increased effort in terms of power and number of boats in recent years, resulting in an increase in local fishing pressure equivalent to an order of magnitude.

Devil rays have population sizes likely one or two orders of magnitude greater than manta rays, have larger geographic ranges, and larger migratory movements. This makes devil rays more challenging to assess than manta rays. Given the paucity of data across the entire *Mobula* genus, most population trend data for devil rays are not species-specific. In general, population declines can be inferred but not quantified.

The giant manta ray is the largest living ray, and occurs in tropical, sub-tropical and temperate waters of the Atlantic, Pacific and Indian Oceans. However, within this broad range, actual populations appear to be sparsely distributed and highly fragmented. This species is not regularly encountered in large numbers and, unlike the closely related reef manta ray, do not often appear in large schools (>30 individuals) when feeding. Overall they are encountered with far less frequency than the smaller reef manta ray, despite having a larger distribution across the globe.

While the giant manta ray is widely distributed and appears to be a migratory species, regional populations appear to be small considering the scale of their habitat. Individuals most commonly show a degree of site fidelity to specific regions, as well as critical habitats within them, such as cleaning stations and feeding sites. Preliminary satellite tracking studies and international photo-identification matching projects have suggested a low degree of interchange between populations.

While there is a distinct paucity of information on population numbers or trends, local populations are likely to be in decline in areas where they are fished, or are under threat from anthropogenic influences e.g., India/Sri Lanka, Indonesia, Philippines and the west coast of Mexico where encounter rates have dropped significantly over the last five years or anthropogenic mortality has been elevated. Overall, the rate of population reduction for giant manta ray appears to be high in several regions, up to as much as 80% over the last three generations (approximately 75 years), and globally a decline of >30% is strongly suspected.

There have been no assessments of *Manta* or *Mobula* populations in the WCPFC, and there are no CMMs in place that are specific to these ray species. Nevertheless, Resolution 2005-03 resolves that any non-target fish species that are not to be retained shall, to the extent practicable, be promptly released to the water unharmed (WCPFC 2005). Article 5 of the WCPFC Convention also requires that members:

- d) “assess the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem...” and
- e) “adopt measures to minimize waste, discards, catch by lost or abandoned gear, pollution originating from fishing vessels, catch of non-target species, both fish and non-fish

species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species..."

The catch of devil rays (0.010%), giant manta rays (0.009% and unidentified manta rays (0.002%) represents a very small percentage of the PNAFTF catch. 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.

Data on the overall post-release survival rates of Manta or devil rays from commercial purse seine gear are not apparently available, 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*" (reported in Lawson *et al.* 2016, but the original data do not appear to be publicly available). As noted previously, a good practice guide has been produced and distributed, though, to inform fishermen of the best techniques for releasing species including Manta and devil rays (Poisson *et al.* 2012).

3.6.2.4 False killer whale

False killer whales are found in tropical to warm temperate zones, generally in relatively deep, offshore waters of all three major oceans, although some animals occasionally move into higher latitude waters (Taylor *et al.* 2008). There is relatively little information on this species, and it is listed as Data Deficient by the IUCN.

In the PNAFTF, false killer whales made up 0.0015% of the catch. Observer data indicate that the number interactions between the PNAFTF and marine mammals (all species) has averaged 11.4 animals annually over the period 2011-2015 (PNAO, pers. comm.).

The incidental capture of cetaceans is addressed under CMM 2011-03, which prohibits CMM-flagged vessels from setting a purse seine net on a school of tuna associated with a cetacean in the high seas and exclusive economic zones of the WCPFC-CA. Also, CCMs shall require that, in the event that a cetacean is unintentionally encircled in the purse seine net, the master of the vessel shall: (a) ensure that all reasonable steps are taken to ensure its safe release. This shall include stopping the net roll and not recommencing fishing operation until the animal has been released and is no longer at risk of recapture.

Mortality rates for toothed whales, including false killer whales, have been estimated at 66%, with some indication that the animals suffering mortality were not detected in the net early enough for release to be effected, such that the animals had drowned (SPC 2010). The PNAFTF catch data and mortality estimates indicate that the PNAFTF may be responsible for the mortality of 4-6 false killer whales per year.

3.6.2.5 Other ETP species (not including seabirds)

Beyond the five species already considered by this assessment, no species considered to be ETP comprised more than 0.0005% (500 kg in 100,000 t) of the PNAFTF catch. At this extremely low level of incidence, the impact of the PNAFTF is highly likely to be all but negligible, and in some cases may mean that a single animal was captured.

Nevertheless, CMM 2008-03 is specific to the conservation and management of sea turtles, and requires a range of measures including, to the extent practicable to avoid the encirclement of turtles and to safely release all turtles, including those observed entangled in FADs. If a sea turtle is entangled in the net, the net roll should be stopped as soon as the animal comes out of the water; and the turtle should be disentangled without injuring it before resuming the net

roll. Guidance is also provided on the handling on sea turtles as part of the WCPFC CMM package⁵, while a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing species including turtles (Poisson *et al.* 2012).

As noted under Section 3.6.2.4 (False killer whale), the incidental capture of cetaceans is addressed under CMM 2011-03. This prohibits CMM-flagged vessels from setting a purse seine net on a school of tuna associated with a cetacean within the WCPFC-CA, and requires that in the event that a cetacean is unintentionally encircled in the purse seine net, the master of the vessel shall ensure that all reasonable steps are taken to ensure its safe release.

3.6.2.6 Seabirds

The PNAFTF occurs in the tropical waters of the WCPO, between 20° N and 20° S (Figure 9) with the majority of effort occurring between 5° N and 10° S; seabird abundance in this area is relatively low (Waugh *et al.* 2012 and Figure 28).

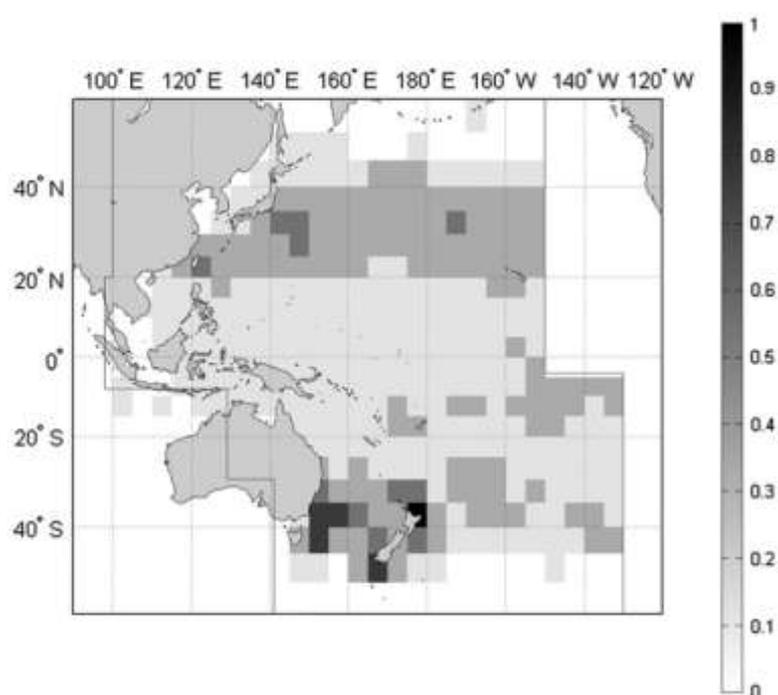


Figure 28: Annual plot of seabird numbers (individuals per 5_5 degree area) for 70 species of albatross and petrel found in the WCPFC Convention Area ($\log_{10}(\text{birds}/\text{km}^2)$). Source: (Waugh *et al.* 2012).

Malony (2005) reported that a single seabird (unidentified) was taken in 28,751 observed purse seine sets between 1994 and 2004. That report stated that the low incidence of bird captures by purse-seine operations in the WCPO indicates that the risks to the sustainability of tropical bird populations in the WCPO is negligible. More recently, WCPFC (2016g) reported that there were 0 interactions with seabirds in 1,065 observed purse seine trips in 2015, WCPFC (2016d) reported that in 845 purse seine trips in 2015 there were three interactions with seabirds, which resulted in one bird not being landed and two being released 'alive and healthy', while WCPFC (2014d) reported that there were no interactions with seabirds in purse seine trips in 2013, other than instances when birds were sighted or landed on deck, and in all instances those birds were described as 'healthy and flew away in good condition'.

A study on bycatch in purse seine fisheries in the WCPFC area has been undertaken recently (Peatman *et al.* 2017) but their report was published in July 2017, after the PNAFTF PCDR

⁵ <https://www.wcpfc.int/system/files/booklets/31/CMM%20and%20Resolutions.pdf>

was published. It is noted that the requirements for observer coverage are detailed in Section 3.7.7 of this report, and that there has been a 100% observer coverage requirement in the fishery since 1st January 2010.

3.6.3 Habitats

The PNAFTF occurs in the EEZs (i.e., not including archipelagic waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokelau. The water depth in the areas fished is very deep, usually in excess of 2000 m, and there is no possibility that the fishery would routinely contact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats. As such, habitats are not considered further, here.

3.6.4 Ecosystem

The PNAFTF occurs predominantly in the western equatorial Pacific, in an area described as the 'warm pool', a biogeochemical province that is generally delimited by a 29°C surface isotherm and a salinity front (Figure 29).

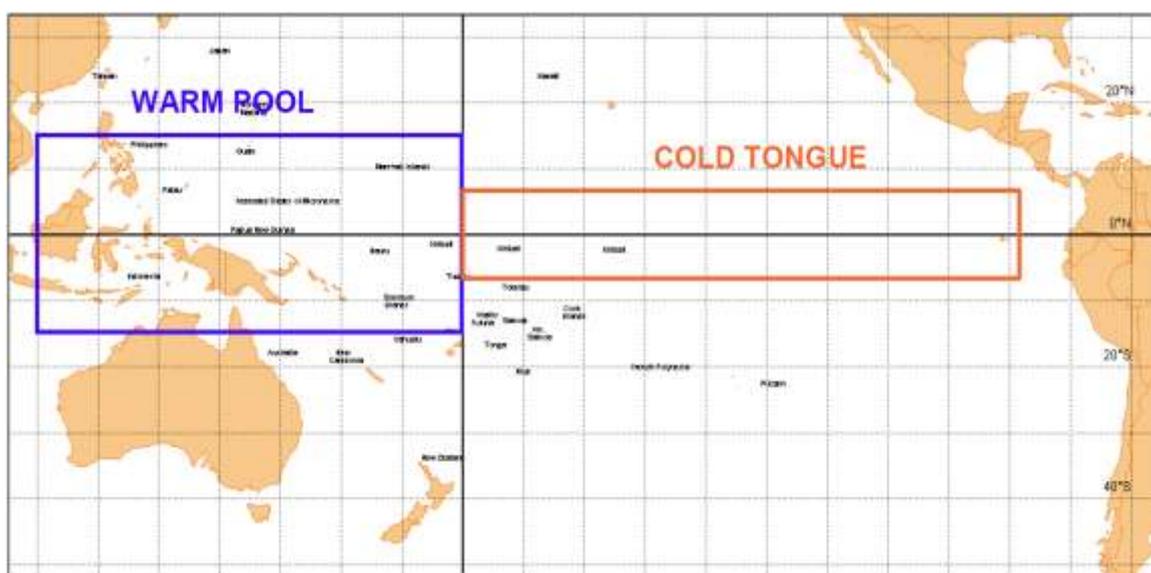


Figure 29: Spatial extent of the warm pool – cold tongue system in the Pacific Ocean. (Source: Allain *et al.* 2007).

Allain *et al.* (2007) describe the warm pool as an oligotrophic system characterized by low salinity, low nitrates, high temperature, deep thermocline, low surface chlorophyll and maximum chlorophyll located at 90m depth. Conversely, the cold tongue in the Eastern equatorial Pacific is described as an upwelling system with high salinity, high nitrates, low temperature, shallow thermocline, high surface chlorophyll and maximum chlorophyll at the surface.

The warm pool-cold tongue system is variable in terms of hydrography, nutrient availability and zonal extension in response to interannual variations such as El Niño Southern Oscillation (ENSO) but also decadal oscillations. These interactions are considerable drivers of ecosystem productivity and high order predator dynamics in the warm pool ecosystem (Lehodey *et al.* 2003).

Ocean currents in the WCPO are driven mainly by the action of the trade winds and north-west monsoon winds. The main current systems of the Pacific Ocean include two westward-

flowing currents (North and South Equatorial currents, NEC and SEC) and two eastward-flowing counter-currents (North and South Equatorial Counter Currents, NECC and SECC) (Figure 30). The NEC and SEC flow across the entire Pacific Ocean under the influence of trade winds in each hemisphere. Along the Philippine coast, the NEC bifurcates near latitude 14°N with one branch turning into the northward flowing Kuroshio Current (KC), and one turning in to the southward flowing Mindanao Current (MC), which feeds the NECC. The NECC flows between the NEC and SEC at 5–10°N, counter to the direction of the easterly trade winds.

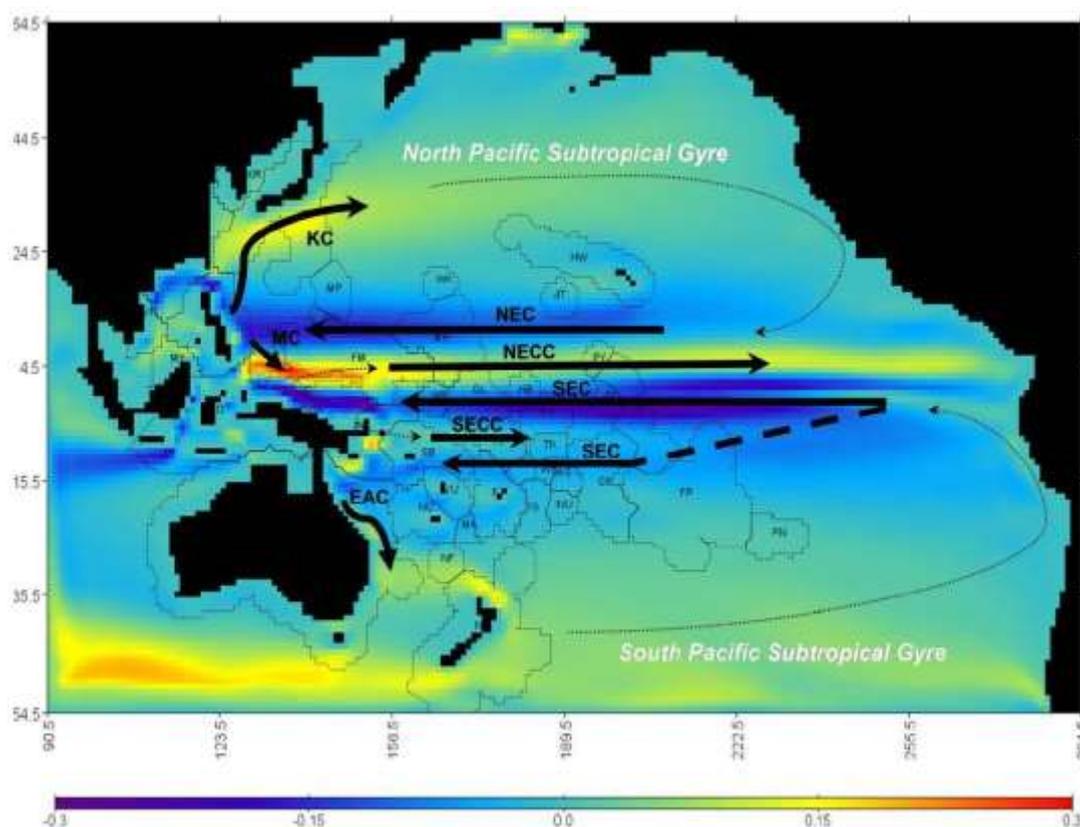


Figure 30: Surface water circulation velocity (colour scale) and direction (arrows) highlighting the major currents of the Pacific Ocean and the areas of strong contrast between west flowing and east flowing water bodies. The location of EEZ are also provided. (Source: Briand 2010).

The largest proportion of the tuna catch (mainly skipjack) in the Pacific Ocean is taken within the warm pool area. This area produces almost 80% of the tuna caught by purse-seine and other surface gears, while catches of deep water tuna by longline is more widely distributed over the tropical and sub-equatorial areas of the western Pacific Ocean (Briand 2010). Large scale movements of tropical tuna in the western central equatorial Pacific have been correlated with the position of the oceanic convergence zone, produced where the warm pool meets the cold tongue (Lehodey *et al.* 1997). This nutrient-rich zone supports high concentrations of forage fish species in a band several hundred kilometres wide along the eastern edge of the warm-water pool. Tuna follow this convergence zone seasonally to remain in waters with relatively high concentrations of prey species (Lehodey 2001) in conditions suitable for reproduction. There is considerable research effort focused on understanding changes in the ocean temperature, salinity, stratification, circulation and production in response to ENSO events (e.g., Lehodey *et al.* 1997, Lehodey *et al.* 2003) and in future in

response to global climate change (e.g., An *et al.* 2012, Ganachaud *et al.* 2012, Miller 2007, Tascheto *et al.* 2014).

Using an Ecopath and Ecosim modelling process, Allain *et al.* (2007) identified that skipjack tuna appears to have a key role in the WCPO warm pool ecosystem because of its high biomass, high production, high consumption and important cannibalism. This species was the most difficult to balance within their model; skipjack tuna consumption rate was high in order to maintain their high productivity, and because cannibalism is high, the species exerts important pressure on its juveniles. Juvenile skipjack tuna was also a major source of food for all the top predators. Consequently, in the Allain *et al.* (2007) balanced model, skipjack tuna occupied a central position in the system as a predator and prey species.

The MSC defines 'key ecosystem elements' as "*the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the UoA. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity*" (SA3.16.3, MSC 2014).

For the purposes of the reassessment of the PNAFTF, then, the ecosystem is defined as the WCPO warm pool ecosystem, and the key ecosystem elements are defined as the warm pool – cold tongue oceanographic convergence zone, and skipjack tuna as a key predator and prey species within the foodweb. With regard to the latter key ecosystem element, it is noted that Allain *et al.* (2007) modelled changes to the fisheries regime in the warm pool system, and noted that skipjack tuna appears to be a very resilient species, such that it was nearly impossible to eliminate it from the system with a top-down control (i.e., fishing), which is probably related to its high production rate and internal density-dependence induced by cannibalism.

3.7 Principle Three: Management system background

3.7.1 Fishery-specific management system

For this assessment the following key components comprise the “Fishery-Specific Management System” are shown in Figure 31 (after Miller *et al.* 2014). The hierarchical management structure under which the two UoAs fall is as follows:

1. At Global / regional level: the WCPFC is a large pelagic tuna Regional Fishery Management Organisation (RFMO) within the WCPO. The management of the WCPO is separated from the Eastern Pacific Ocean (See Figure 4.)
2. At Regional level the consolidation of, or subset of WCPFC member states comprising the Parties to Nauru Agreement (PNA) – see Figure 1.
3. At National level the individual countries comprising the members of the WCPFC (also shown in Figure 1)

This management assessment of the overall governance of the two UoAs (consolidated under Principle 3) must therefore consider all three management elements when assessing the degree to which the PNA fishery meets the MSC standard.

The common thread throughout the assessment (P3) is the overarching management framework of the WCPFC and the associated commitments of the PNA members (nations) to the management of the fishery. As the tuna fisheries target highly migratory stocks, spatial management is critical. Similarly the sovereignty of individual nations within their own EEZs also plays an important role in the management of the fisheries in the region. The PNA agreement recognises this but also to a large extent synergises the management of the purse seine fisheries in the EEZ between the PNA signatory nations – that is in all areas extending from territorial limits to the 200 nm EEZ.

This assessment must also consider some other critical management aspects viz.

- a) PNA vessels only fish between two latitudinal boundaries: 20° N and 20° S (Figure 9) with the majority of effort occurring between 5° N and 10° S.
- b) All purse seine fishing in PNA EEZ accounts for approximately 62% of skipjack tuna and 47% of yellowfin tuna catch in the WCPFC (Table 10 and Table 11).
- c) Of the total catch taken by the PNA in the WCPFC area, the unassociated (free-school) catch proportion of skipjack tuna and yellowfin tuna approximates 31% and 21% respectively (Table 10, Table 11 and Williams & Terawasi 2016);
- d) The product certified under the PNA certificate would therefore only be a subset of the total stock. When recertified, the catch would also not include catches of these two species (skipjack tuna and yellowfin tuna) in the area outside of the EEZs (but lying between the EEZs of the PNA countries) known as the “high seas pockets” which have been closed to fishing since 2008⁶ or beyond the EEZs extending into the WCPO or into the adjacent waters of neighbouring countries that are not party to the Nauru Agreement.
- e) Management considerations would also not include internal waters (as defined by the United Nations Convention on the law of the Sea (UNCLOS 1994), declared marine protected areas and other archipelagic waters.
- f) The WCPFC CMM 2013-07 also takes cognisance of the “*Conservation and management measures on the special requirements of small island developing states*”

⁶ Note: Some nations that do not fish PNA designated areas might access these high seas pockets

and territories as stated in para 15”, which recognised that actions taken by the WCPFC should be “consistent with national laws and regulations, with a view toward maintaining and increasing opportunities for employment of nationals of SIDS and territories in the Convention Area”.

The overarching management of the fisheries in the region is however still underpinned by UNCLOS and the UN Fish Stocks Agreement (UNFSA 1995) and all nations in the area (with no exceptions) abide by these two international instruments. The assessment of the PNA fishery is therefore part of a complex fishery management system that in many respects seems over-regulated due to the overlapping governance regimes. This complexity is demonstrated by Miller et. al (2014) in Figure 31, below.

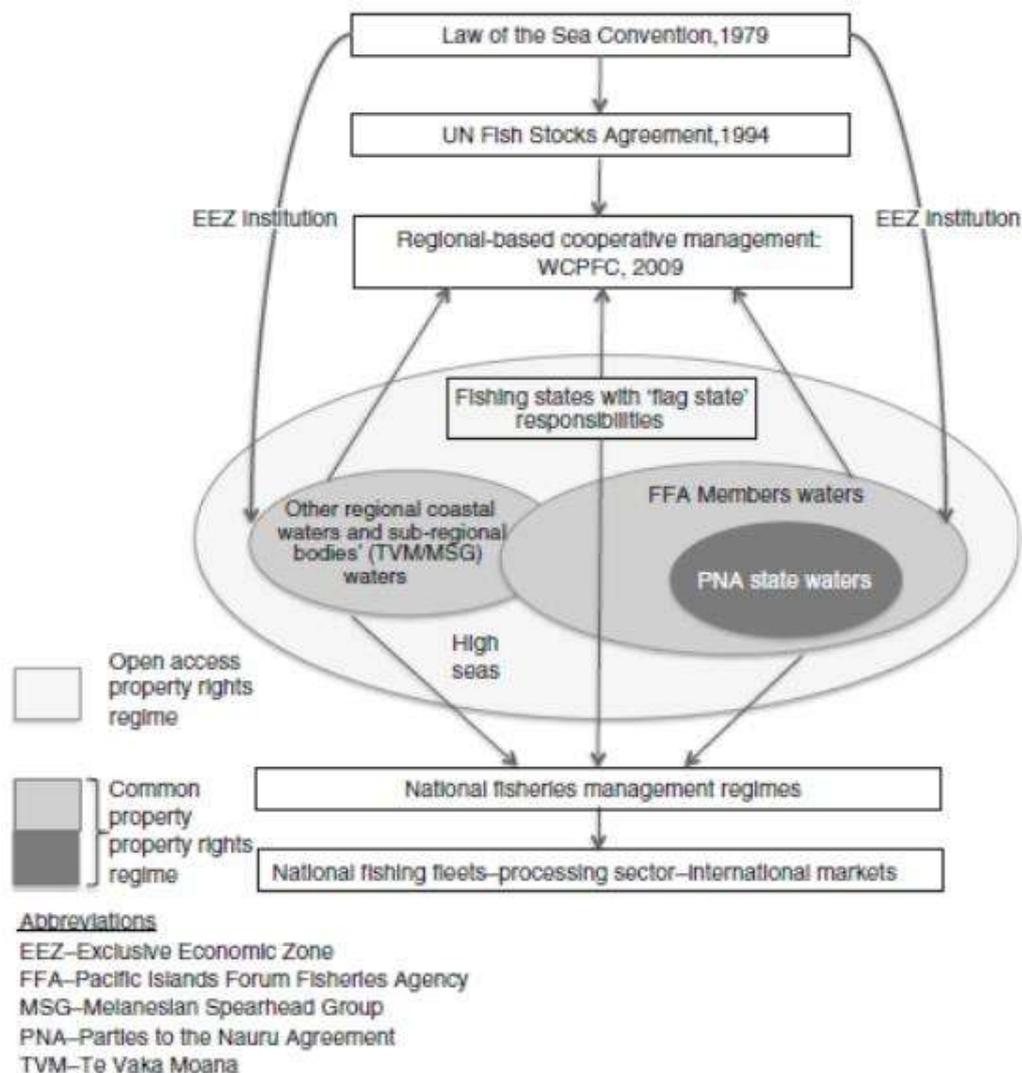


Figure 31: Institutional map of the regional and sub-regional governance regimes in the WCPO (Source: Miller *et al.* 2014, adapted from Parris 2010).

3.7.2 Area of operation of the UoAs

The PNA is not the only purse seine fishery in the region with other nations (not part of the PNA) licensing either their own or foreign purse seiners some of which have also pursued MSC certification as indicated in Section 3.8, Table 20; this includes the TriMarine, Solomon Islands and Talley’s (purse seine) fisheries. Numerous other tuna-directed fisheries also

exploit skipjack and yellowfin in the region and these impact the same stocks exploited by the PNA fishery to a lesser or greater extent, and may also have a different suite of fishery-specific management conditions (Figure 32).

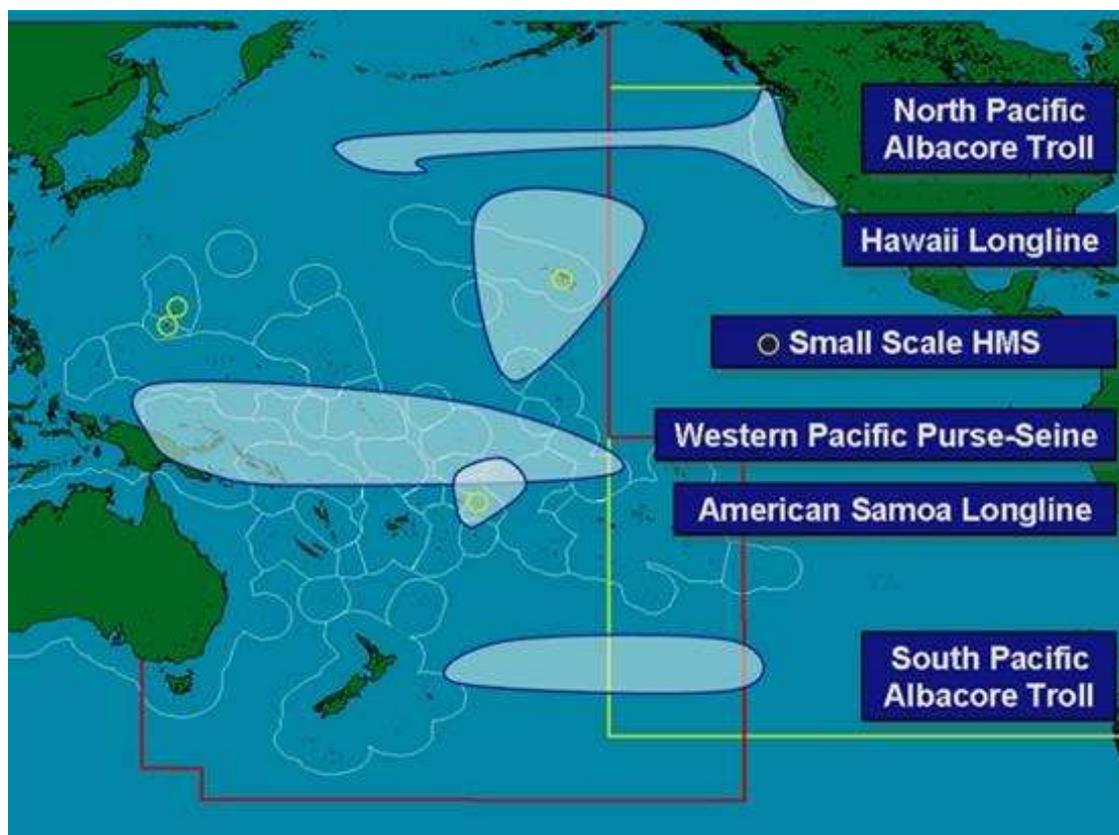


Figure 32: Approximate distribution of the purse seine fishery in the WCPO relative to other tuna-directed fisheries in the Pacific Ocean.

(Source: http://www.fpir.noaa.gov/IFD/ifd_wcpc_fisheries_map.html)

With regard to the jurisdictional categories applicable to the management system of the UoA there are three pertinent categories for consideration in this assessment:

- a) Shared stocks
- b) Straddling stocks
- c) Stocks of highly migratory species (HMS)

3.7.3 Regional organisations

As well as the PNA, there are three other key organisations pertinent to the PNA fishery – the Secretariat of the Pacific Community (SPC), the Forum Fisheries Agency, and the WCPFC. These bodies closely coordinate their activities through joint participation in regional meetings involving their members and more formal annual consultations between the Secretariats. While the SPC plays a more neutral role by providing independent scientific stock appraisal information and advice to SC members, the FFA and PNA are multilateral subregional governance bodies that over time have developed different levels of advisory and regulatory authority (Miller *et al.* 2014).

The objectives and functions are briefly outlined as they are pertinent to the fishery-specific management of the tuna fisheries in the region.

3.7.3.1 Secretariat of the Pacific Community

The SPC Oceanic Fisheries Programme (SPC-OFP) is based in Noumea, New Caledonia and provides scientific (and policy) support services to all Pacific Island countries and Territories, including members of the Forum Fisheries Agency. SPC was founded in 1947 and has 26 member countries, including all of the PNA countries (Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu [also Tokelau through the Palau Arrangement (PNA 2016e) to participate in the effort management / Vessel Day Scheme]).

SPC services include SPC-OFP provision of data and scientific stock assessment support services to WCPFC for all major tuna species. Much of the scientific data presented in this assessment have been provided by SPC.

3.7.3.2 The Pacific Islands Forum Fisheries Agency (FFA)

FFA is an expertise based organisation providing advice, technical assistance and other support to its members who make sovereign decisions about their fisheries resources, especially their tuna resources, and participate in regional decision making on tuna management through organisations such as the WCPFC. The Pacific Islands FFA was established through a treaty in 1979, with a mission “*To drive regional cooperation to create and enable the maximum long term social and economic benefit from the sustainable use of our shared offshore fishery resources.*”

FFA was established under the South Pacific Forum Fisheries Agency Convention and the governing body is the Forum Fisheries Committee (FFC). The FFA Secretariat is based in Honiara, Solomon Islands, and has seventeen members of which the following PNA countries are members: Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Solomon Islands, and Tuvalu (and Tokelau through the Palau Arrangement – PNA 2016e). The FFA is responsible (through the FFC) for updating and harmonising the Minimum Terms and Conditions (MTCs) for fisheries access throughout the Pacific region (FFA 2014). MTCs are given national effect through vessel licensing conditions or by incorporation into national law as appropriate. Note also that the PNA specifically adopted the FFC harmonised MTCs through their 1st Implementation arrangement, of which the following conditions are pertinent:

- Compliance with national laws;
- Vessels to carry Common Regional Licence Form on board at all times;
- Vessels and operators to have good standing on the FFA Vessel Register;
- Vessels to be registered on the WCPFC Record of Fishing Vessels;
- Transshipment: no purse seine vessel to transship at sea (except for group seiners), 72 hours' notice to transship in port; submit full reports on transshipping;
- Maintain and submit catch logs in Zones and on high seas;
- Reporting: each Wednesday; within a reasonable time of entry into and departure from the zone; and entry into a port;
- Observers to be allowed and assisted to undertake their duties; operators shall ensure 100% observer coverage on purse seine vessels and at least 5% on longline vessels;
- An agent to be appointed to receive and respond to any legal process;
- Vessels in transit to have fishing equipment stowed or secured for fishing;
- FFA members shall take measures through legislation or regulations and in accordance with international law to exercise powers of port State over fishing vessels in their ports;

- Operators to comply with instructions and directions given by an authorised and identified officer;
- Vessel monitoring system shall be implemented by the operator;
- Fish Aggregating Devices to be clearly marked and identified;
- Compulsory pre-fishing inspections to be carried out.

Within the overall FFA programme, the fisheries management programme is designed to assist FFA Members including PNA Members, to refine and maintain effective policy and legal frameworks for the sustainable management of the shared tuna fisheries resources of the region (Banks *et al.* 2011). This programme provides advice including:

- Appropriate legal frameworks for national tuna management, including members' obligations under various treaties and arrangements;
- Appropriate fisheries management frameworks including the incorporation of the principles of ecosystem based fisheries management;
- Effective fisheries administration, including access arrangements, licensing of foreign and domestic fishing vessels, economic implications of different management systems, and the use of new systems and technologies;
- Development and implementation of monitoring, control and surveillance systems and effective compliance regimes; and provides these services assisting members to keep abreast of best practice fisheries management models, and develop stronger and deeper regional co-operation in fisheries management;
- Providing effective oversight, and where appropriate management of a regional vessel register, vessel monitoring system, and observer program (including for US vessels);
- Servicing regional fisheries treaties and arrangements; and improving capacity in fisheries management.

Two key instruments in the implementation of this program are:

- a) The *Regional Tuna Management and Development Strategy*, and
- b) The *Regional Monitoring Control and Surveillance Strategy*.

FFA maintains databases on regional VMS, licensing, vessel register, violations and prosecutions. Overflight surveillance is provided by France, US, Australia, and New Zealand. The FFA secretariat also supports the WCPFC regional Vessel Monitoring System (VMS), providing establishment, maintenance, diagnostic and support infrastructure and services, automatic location communicator (ALC) management services and communication gateways for the Commission VMS, along with training for Commission staff.

3.7.3.3 The Western Central Pacific Fishery Commission

See : <https://www.wcpfc.int>

The Western and Central Pacific Fisheries Commission (WCPFC) was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the WCPO (The Convention) which entered into force on June 19, 2004. The Convention applies to waters of the WCPO. Members include all the signatories to the Nauru Agreement. The objective of the Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the WCPO in accordance with the 1982 United Nations Convention on the Law of the Sea and the 1995 UN Fish Stocks

Agreement. The Convention establishes a governing body known as the Commission, which is comprised of representatives from countries across coastal and fishing nations. The Commission works to create conservation and management measures, developed under the terms of the Convention, that apply to waters within the Convention Area and to the highly migratory fish stocks (i.e. tunas, billfish, marlin) throughout their range.

In their extensive analysis of the legal fishery management framework of the Western and Central Pacific Ocean (WCPO), Miller *et al* (2014) are of the view that “*the legal framework for this region does, without a doubt, provide the WCPFC with the tools to manage tuna and tuna-like species sustainably. The WCPFC, as the most recently established tuna RFMO, has incorporated some of the most progressive provisions from the international treaties in its Convention, and it has adopted numerous conservation and management measures based on the requirements of the Convention*”.

Banks *et al.* (2011) in the first assessment of the PNA fishery summarised the key elements of WCPFC Convention (WCPFC, 2000) pertinent to the PNA fishery-specific management aspects *viz.*

- It closely follows the provisions of the UNFSA (1995);
- It has the principle objective to ensure the long-term conservation and sustainable use of highly migratory fish stocks (Art 2);
- It adopts the general principles in Art 5 of the UNFSA including the application of the precautionary approach, incorporating the UNFSA Annex II Guidelines for the application of Precautionary Reference Points (Art 5);
- It incorporates the application of these principles by Parties in their cooperation under the Convention, including the application of these principles in areas under national jurisdiction, (Art 7);
- It has compatibility of measures established for the high seas and those adopted for areas under national jurisdiction (Art 8);
- It has adopted the dispute settlement provision of the UN Fish Stocks Agreement to disputes between WCPFC Members (Art 31);
- It recognises the interests of small scale and artisanal fishers, and of communities and small island states dependent for their food and livelihoods on tuna resources. (Art 30)

The roles and responsibilities of WCPFC members are therefore clearly described in the Convention, especially Articles 23 and 24, the *Commission Rules of Procedure, conservation and management measures*, and other Commission rules and decisions, including the *Rules for Scientific Data* to be provided to the Commission, and the *Rules and Procedures for Access to and Dissemination of Data Compiled by the Commission*.

In addition to member participation, the WCPFC allows participation by non-members and territories, with particular opportunities for cooperating non-Members, and allows observers to participate in meetings of the Commission and its subsidiary bodies, including the Scientific Committee, the Technical and Compliance Committee and the Finance and Administration Committee.

The PNA (inclusive of WCPFC member states) therefore complies with the WCPFC consensus-based decision-making process [details not reiterated here - see Banks *et al.* (2011) and WCPFC (2000)].

With regard to the advice and inputs, the WCPFC recognises and uses information from its subsidiary bodies, members and observers before implementing decisions, including the adoption of conservation and management measures. Scientific advice clearly identifies the extent to which different sources of information have been taken into account. These bodies include the FFA and the SPC.

Medley & Powers (2014) in their evaluation of the *Sustainability of Global Tuna Stocks Relative to Marine Stewardship Council Criteria* extensively cover each MSC performance indicator for P3 related to the WCPFC.

3.7.3.4 Parties to the Nauru Agreement

The PNA agreement has already been briefly covered in Section 3.4.2. The background to the Nauru Agreement was covered extensively in the initial certification of the PNAFTF by Banks *et al.* (2011). Only the key elements of this agreement pertinent to Principle 3 and any new information are discussed. Note also that the Nauru Agreement is also discussed under Principle 3 by Morison & McLoughlin (2016) (this is the MSC full report by SCS Global Services of the TriMarine unassociated purse seine fishery which is also discussed in harmonisation, Section 3.8).

The Nauru Agreement is a binding Treaty-level instrument considered to be a sub-regional or regional fisheries management arrangement for the purpose of the UNFSA and the WCPFC Convention (see Miller *et al.* 2014, Banks *et al.* 2011 and Morison *et al.* 2016). Note also that the formation of the PNA actually preceded the formation of the WCPFC and came into force in 1982 with the objective of member countries controlling the terms and conditions of allowing foreign fishing vessels in their EEZ. The PNA role was further strengthened in 1992 under the Palau Arrangement, which set arrangements for regular management meetings for tuna stocks and established the role and responsibilities of the PNA office (Miller *et al.* 2014). Tokelau is not a member of PNA but in 2012 Tokelau signed an agreement with the PNA countries to join the Vessel Day Scheme (VDS).

There are two key arrangements for PNA that facilitate the licensing and use of flag state vessels within the WCPFC CA – the Palua Arrangement and the Federated States of Micronesia Arrangement (FSMA). The FSMA is a reciprocal purse seine access agreement effectively requiring the commitment of vessel days to a regional pool for access by purse seine vessels flagged to participating PNA Parties. It outlines clearly the obligations of both “Parties” and other “Flag State” purse seine vessels licensed to fish by the Parties concerned. (Defined as in Article 1, “fishing vessel of the Parties” means any purse seine fishing vessel flying the flag of or based in a Party to this Arrangement). Further, under Article 2 (Objectives), the jurisdictional obligations are outlined “to allow access to the exclusive economic and fisheries zones of the Parties by purse seine fishing vessels on terms and conditions which are consistent with the provisions of the Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery”. This implies that flag states and any vessels they might license fall under the jurisdiction of the licensing flag state and therefore related obligations to the WCPFC. This would include decisions that result in measures and strategies to achieve the fishery-specific objectives, including biological reporting, compliance, observers, electronic reporting, VMS, etc., (as followed through by Flag States who enforce management measures on their own vessels - see Schedule 1 of the FSMA) as well as by coastal states within their own EEZ (as applies to the PNA). Note also that the FSMA is managed by an Administrator which is the Director of the South Pacific FFA).

The PNA secretariat is located in Majuro in the Marshall Islands. Vessels engaged in the PNAFTF effectively account for a large portion of the region’s purse seine catch (both FAD-associated and non-associated). The PNA focus is on optimising the economic benefits of their fisheries (undertaken primarily through the management and payment for “vessel days”).

In a fishery-specific management sense the agreement is synergised with the overall management of the purse seine fishery in the region as undertaken by the WCPFC. The PNA group nations must comply in all aspects to their commitments to the WCPFC including the conservation and management measures (PNA 2013b), the Technical Compliance Committee (TCC) as well as numerous other working groups and *ad hoc* groups formed by the WCPFC and other organisations (SPC, FFA etc.).

Focus areas of the PNA include the following:

- To promote economic control and participatory rights over the tuna resources in PNA water;
- Develop strategic fisheries conservation and management initiatives;
- Develop initiatives to maximise the sustained direct and indirect economic benefits to the Parties; and
- Maximise the profitability of the fishery and ancillary industries within the PNA.
- Implementing / coordinating an operating and access and management regime, which optimises revenue collection for the parties;
- Promotion of the development of the Parties' indigenous fishery sector.

The Nauru Agreement is implemented through three binding Implementing Arrangements which include:

- I. The 1st Implementing Arrangement, 1983, setting minimum licensing standards, including reporting, inspection and on-board observation, vessel identification and "good standing" on the FFA regional register (PNA 1982);
- II. The 2nd Implementing Arrangement, 1990, adding additional conditions relating to VMS, high seas reporting and a prohibition on transshipment at sea (PNA 1990);
- III. A 3rd implementing agreement (The Palau Arrangement, 1995) effecting effort control in the fishery, initially by limiting vessel numbers then evolving to a more robust system through the VDS (PNA 2010).

With regard to decision-making in the PNA, as reported by Banks *et al.* (2011), it is primarily based on consensus. Decisions and decision processes are recorded in records of PNA meetings. An annual meeting of the parties is required by the Nauru Agreement; there are PNA rules governing preparation of the agenda, circulation, reporting and who can attend. These were first set in 2005 (PNA 2005), and have been amended to account for the transfer of the Secretariat to the PNAO (PNA, 2010c). The record of proceedings is distributed to the Parties. Industry representative often form part of the Delegation. Papers are provided to attendees (Banks *et al.* 2011). All PNA documents submitted to the WCPFC were available or were provided by the PNA to the assessment team. Agendas of internal PNA meetings were also provided and if needed, the records of these meetings could have been requested (examples of meeting records were provided to the Assessment Team).

Generally the outputs from internal PNA deliberations, where pertinent, are collated in specific areas of interest in their reporting, such as for the VDS (administrators reports, WCPFC 2016d). Observer materials prepared by the PNA as well as generic reports (such as on the FIMs) and the VDS are freely available.

In the first certification report, Banks *et al.* (2011) indicated that the PNA has an intensive consultative process among Members with meetings at technical, officials and Ministerial level, with a Leader-level meeting in 2010 (PNA 2010). Member delegations to meetings

typically include industry participants. PNA also consults as PNA and as individual Parties with other WCPFC Members through the WCPFC process and other Pacific Island Countries through the FFA process. The Palau Arrangement (article 6) includes recognition of the need to cooperate with other states or international organisations, and provides for cooperation to take place through informal consultations between the Parties and other states or international organisations. Ad hoc consultations are held with most major fishing partners on request, usually on particular issues, especially the VDS. Further, the Federated States of Micronesia Arrangement (FMSA) (PNA 1994) was signed on November 30th, 1994 and came into force on September 23rd, 1995. It is a mechanism for domestic vessels of the PNA to access the fishing resources of other parties.

3.7.4 Management Measures in place pertinent to the fishery-specific management system

There are many management measures in place, mostly implemented through the WCPFC. The individual measures are too numerous to describe in full in this background summary, however the scoring rationale and specific relevance to Principle 3 and the performance indicators and the scoring issues and guideposts are provided in Appendix 1. Discussed here are the key issues for Principle 3. Note also that many measures apply only to P1 or P2 but that where Principle 3 performance indicators require cross referencing to these principles, it is covered in the scoring rationale as needed.

3.7.5 National Legislation

PNA countries have developed fisheries policies, a Fisheries Act (or similar instrument) and regulations underpinning the national legislation (Table 18, below).

Table 18: Key National fishery governance instruments of the PNA countries.

PNA Country	WCPFC Member	VDS & VMS	Observers	NPOA* for IUU	Fishery Info. System	National Fishery Legislation	EAF Risk Assmt.*	Tuna Man. Plan
FSM	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
Kiribati	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
Marshal Is.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nauru	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
Palau	Yes	Yes	Yes	-	Yes	Yes	-	***
PNG	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
Solomon Is.	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
Tuvalu	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tokelau**	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes

* NPOA – National Plan of Action

** Tokelau – only VDS relevant as not a full member of PNA

*** No explicit plan although elements incorporated into various other documents

NB – Some nations have undertaken ecological risk assessments as part of the process of adopting an Ecosystem Approach to Fisheries (EAF) – e.g., FSM, and see Tuvalu (2009). It is not a prerequisite for this assessment, but demonstrates willingness to apply EAF.

Note that to facilitate stakeholder access to the national fisheries and marine governance documents reviewed by the Assessment Team, a Drop Box has been set up by the PNAO. A request for access to the Drop Box can be made to the PNAO <http://www.pnatuna.com/>.

- 1) Kiribati: Republic of Kiribati (No 6 of 2010) – an Act for the conservation, management and development of Kiribati fisheries and control of foreign fishing and for connected purposes;

- 2) Republic of Nauru: Fisheries Act 1997 (as in force from 15 April 2011)
- 3) PNG: Ind. State of Papua New Guinea - No. 48 of 1998. Fisheries Management Act 1998,
- 4) Marshall Islands: Title 51 (Marine Resources Act – Chapter 2 – Fisheries)
- 5) Solomon Islands: Fisheries Management Act 2015 (No. 2 OF 2015)
- 6) Tokelau: Tokelau (Territorial Sea and Exclusive Economic Zone) Act 1977
- 7) Tuvalu: Marine Resources Amendment Act of 2012 – an Act to amend the Marine Resources Act 2006.
- 8) Federated States of Micronesia: Title 24 (an Act) Section 101. Sustainable development, conservation and use of the marine resources in the exclusive economic zone.
- 9) Palau: Title 27 of the Palau National Code (regulations for both foreign and domestic fishing) as well as Title 24 (environmental protection), and in the Marine Protection Act (1994).

While this legislation may differ in structure and terminology from country to country (refer also to Figure 31, outlining the regional and national relationship within the WCPO), the important aspect is that each legislation in each country covers their commitments to, for example:

- UNSFA and UNCLOS
- The precautionary approach and EAF
- Commitments to fight IUU fishing (including the EU requirements)
- Effort management (through the VDS)
- Port State Measures (although not explicitly but through port monitoring, VMS, observers, fishery information management systems, etc.)

Summarising, all PNA countries have developed (and in some cases still are improving) their National fisheries legislation, and these are mostly consistent with WCPFC and International requirements. In addition, PNA countries have developed Tuna Management Plans, deploy observers and have electronic information systems in place that are synergised with the regional requirements (see also the report by Banks *et al.*, 2011). All National Acts contain schedules with the facility for forfeiture, with fines of up to US\$ 1 Million for major offences (Banks *et al.* 2011). Note that the Acts and Titles listed below Table 18 have been made available through a Drop Box account (as the list is too extensive to provide details herein). The Drop Box can be accessed by request from the PNAO (<http://www.pnatuna.com/>). In addition to the National fishery Acts and related regulations, there are numerous amendments and other documents related to the governance of marine resources in the PNA member states. PNA member states do also have autonomy with regard to National legislation – for example Kiribati in their Marine conservation act (No 6 of 2010) allows entry of Foreign Flag vessels to fish but under strict conditions (see Article 12).

With regard to the European Union requirements for access to trade and markets, several PNA member countries have been challenged to upgrade their fishery governance standards through the issuing of 'yellow cards' under the EU programme on illegal, unreported and unregulated (IUU) fishing (EU Regulation 1005/2008). Currently, Kiribati and; e) Traceability training; f) refinement and updating of Tuna Management Plans and the development of national plans of action on IUU fishing. These ongoing initiatives are being undertaken in close cooperation with FFA and for Kiribati the Ministry of Fisheries and Marine Resource Development (MFMRD) (<https://www.mfmr.gov.ki/>) and the European Union Director

General of Maritime Affairs and Fisheries (DG MARE see https://ec.europa.eu/info/departments/maritime-affairs-and-fisheries_en).

3.7.6 Vessel Day Scheme and effort limitation

For more information on the VDS and TAE, also see Section 3.5.1.6.

The VDS (PNA 2005, with amendments in 2013, 2015 and 2016) is undoubtedly the most significant management measure in place to control fishing (purse seine) effort in the WCPO. It is not a CMM adopted by the WCPFC, but is an initiative taken by the PNA. It has evolved from its initial intent of limiting the number of vessels (to 205) operating in the waters of the PNA, to the VDS or limitation of the number of days permitted to fish by each PNA member state. Under the VDS Scheme the PNA sets the total number of days that can be fished in their combined waters and the apportionment of the total number of days between each country. The context of the introduction of the VDS is important as it underpins the management of the resource *viz*:

- a) Based on scientific advice to control overfishing;
- b) Allow new entrants to the fishery to create competition for access ;
- c) Increase PNA members' control over the fishery and increase the value of fishing access;
- d) To better manage effort creep;
- e) Fishing days are set for 12 month periods and can be allocated for up to 3-years in advance;
- f) Allocated fishing days are tradable as Party Allowable Effort (PAE).
- g) The total number of days has been set within the limits for purse seine effort in PNA EEZs adopted by the WCPFC in response to the most recent stock assessments (skipjack tuna, yellowfin tuna and bigeye tuna), taking into account any economic factors which indicate a need to constrain the TAE below the WCPFC effort limit, with the aim of optimising economic returns and use of the available resources.
- h) The calculation of TAE and PAE is outlined in Article 12 of the Palau Agreement (2015 amendment). The TAE is set and confirmed by the Parties at their previous year's annual meeting or at such other time agreed to by the Parties, having regard to
 - a. the best available scientific, economic, management and other relevant advice and information;
 - b. the provisions of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean;
 - c. the objectives of the Management Scheme; and
 - d. any submission on this issue from any party, individual or organisation.
 - e. The allocation of the TAE among the Parties is allocated amongst the Parties as their Party Allowable Effort (PAE) in the manner agreed to by the Parties

Although a PNA initiative, the effort limits of the VDS (for purse seine) in national waters have been adopted by the WCPFC through CMM 2013-01 (para 20 and 21) and subsequent measures. PNA renewed its commitment to fully implement the VDS through a formal PNA Resolution in 2013 (PNA Resolution 01-2013).

Banks *et al.* (2011) describe the VDS as: "*a very large management programme being applied by a group of developing countries of varying capacities. Taken together with the various other*

conservation and management measures, the VDS provides a central element in the management of the key target stocks and is also an important element in the regional strategy to conserve bigeye tuna”.

The objectives of the VDS have not changed from the original intent, although it has evolved and gaps are being addressed [see the VDS review – PNA 2015b). The PNA also report annually on purse seine activity under the VDS to the WCPFC including fleet size and effort (e.g., see total VDS report provided by PNA to the WCPFC e.g. WCPFC 2016a). Key aspects from the various VDS administrator reports to WCPFC suggest the effort management system is achieving its objectives. The estimate of days has been systematically applied since 2012 and include for example the following :

1. There has been no increase in vessels on the VDS Register since 2010. Note however that the inclusion of the USA fleet and Tokelau resulted in adjustments for vessel length factors. A vessel length adjustment using Vessel Monitoring System data was also applied to the 2013 TAE calculation (to the 2010 benchmark days) resulting in a decrease in days of 1.134% (661 days) giving a TAE of 44,623 days.
2. Effort in 2010 compared to 2013 was stable, with a slight decrease in estimated effort in 2013 of 43,819 logsheet days. The total VDS TAE for PNA and Tokelau was set at 46,284 days in 2013 and declined (with adjustments) to a provisional 45,881 days in 2017 (PNA, 2015);
3. The 2014 catch increased to 1,447,939 t, which was up from base catch in 2010 of 1,338,900 t and 2013 (1,319,501 t);
4. Overall catch rates for 2014 were estimated at 34 tonnes/fishing day – an increase from 30 tonnes estimated for 2013 and above the 10-year average of 29 tonnes (noting that there is some uncertainty about the 2012 and 2013 data because of apparent misreporting of effort);
5. When setting the 2014-2016 effort levels PNA (2014) used the logsheet estimate of the level of purse seine effort in PNA EEZs in 2010 (44,0337 days) which was an increase from the 2011 estimate (43,819 days);

With regard to effort creep, PNA have amended the Palau Agreement (2015) to correct for effort creep based on vessel size and non-fishing days (see Articles 4-6). However, when setting the 2014-16 VDS days the PNA acknowledge that (effort creep) was “*not explicitly considered*” so far in the setting of the TAE, but will become more important as PNA and the WCPFC move towards adoption of a Target Reference Point for skipjack to which WCPFC purse seine limits and the VDS TAE will be linked through harvest control rules”(VDSTSC3 Working Paper 1(a) of the VDS Technical and Scientific Committee meeting (3rd Meeting of 5-7 March 2014). A recent study (McClurg, 2016) concluded that “*There is no empirical evidence that effort creep is a significant current issue within the VDS.*”

The VDS outcomes for 2015 are shown in Table 19, below. Under the VDS, the TAE for 2014 and 2015 was set at a total of 44,625 VDS days; the 2016 TAE was set at 44,890 days (PNA 2015a and PNA 2016c). Please refer also to Table 6 and Table 7. Note that reference to number of vessels (Table 6) is used to illustrate effort levels as a function of the number of PNA vessels fishing in the WCPO. The principle method of controlling effort is benchmarked using the 2010 purse seine effort as measured by fishing days (Table 7), which shows the total effort days and shows that there is some inter-annual variability in fishing days but that the VDS is being effective in managing effort and is not exceeding the agreed benchmark effort levels.

Although Tokelau is not a member of PNA it is part of the VDS, though not covered by the PNA TAE as it has its own TAE (which it brings to the VDS and which is transferable with PNA members). This was initially established at 1000 days and is adjusted proportionately with

changes in the PNA TAE. The Tokelau TAE for 2015 and 2016 was 985 days, and 991 days respectively. This resulted in total TAEs of 45,610 for 2014 and 2015, and 45,881 days for 2016 (Morison & McLoughlin 2016).

Table 19: VDS administrators report, showing the 2015 breakdown of VDS days between PNA states (Source: PNA 2016b).

NB – Final PAE balance for each row = sum(black numbers) – sum(red numbers)

NB also – PNA-specific administrators report reflect slightly different numbers to some reports sent to WCPFC (but not significantly different).

PNA Country	Agreed 2015 PAE	Traded Days Amongst Parties	Days Fished In Zone,	Fished Under Regional Arrangements (FSMA, UST, Pooling, Other)	Final PAE Balance (includes overruns and other adjustments)
FSM	7,266	(91)	(3860)	(2294)	1,021
Kiribati	9,158	1820	(10588)	(339)	51
Marshal Is.	2,753	81	(436)	(2250)	148
Nauru	2,697	31	(1396)	(1197)	135
Palau	705	(664)	(38)	(3)	0
PNG	16,194	(817)	(5887)	(5381)	4,110
Solomon Is.	3,973	(917)	(1061)	(1060)	935
Tuvalu	1,879	487	(625)	(1376)	365
Sub-totals	44,625	(69)	(23891)	(13900)	6,765
Tokelau*	985	69	(168)	(848)	38
Totals	45,610	0	(24059)	(14748)	6,803

Banks *et al.* (2011) in the first certification of the fishery outlined the core strengths of the VDS (not reiterated herein), noting that the VDS is overseen and reviewed by an Inter-Party VDS Committee that reports to the annual meeting of the Parties to the Palau Arrangement. The role of the VDS Committee is to have oversight on the operational aspects of the VDS and provide recommendations as appropriate to the plenary meetings of the Parties to the Palau Arrangement, unless mandated to decide on certain operational aspects of the VDS.

Monitoring of the VDS is integrated and includes near-real time estimates through the PNA Fishery Information Management System (FIMS) (PNA 2016a, PNA 2016c, PNA 2016d) and linked to the FFA monitoring system as well as the Regional Observer Programme (ROP).

Under the Client Action Plan of the PNA fishery following MSC certification in 2012, PNA made a commitment to commission an external review of the integrity and effectiveness of the VDS. This independent review was subsequently commissioned and completed in 2014. This review (PNA 2015b) concluded that the FIMS is a well-designed information system capable of providing timely information to the VDS-members and that the system has greatly increased the transparency of the VDS operation, including vessel location, fishing day use and trade, catches etc. Critiques of the VDS system identified in this report included:

- A lack of compliance with VDS rules by individual partners
- The definition of non-fishing days (i.e. deduction of these days from the allocated PAE)
- The failure of some partners to actually close the fishery in their EEZs when their PAE has been exhausted; and

- The willingness of certain partners to undercut the minimum benchmark price in their sales of days.

Overall however, the report concluded that compliance with the VDS had improved up to 2014 and recommended (amongst other things) the following (with extracts from Morison & Mcloughlin, 2016):

- The formal adoption of a clear and simple objective for the VDS such as defining the objective of the VDS as “to maximize fee revenues from the tuna fisheries on a sustainable basis”;
- The durability of vessel day rights held by Parties to the PA should be strengthened
- Steps should be taken to substantially increase transferability. In particular, trades of the PAE to other Parties should not affect future years PAE;
- That a study be undertaken into the costs and benefits of altering VDS to a system where the fishing rights are in terms of harvest volume rather than effort;
- The current process of determining PAE be replaced with an allocation mechanism which gives long-term certainty to Parties regarding their entitlement to a share of the VDS and increased flexibility in the way in which VDs can be transferred to other Parties without a penalty in the form of reduced future PAE;
- As long as an effort-based system is retained, it is vital to continue the efforts by the PNAO to address fishing effort creep by more closely relating individual vessel performance to its calculated use of a standard VD;
- The PA be amended or provision made in a new integrated legal instrument allowing for a range of appropriate mechanisms to be integrated into the VDS to manage effort creep;
- The VDS-partners should do their utmost to exclude fishing from the high seas pockets (doughnut holes) between or bordering their EEZs;
- Free trading of VDs between partners be formally allowed within the VDS-structure
- The VDS rules should be as clear and complete as possible to minimize the room for alternative interpretation and loopholes;
- The rules and/or applicable legal instruments should have clear statements of the process of dealing with infringements as well as the type and level recompense for violations;
- A clear system of sanctions for deviations from VDS rules designed to make deviations unattractive should be set up;
- There is a considerable uncertainty about both the short run and long run optimal level of vessel days. Bio-economic analysis undertaken for the review indicates that the fee revenue maximizing vessel days could be somewhat higher than those today, however, the evidence is not very conclusive. This suggests that a more careful bio-economic study should be conducted before the current vessel day policy is altered;
- There should be a substantially enhanced role of the PNAO with added functions including facilitating trades of VD, overseeing auctions of VDs, bio-economic research, expanded VD registry.

PNA has developed a work plan to consider the key issues for implementation (PNA 2016c), and in particular to address the application of Non-Fishing Days (NFD) that is causing ‘leakage’ in the VDS (PNA 2016b).

3.7.7 Fishery Information Systems and observers

PNA have introduced a comprehensive fishery information e-reporting system as well as 100% observer coverage of their fleet. Observers are now an integral part of nearly all aspects of the management of the fishery. Guidelines are also provided on most CMMs to observers (WCPFC 2016f). PNA also trains observers specifically on MSC-related aspects through national programmes.

The PNA Chain of Custody (CoC) scheme draws on various sources of data as a progressive filter from the net to the factory where the factory's MSC CoC takes over; only once a catch is finally confirmed upon receipt ashore as not containing any FAD-associated indicator species (i.e, oceanic puffer fish, ocean triggerfish and drummer) may that catch be considered MSC certified. Until that point, the catch of free school skipjack tuna or yellowfin tuna is only considered to be eligible for MSC.

Observer data are mostly managed through the PNA Fisheries Integrated Management System (FIMS) and these data are also provided to SPC. There are numerous observer reports, training materials etc. as well as Regional Observer Programmes – see CMM 2007-01 and the 'Pacific Island Regional Fisheries Observer (PIRFO) Debriefing Policy' – PIRFO 2010, etc. Observer standards and training materials are also set at what would seem a high level and standardised in the region. The WCPFC has adopted ROP Minimum Standard Data Fields.

Examples of CMMs with other specific observer instructions include (but not exhaustive):

- Res. 2005-03: Observers are asked to record all species caught in the WCPO and all discards in accordance with the minimum standard;
- CMM 2008-03: Observers collect the standard data fields, and report on the mitigation devices and their use by an operator when handling hooked or entangled turtles;
- CMM 2009-02: FADS - Observers are asked to record all tuna discards and their condition on discarding, and to record carefully all FAD sets, on the WCPFC FAD information form or the SPC/FFA Form Gen-5 when operating in the WCPO.
- CMM 2009-06: 100% observer monitoring required where transshipment at sea is allowed, generally on the carrier vessel (para 13) Observers allocated to carry out duties on carriers wishing to transship on the high seas must note the obligations under this CMM, especially paras 13-15. Observers are asked to report all transshipment events in accordance with the minimum data fields and on the Commission transshipment forms. Observers must monitor implementation of the CMM and that quantities transshipped are consistent with quantities declared by the operator of the vessel.
- CMM 2010-06: Observers are asked to record information on vessel sightings to help to identify vessels who may be undertaking IUU fishing.
- CMM 2011-03: Observers are asked to complete all the necessary data fields noting that sets involving cetaceans should be a priority when reporting; if caught in the net deliberately or accidentally, the life status on being caught and released (dead or alive) must be recorded by observers.
- CMM 2011-04 Observers are asked to record the number of releases of oceanic whitetip sharks caught in the Convention Area, including the life status on being caught and the status upon release (dead or alive) etc.;
- CMM 2012-04: prohibits purse seine vessel operators from setting on a school of tuna associated with a whale shark. This CMM explains what procedures must be carried out when a whale shark is caught by a purse seine vessel and requires countries to

annually report on all instances where whale sharks have been encircled by purse seine nets. Observers are asked to record all the necessary details when a whale shark is caught or sighted in a set.

- CMM 2013-05: Observers have the right to inspect this daily vessel log, so as to get information required for ROP forms. Observers are asked to note whether the vessel operator maintains this log on a daily basis.
- CMM 2013-08: Observers are asked to record the number of releases of silky sharks caught in the Convention Area, including the life status on being caught and the status upon release (dead or alive);
- CMM 2015-03: Observers are asked to record all mitigation measures used, including photos of mitigation structures, and especially important photos of any bird species caught. Observer data will be used to assist CCM's in filling out their part 1 reports to the Commission.

With regard to the data, FIMS has been introduced as well as a 'PNA - Industry Integration PNA FIMS User Guide'. (PNA 2015d, PNA 2015e, PNA 2015f) The information system is electronic and provides near real-time monitoring of the PNA purse seine fleet, and data can be filtered by day, location/zone, catch and real time observer reporting⁷.

With regard to verification of catches, it is clear that no declaration by the captain or observer's report can be 100% accurate. However, in addition to these data sources, landings are permitted only at designated landing sites, and independent monitors are required to be present for landings; they are responsible for checking and tallying landings data. These various reports (from Observers, skippers declarations and landings) serve as progressive filters providing cross checks. Observer data is known to have flaws and invariably require a quality assurance approach, particularly when using data for stock assessment and other scientific applications. This is expected to render proportions of observer data unusable or requiring verification⁸. Observer data bases have cross checks that verify, for example, vessel positions, species identification, and mass balances to check for consistency.

3.7.8 Other Key Management-Specific Measures

The Tropical Tuna CMMs, CMM 2013-01 (updated by CMMs 2014-01 and 2015-01) are complex measures which impose purse seine effort limits and longline catch limits, closures relating to purse seine fishing using FADs, and measures relating to observer coverage, development of FAD management plans, catch retention, and juvenile tuna catch mitigation research; these measures have been implemented progressively

The FAD closure was initially for 3 months but, since CMM 2013-01, the FAD closure has been extended to 4 months from 1st July to 31st October, and in 2017 there will be a 12 month FAD closure in the high seas. The detailed terms of the FAD closure are set out in CMM 2009-02 which defines a FAD as: "*Any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with*".

CMM 2009-02 also specifies that during the FAD-closure period "*no purse seine vessel shall conduct any part of a set within one nautical mile of a FAD. That is, at no time may the vessel*

⁷ Data provided by SPC mostly for the determination of catch composition used in P2 reflect this.

⁸ Williams *et al.*, 2016, and Japp pers comm from personal experience working with observer data and observe programmes globally.

or any of its fishing gear or tenders be located within one nautical mile of a FAD while a set is being conducted.”

3.7.9 Compliance

The Technical Compliance Committee (TCC) is the primary group responsible to the WCPFC for reporting and dealing with compliance with the WCPFC CMMs and allied measures. The PNA countries are represented at TCC meetings and annual reports from the TCC are produced. No compliance issues in the most recent reports relating to the PNA were identified, nor references for any Party for compliance review. On a country to country assessment basis, purse seine non-compliance was not found (this does not exclude the likelihood that there were non-compliances, but suggests that there is little or no evidence to support systematic non-compliance).

The WCPFC TCC report of 2015 (WCPFC 2015a) reported on the implementation status of WCPFC Compliance Monitoring Scheme that was started in 2011. The purpose of the WCPFC Compliance Monitoring Scheme is outlined in para. 1 of CMM 2014-07, viz: *“to ensure that Members, Cooperating Non-Members and Participating Territories (CCMs) implement and comply with obligations arising under the Convention and conservation and management measures (CMMs) adopted by the Commission.”*

The CMS is designed to:

- i. Assess CCMs' compliance with their obligations;
- ii. Identify areas in which technical assistance or capacity building may be needed to assist CCMs to attain compliance;
- iii. Identify aspects of conservation and management measures which may require refinement or amendment for effective implementation;
- iv. Respond to non-compliance through remedial options that include a range of possible responses that take account of the reason for and degree of non-compliance, and include cooperative capacity-building initiatives and, in case of serious non-compliance, such penalties and other actions as may be necessary and appropriate to promote compliance with CMMs and other Commission obligations; and
- v. Monitor and resolve outstanding instances of non-compliance.

The TCC annual reports (e.g., TCC 2016) provide detailed breakdowns of the WCPFC compliance performance, referencing all pertinent CMMs and any other issues raised. The CMS covers the following elements (amongst others):

- CMM 2004-03: Specifications for the markings and identification of fishing vessels
- CMM 2006-07: Conservation and Management Measure for the regional observer programme
- CMM 2006-08: Western and Central Pacific Fisheries Commission boarding and inspection procedures
- CMM 2009-06: Conservation and Management Measure on the regulation of transshipment
- CMM 2009-10: Conservation and Management Measure to monitor landings of purse seine vessels at ports so as to ensure reliable catch data by species
- CMM 2009-11: Cooperating Non-members

- CMM 2010-06: Conservation and Management Measure to establish a list of vessels presumed to have carried out illegal, unreported and unregulated fishing activities in the WCPO (replaced by later CMM)
- CMM 2013-10: WCPFC record of fishing vessels and authorization to fish
- CMM 2014-02: Conservation and Management Measure Commission VMS
- CMM 2015-05: Conservation and Management Measure for charter notification scheme

The CMS programme includes the observer and VMS programmes as well as conservation and management measures for Port State Controls and a Catch Documentation Scheme.

MRAG (2009) undertook an assessment of IUU risks throughout the WCPO fleet. MCS capacity was generally acknowledged to be moderate to good, and IUU activity was considered to be detected usually. In a follow-up study on IUU fishing, in a detailed (independent) report entitled “*Towards the Quantification of IUU Fishing in the Pacific Islands Region*” MRAG Asia Pacific (2016) concluded that “*Of the three main sectors assessed, estimated volume of IUU product was highest in the purse seine fishery, accounting for 70% of overall volume. Estimated IUU volumes in this sector were largely driven by reporting violations and illegal FAD fishing during the closure period*”.

This report further concludes that: “*Unlicensed fishing accounted for only 4% of the estimated overall volume. Amongst the main target species, skipjack accounted for the largest proportion of total estimated IUU volume (33%), but a lesser proportion of the total estimated ex-vessel value (18%). The total estimated IUU volume of SKJ (100,730 t) equated to around 5.1% of estimated total SKJ catch in the WCPFC-CA in 2014. Yellowfin accounted for the next highest volume (96,126t), making up 31% of the total estimated IUU volume, and 27% of the ex-vessel value. The total estimated IUU volume of YFT equated to around 15.8% of the estimated total catch of YFT in the WCP-CA during 2014. Much of this is driven by estimates of species misreporting in the purse seine fishery which is subject to 100% observer coverage, and therefore may result in little unaccounted for catch.*”

No definitive non-compliance issues could be identified relating to the PNA, which has stringent observer coverage and reporting. The MRAG (2016) report also states that “*For a small number of risks good quantitative information was available. However, for the majority of risks the level of information available was very limited, reflecting the secretive nature of IUU fishing*”.

This would seem typical of compliance in fisheries globally. Further discussion on compliance is provided by Banks *et al.* (2011), including the WCPFC commitment to the application of the Precautionary Approach (Article 6) as well as CMM 2005-01 and CMM 2006-01 related to measures to reduce fishing mortality on bigeye tuna and yellowfin tuna.

At the national level, all parties to the PNA agreement have comprehensive legislation in place relating to the management of their marine resources. By way of example, the FSM Congressional Bill No 12-57 has exhaustive sections relating to permit conditions and compliance for licensed fishing vessels. The Nauru Fisheries Act of 1997, in force from April 2011, Parts 3 – 5, deal extensively with fisheries compliance and mechanisms for handling “offences”. The Solomons Fisheries Management Act of 2015, Part 8, outlines in detail monitoring, control and surveillance procedures. For Palau, the Ministry of Natural Resources, Environment and Tourism has comprehensive legislation relating to fisheries compliance, and for PNG the Fisheries Amendment Act (2015), Section 40b, gives effect to international conservation and management measures. These examples demonstrate, inclusive of all other parties, that at a National level the PNA have Fishery and or Marine Acts/Titles and

Regulations outlining monitoring, control and surveillance measures. Further these instruments are consistent with international instruments e.g. UNFSA and conservation measures including at the Regional level.

Evaluation Procedure

3.8 Harmonised Fishery Assessment

The MSC has detailed an approach to addressing the assessment of overlapping fisheries, where ‘overlapping fisheries’ are defined as ‘Two or more fisheries which require assessment of some, or all, of the same aspects of MSC Principles 1, 2 and/or 3 within their respective units of certification’ (MSC 2015). This approach includes that:

“PB3.1 CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessments.

PB3.2 Where assessments of two or more fisheries occur at the same time, CABs shall coordinate their assessments so as to make sure that harmonisation of important steps in the assessment and subsequent surveillance audits takes place and that outcomes are harmonised.

PB3.3 Where a fishery under assessment overlaps with a certified fishery, CABs shall coordinate their assessments so as to make sure that key assessment products and outcomes are harmonised.

PB3.3.3 The team shall explain and justify any difference in the scores in the scoring rationale for relevant PIs.”

At the time of writing (January 2017), there are seven fisheries targeting skipjack tuna and/or yellowfin tuna in the Western Pacific Ocean that are either certified or are under assessment; these are listed in Table 20, below:

Table 20: MSC fisheries for skipjack tuna and/or yellowfin tuna considered for harmonisation.

	Fishery	Target species	Fishing area	MSC CR	Status
#1	Japanese pole and line skipjack and albacore tuna	• Skipjack tuna (+ Albacore tuna)	WCPO	v.1.3	Certified (October 2016)
#2	Solomon Islands skipjack and yellowfin tuna purse seine and pole and line	• Skipjack tuna • Yellowfin tuna	WCPO	v.1.3	Certified (July 2016)
#3	Tri Marine Western and Central Pacific skipjack and yellowfin tuna	• Skipjack tuna • Yellowfin tuna	WCPO	v.1.3	Certified (June 2016)
#4	Talley’s New Zealand skipjack tuna purse seine	• Skipjack tuna	Southwest Pacific	v.2.0	Certified (August 2017)
#5	Walker Seafood Australian albacore, yellowfin tuna and swordfish longline	• Yellowfin tuna (+ Albacore tuna + Swordfish)	Southwest Pacific	v.1.3	Certified (August 2015)
#6	American Samoa EEZ albacore and yellowfin longline fishery	• Yellowfin tuna (+ Albacore tuna)	Southwest Pacific	v.2.0	In assessment
#7	French Polynesia albacore and yellowfin longline fishery	• Yellowfin tuna (+ Albacore tuna)	WCPO	v.2.0	In assessment

A brief explanation for any differences of ≥ 15 in the scores between the PNAFTF and the other overlapping tuna fisheries is provided in Table 21 (Principle 1 – skipjack tuna), Table 22 (Principle 1 – yellowfin tuna), Table 23 (Principle 2) and Table 24 (Principle 3). It is noted that

a difference of 5-10 in a score may be due to interpretation of the assessment teams, and has not been commented on unless it resulted in a condition being set on only one of the fisheries.

Regarding overlapping fisheries, GPB3 (MSC 2014) states: “*Harmonisation should always be conducted for overlapping fisheries in the scoring of Principle 1, due to the requirement for the assessment to focus on the full extent of the stock and all fishery impacts upon it. Harmonisation may also sometimes be required in Principle 2 and in Principle 3.*”

For Principle 1, the PNAFTF therefore overlaps with fisheries 1-4 listed in Table 20 for skipjack tuna, and overlaps with fisheries 2, 3 and 5-7 for yellowfin tuna (although, to date, there is no scoring information available for fishery 6 or 7).

It is noted that a Principle 1 pilot harmonisation process was undertaken for WCPFC tuna species, commencing in January 2016 and culminating in a meeting in Hong Kong in April 2016⁹. The PNAFTF Assessment Team is required to take account of the findings of the meeting. No final report from the Hong Kong meeting is available on the MSC website. A report of the meeting was provided to participants and was available to the PNA assessment team. This report states that it is a “...working document prepared by all involved assessors to inform and guide CAB teams as they assess tuna fisheries in the WCPFC area”. It was agreed by the MSC that further harmonisation discussions would be initiated if new information became available.

Table 21: Principle 1 (skipjack tuna) scores for the PNAFTF and other overlapping tuna fisheries.
– Overlapping fisheries as listed in Table 20.
– Yellow highlighted cells indicate where there was a difference in score of ≥15 between the PNAFTF and the other overlapping tuna fisheries for skipjack tuna.

PI	PNAFTF	#1 Japan P&L	#2 Solomon Islands	#3 Tri Marine	#4 Talley's*	Rationale for ≥15 differences in scoring
1.1.1	100	100	100	100	100	N/A – harmonisation undertaken through Hong Kong process described above.
1.1.2	n/a	n/a	n/a	n/a	n/a	
1.2.1	70	70	70	70	70	
1.2.2	60	60	60	60	60	
1.2.3	90	90	90	90	90	
1.2.4	95	95	95	95	95	

* assessed subsequent to Hong Kong meeting

Table 22: Principle 1 (yellowfin tuna) scores for the PNAFTF and other overlapping tuna fisheries.
– Overlapping fisheries as listed in Table 20.
– Yellow highlighted cells indicate where there was a difference in score of ≥15 between the PNAFTF and the other overlapping tuna fisheries for skipjack tuna.

PI	PNAFTF	#2 Solomon Islands	#3 Tri Marine	#5 Walker Seafood	#6 Am'rica Samoa	#7 French Polyn'	Rationale for ≥15 differences in scoring
1.1.1	90	90	90	90	No scores published as of January 2017	No scores published as of January 2017	N/A – harmonisation undertaken through Hong Kong process described above.
1.1.2	n/a	n/a	n/a	n/a			
1.2.1	70	70	70	70			
1.2.2	60	60	60	65			
1.2.3	90	90	90	80			
1.2.4	95	95	95	100			

⁹ <file:///C:/Users/admin01/Downloads/MSC-pilot-processes-for-harmonisation.pdf>

Box 1: Overview of harvest strategy for skipjack tuna and harmonisation of PI 1.2.1a scores

The operational harvest strategy for WCPO skipjack has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. CMM 2015-01 and its predecessors are fundamental in the current harvest strategy. The primary objective of CMM 2015-01 is that compatible measures for the high seas and EEZs are implemented “...so that bigeye, yellowfin and skipjack tuna stocks are, at a minimum, maintained at levels capable of producing their maximum sustainable yield as qualified by relevant environmental and economic factors including the special requirements of developing States in the Convention Area as expressed by Article 5 of the Convention.”

To meet the SG80 score, evidence is needed that the harvest strategy is responsive to the state of the stock and the elements work together. The current harvest strategy is not yet formalised by the WCPFC but incorporates a range of elements considered at PIs 1.2.2, 1.2.3, and 1.2.4. Harvest control rules have not yet been formally adopted by WCPFC, however there is a process underway (CMM 2014-06 and its work plan) and there has been extensive preparatory work through several Management Objectives Workshops. The PNA has nevertheless been pro-active in implementing measures to manage harvesting. Given that the PNA purse seine fishery accounts for almost 60% of the skipjack tuna catch from the WCPO, its actions have played a major role in the development of a WCPFC harvest strategy. Developments through PNA and WCPFC include:

- The PNA Vessel Day Scheme (VDS), a major component of the overall harvest strategy for skipjack tuna. It determines Total Allowable Effort (TAE) and Party Allocations of Effort (PAE) for PNA countries. An independent review of the VDS was undertaken in 2014 (PNA 2015b). The VDS has been progressively improved over time to address identified shortcomings (e.g. rollover of days between years and over-runs of some national PAEs). Initially, The TAE established a limit on the total number of fishing days that could be fished in PNA members' EEZs. The scope of the VDS has been expanded and now includes an allowance for Tokelau working with PNA. The US purse seine fleet also came under the VDS during 2013. The developments of the VDS and CMM 2015-01 and its predecessors now mean that an effort cap for purse seine fishing has been adopted across the WCPO.
- The skipjack harvest strategy includes appropriate monitoring and assessment, as well as target and limit reference points, and current stock status provides evidence that the elements of the harvest strategy work together towards achieving stock management objectives.
- The “responsiveness” to the state of the stock is less obvious given the current status of the stock (i.e., $F_{2008-11}/F_{MSY}=0.61$, $SB_{2015}/SB_{MSY} = 2.56$) which has meant that effort reductions have not been required to date. However, the initiatives by the PNA to develop the VDS and the response of WCPFC in adopting updated CMMs for skipjack tuna indicate a level of responsiveness adequate to meet SG80 requirements. Importantly, the adoption of effort limits provides leverage to address the need for further strengthening of management when and if required through the implementation of harvest control rules.
- PNA (2016a), paragraphs 21 and 22, provides evidence that the PNA reviews the TAE annually, given changes in scientific advice on the effective effort level in 2010 (to which effort is capped) and changes in fleet structure. While the annual variations in TAE are small they do illustrate that PNA has the ability to respond to both scientific advice and fleet dynamics, and does so following annual review.

In addition, tools adopted by WCPFC include FAD closures; high seas closures; and a discard ban in purse seine fisheries. Given the above, the team concluded that the harvest strategy is responsive and the elements of the harvest strategy work together to achieve the stock management objectives, meeting SG80. The original PNA skipjack assessment (Banks *et al.* 2011) also scored the fishery as meeting the SG80 level, indicating that “the Commission responded to the change in the results of the skipjack assessment and the more cautionary tone of the scientific advice in 2010 by deciding to address the management of skipjack explicitly in the preparation of a CMM to replace CMM 2008-01 beyond 2011.” Overall, the original score for PI 1.2.1 for the PNA fishery was 80. Other skipjack fisheries considered at the Hong Kong meeting (see Table 15) have considered that SG80 is not met for 1.2.1a and have awarded an overall score of 70 for PI 1.2.1, indicating that the PNA score should align with this score. The basis for this is predominantly that participants consider 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 via the Hong Kong harmonisation that for the WCPFC skipjack tuna fisheries, including those under the PNA's VDS, 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, hence it was concluded that a score of 70 is warranted for PI 1.2.1 and a condition is required. The rationales for this conclusion are contained in relevant fishery reports which can be found on the MSC website.

Further harmonisation discussions took place in October and November 2016 with other CABs involved in the Hong Kong meeting and which had undertaken the MSC assessment of other WCPO skipjack fisheries for which scoring issue 1.2.1a had been found to meet SG60 requirements but not SG80. Whilst the reassessment team considered that SG80 requirements were met by the PNA fishery, other CABs did not agree and indicated that there was insufficient new information to change the findings of the Hong Kong meeting. 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), scoring issue 1.2.1a is scored as having met SG60 requirements but not SG80. A Condition of Certification (#1) is set on UoA 1 of the PNAFTF, which is the same Condition that has been set or will be set at the next audit on every other WCPO MSC skipjack tuna fishery.

For Principle 2, it is noted that GSA3.1.9 (MSC 2014) states: “To ensure that the cumulative impact of all MSC fisheries is within sustainable limits, a UoA assessed against standard v2.0 may need to consider the combined impact of itself and other overlapping UoAs. This determination will include other UoAs assessed against earlier versions of the CR (e.g., v1.3).”, but the MSC Interpretations log¹⁰ has clarified that “...the first two paragraphs of guidance on ‘MSC UoAs and the assessment of cumulative impacts’ in Table GSA3 may be taken as a suggestion and does not need to be implemented. The expectation would be that fisheries assessed against v2.0 of the standard shall only be required to consider cumulative impacts with other v2.0 fisheries”.

As such, the PNAFTF is considered to overlap with fisheries 2-4 for Principle 2, and cumulative impacts are considered specifically only for fishery 4 (Talley’s New Zealand skipjack tuna purse seine). The other tuna fisheries listed are v.1.3 and are undertaken with different gears or in different areas to the PNAFTF, such that Principle 2 scoring would not necessarily be expected to be similar. For Principle 3, the PNAFTF is considered to overlap to some extent with all fisheries in listed in Table 20.

Table 23: Principle 2 scores for the PNAFTF and other overlapping tuna fisheries.
 – Overlapping fisheries as listed in Table 20.
 – Yellow highlighted cells indicate where there was a difference in score of ≥15 between the PNAFTF and the other overlapping tuna fisheries for skipjack tuna.

PI	PNAFTF	#1 Japan P&L	#2 Solomon Islands	#3 Tri Marine	#4 Talley’s	Rationale for ≥15 differences in scoring
2.1.1	100	80	80	80	100	NB – Consideration of PIs 2.1.x (retained species) under CRv1.3 is not necessarily the same as consideration of PI 2.1.x (primary species) under CRv.2.0. #1: Japanese anchovy was scored as a bait species. #2: ‘Retained’ species included species for which there is little information on status. #3: Bigeye scored as a main retained species. Not likely to be within biologically based limits, so score limited to 80.
2.1.2	100	90	85	75	95	#2: ‘Retained’ species included species for which there is considered to be no direct management. Can’t score >85 if not a ‘strategy’ in place for Sla. #3: Concern over the level of reporting of shark finning and lack of any clear sanctions for reported cases. Shark finning is considered under PI 2.2.2 for the PNAFTF.
2.1.3	100	85	85	85	100	#1: No scientific observers on Japanese P & L vessels. #2: ‘Retained’ species included species for which there is little information on status. #3: ‘Retained’ species included species for which there is little information on status.

¹⁰ <http://msc-info.accreditation-services.com/questions/assessing-p2-species-cumulatively-between-v2-0-and-1-3-fisheries/>

PI	PNAFTF	#1 Japan P&L	#2 Solomon Islands	#3 Tri Marine	#4 Talley's	Rationale for ≥15 differences in scoring
2.2.1	100	100	80	80	90	NB – Consideration of bycatch species under CRv1.3, Pls 2.2.x is not necessarily the same as consideration of secondary species under CRv.2.0, PI 2.2.x. #2: Silky shark considered as a bycatch species – not within biologically-based limits. #3: 'Bycatch' species included species for which there is little information on status.
2.2.2	85	100	85	85	90	#1: There are no bycatch species, so scores 100 by default.
2.2.3	90	100	90	85	100	N/A
2.3.1	85	100	95	95	80	#1: The Japanese fishery uses pole & line, which means no ETP species are caught.
2.3.2	75	100	90	80	75	#1: The Japanese fishery uses pole & line, which means no ETP species are caught. #2: Solomon Islands is a Non-Party to the CMS, so Manta and Mobula are not ETP species for their assessment. #3: Measures for Manta and Mobula rays not discussed in scoring.
2.3.3	85	100	90	80	80	#1: The Japanese fishery uses pole & line gear – considered to be no ETP species interactions.
2.4.1	100	100	100	100	100	N/A
2.4.2	100	100	100	100	95	N/A
2.4.3	100	100	100	100	100	N/A
2.5.1	100	100	100	80	100	#3: Similar evidence considered, but a lower (but still passing) score given.
2.5.2	90	100	90	85	85	N/A
2.5.3	100	100	90	90	90	N/A

Table 24: Principle 3 scores for the PNAFTF and other overlapping tuna fisheries.
– Overlapping fisheries as listed in Table 20.
– Yellow highlighted cells indicate where there was a difference in score of ≥15 between the PNAFTF and the other overlapping tuna fisheries for skipjack tuna.

PI	PNAFTF	#1 Japan P&L	#2 Solomon Islands	#3 Tri marine	#4 Talley's	#5 Walker Seafood	#6 Am'rica Samoa	#7 French Polyn'	Rationale for ≥15 differences in scoring
3.1.1	95	95	85	80	90	85	No scores published as of January 2017	No scores published as of January 2017	#3: Considered that the FSMA does not have laws aligning with international/regional obligations, and that WCPFC does not have mechanisms formally committing to legal rights at the WCPFC level.
3.1.2	85	95	95	90	90	85			N/A
3.1.3	90	90	90	90	90	90			N/A
3.2.1	90	90	90	90	90	90			N/A

PI	PNAFTF	#1 Japan P&L	#2 Solomon Islands	#3 Tri marine	#4 Talley's	#5 Walker Seafood	#6 Am'rica Samoa	#7 French Polyn'	Rationale for ≥15 differences in scoring
3.2.2	80	85	75	90	85	80			#2: Considered to be no evidence that explanations are available to the public for any actions or lack of action taken by the Solomon Islands' managers.
3.2.3	80	85	85	75	80	100			#3: Considered to be lack of transparency in WCPFC dealing with non-compliance. #5: 5.7% observer coverage and low number of infringements or number of vessels on WCPFC IUU list considered to be evidence that SG 100 is met.
3.2.4	90	80	80	80	80	80			NB – There is no equivalent of CRv.1.3, PI 3.2.4 under CRv.2.0. However, CRv.1.3, PI 3.2.5 is the same as CRv.2.0, PI 3.2.4.

3.9 Previous assessments

The PNAFTF skipjack tuna fishery first entered the MSC assessment process in April 2010, and was certified in December 2011 (https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/pna_western_central_pacific_tuna_unassociated_nonFAD_purseine/skipjack-assessment-downloads – Banks *et al.* 2011). The assessment was undertaken against a FAM v.2 assessment, and was subject to extensive stakeholder comment. The fishery was certified after an Objection procedure.

The PNAFTF yellowfin tuna fishery was certified through the expedited P1 assessment process in February 2016 (https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/pna_western_central_pacific_tuna_unassociated_nonFAD_purseine/copy_of_skipjack-assessment-downloads – Daume & Morison 2016a). This expedited assessment was undertaken against a CRv.1.3 assessment tree, modified for PI 1.2.2 (Harvest control rules) after accounting for the MSC Notice, “Scoring of ‘available’ HCRs in CRv1.3 fisheries”, issued on 24th November 2014 and further interpretation provided by the MSC on 17th December 2015. As such, PI 1.2.2, Sla was scored using the CR v2.0 provisions for SG60 scoring. The certification of this fishery was also subject to stakeholder comment, but not to an Objection procedure.

Following the most recent audit of these fisheries (Daume & Morison 2016b), there was one open condition remaining on the skipjack tuna fishery (against PI 1.2.2), and two open conditions remaining on the yellowfin tuna fishery (against PI 1.2.1 and PI 1.2.2).

The CABs, through the Harmonisation pilot, have scored this Skipjack PI 1.2.2 for all WCPFC stocks using the ‘available’ language in v2.0. Following information provided by the MSC in a November 2014 CAB notification, and through the interpretation log, this condition can

therefore be carried over into reassessment as the reassessment is being done against v2.0 fully (as per the Nov 2014 notification) and the 'available' criteria remain ($B > B_{MSY}$).

Conditions 3 & 4 (PIs 1.2.1 and PI 1.2.2) for the Yellowfin UoA were set during the expedited assessment (certified February 2016), which means these conditions, although set during the previous certification period, are now on a revised timeline and continue into this new certification period in line with other conditions set.

3.10 Assessment methodologies

In conducting this assessment, the FCR v.2.0 (MSC 2014) and the MSC Full Assessment reporting template as per v.2.0 (02/12/15) were used.

The risk-based framework (RBF) was not used in the assessment.

3.11 Site visit

Notifications of each key step in the assessment process were provided to the MSC, uploaded by the MSC to their website, and advertised through the MSC's bi-weekly 'Fisheries Update'. Known stakeholders were also contacted by e-mail and advised of the key steps. The known stakeholders were asked to forward the notifications on to any other person who they considered to be a stakeholder but who was not listed in the group e-mail, or to send the Lead Assessor the other person's details so that they could be contacted.

The site visit was conducted in Brisbane, Australia, with the team being available for meetings with stakeholders from the 5th September to the 8th September, 2016. Notification of the site visit was made through the MSC's Fisheries Update and uploaded to the MSC's website on the 4th August 2016: (https://fisheries.msc.org/en/fisheries/pna-western-and-central-pacific-skipjack-and-yellowfin-unassociated-non-fad-set-tuna-purse-seine/@_@view)

A brief description of the meetings held with stakeholders during the site visit is provided in Table 25, below; the attendees are listed, together with the topics covered during the discussions. More details and notes of the meetings with Organización de Productores Asociados de Grandes Atuneros Congleadores (OPAGAC) and the International Pole and Line Foundation (IPNLF) are provided as Appendix 3.

Table 25: Summary of stakeholder meetings held.

Date	Attending	Organisation	Issues Discussed
5 th September 2016	Rob Blyth-Skyrme	Acoura Marine Ltd.	<ul style="list-style-type: none"> • Reassessment process. • UoAs. • Data and information specific to Principle 1
	Kevin McLoughlin	Acoura Marine Ltd.	
	Dave Japp	Acoura Marine Ltd.	
	Maurice Brownjohn	PNAO	
	Les Clark	PNAO	
	Sangaa Clark	PNAO	
	Transform Aqorau	PNAO	
	Richard Banks	PNAO	
	Melino Bain-Vete	PNAO	
	Steven Hare	Secretariat of the Pacific Community (SPC)	
Bill Holden	MSC (Observer)		

Date	Attending	Organisation	Issues Discussed
6 th September 2016	Rob Blyth-Skyrme	Acoura Marine Ltd.	<ul style="list-style-type: none"> • Catch data availability and collection processes, including for ETP species. • Other data and information specific to Principle 2. • Fishery management structure. • Monitoring and enforcement. • Other data and information specific to Principle 3.
	Kevin McLoughlin	Acoura Marine Ltd.	
	Dave Japp	Acoura Marine Ltd.	
	Maurice Brownjohn	PNAO	
	Les Clark	PNAO	
	Sangaa Clark	PNAO	
	Richard Banks	PNAO	
	Melino Bain-Vete	PNAO	
	Steven Hare	SPC	
	Bill Holden	MSC (Observer)	
7 th September 2016	Rob Blyth-Skyrme	Acoura Marine Ltd.	<ul style="list-style-type: none"> • Catch data and collection processes, including for ETP species. • Harvest strategy development. • Traceability factors.
	Kevin McLoughlin	Acoura Marine Ltd.	
	Dave Japp	Acoura Marine Ltd.	
	Les Clark	PNAO	
	Sangaa Clark	PNAO	
	Richard Banks	PNAO	
	Melino Bain-Vete	PNAO	
	Steven Hare	SPC	
	Bill Holden	MSC (Observer)	
8 th September 2016	Rob Blyth-Skyrme	Acoura Marine Ltd.	<ul style="list-style-type: none"> • UoA definition. • Ability of observers to enforce relevant rules and measures. • Identification / mis-identification of sets as 'unassociated / non-FAD set'. • Other points as presented in the paper Moreno <i>et al.</i> 2016.
	Kevin McLoughlin	Acoura Marine Ltd.	
	Dave Japp	Acoura Marine Ltd.	
	Guillermo Moreno	Organización de Productores Asociados de Grandes Atuneros Congleadores (OPAGAC)	
	Miguel Herrera	OPAGAC	
30 th September 2016	Rob Blyth-Skyrme	Acoura Marine Ltd.	<ul style="list-style-type: none"> • UoA definition. • The VDS and transparency. • Bigeye tuna and FAD use in the WCPO • FAD versus free school distinction in the PNAFTF. • Ghost fishing
	Kevin McLoughlin	Acoura Marine Ltd.	
	Dave Japp	Acoura Marine Ltd.	
	Martin Purves	International Pole and Line Foundation (IPNLF)	
	John Burton	IPNLF	

3.12 Evaluation processes and techniques

Several sources of information provided the basis of the conclusions of this assessment, including a review of information and references provided by the client prior to the site visit, information and data sourced during site visit meetings held with stakeholders involved with the fishery (see Table 25), and review of literature and information provided following site visit meetings. Peer review and stakeholder comment on the draft report also provide a very important contribution to the assessment process.

The MSC Principles and Criteria set out the requirements for sustainable fishing. These Principles and Criteria have subsequently been used to develop a standardized, default assessment tree (within the MSC Fisheries Certification Requirements v.2.0, MSC 2014),

including Performance Indicators (PIs) and Scoring Issues (SIs), by the MSC and its advisory boards, which have been used in the assessment of this fishery.

Each SI may be scored at up to three scoring guideposts (SGs), which define the level of performance that is required to achieve 100, 80 (the passing score), and 60 scores; 100 represents a theoretically ideal level of performance and 60 a measurable shortfall (requiring a Condition of Certification to be set).

There are two, coupled, scoring requirements that constitute the MSC’s minimum threshold for a sustainable fishery:

1. The fishery must obtain a score of 80 or more for each of the MSC’s three Principles, based on the weighted average score for all Performance Indicators (PIs) under each Principle.
2. The fishery must obtain a score of 60 or more for each Scoring Issue (SI) within each PI.

A score less than 60 for any individual SI, or less than 80 for any Principle would represent a level of performance that causes the fishery to automatically fail the assessment; a score of 80 or above for all three Principles is needed for the fishery to be certified.

Note that where there is only one SI in the PI, the issue can be partially scored – in this case the Assessment Team is able to use their judgement to determine what proportion of it was met. For example, at the SG100 level, less than half was met = 85, about half met = 90, and more than half met = 95.

Following the review and synthesis of available information, the assessment team discussed each individual SI to assess the evidence is present to assess the level of performance that the fishery achieved. Justification of the scoring is provided in the scoring tables presented in Appendix 1. Individual team members were responsible for drafting the different sections, but the scoring was agreed by all team members.

Scoring for the two UoAs of the PNAFTF – 1) skipjack tuna, and 2) yellowfin tuna – was divided by UoA for Principle 1, but scoring for both UoAs was combined for Principles 2 and 3. The overall score for each PI for each species was therefore calculated on the basis of the SI scores, as depicted in Table 26 (following the rationale of Table 4, MSC 2014):

Table 26: Performance indicator scoring protocol

How many SIs met?	SG60	SG80	SG100
All	60	80	100
Half	FAIL	70	90
Less than half	FAIL	65	85
More than half	FAIL	75	95

Where necessary, scoring for Principle 2 was undertaken on the basis of different primary, secondary and ETP species comprising individual elements, with scores again calculated following the FCR 7.10.7 protocol (MSC 2014). An example of the scoring calculation is provided for each Principle 2 PI in Table 27:

Table 27: Scoring example for Principle 2 with more than one element

UoAs	Element	Main / minor	Sla (60, 80, 100)	S1b (100 only)	Element Score	PI Score
1 and 2	A	Main	80	-	80	85
	B	minor	-	default 80	80	
	C	minor	-	default 80	80	
	D	minor	-	100	100	

Scoring for Principle 3 was undertaken on the basis of both UoAs being scored the same, and with no elements scored independently.

3.12.1 Principle 1 and Principle 2 scoring elements

The elements that were scored for each PI under Principles 1 and 2 are listed in Table 28, below. Scores allocated for each PI were entered into the MSC Fishery Assessment Scoring Worksheet in order to attain the overall Principle scores; the final scores for each PI are shown in Section 5 of this report.

Table 28: Scoring elements for Principle 1 and Principle 2 for each UoA.

UoA	Component	Scoring elements	Main / minor	Data-deficient?
1	P1 – target	Skipjack tuna	N/A	No
1	P2 – primary	Yellowfin tuna (SA 3.1.3.1, MSC 2014)	Main	No
2	P1 – target	Yellowfin tuna	N/A	No
2	P2 - primary	Skipjack tuna (SA 3.1.3.1, MSC 2014)	Main	No
1 & 2	P2 – primary	Bigeye tuna	Minor	No
		Blue marlin	Minor	No
	P2 – secondary	Black marlin	Minor	No
		Silky shark	N/A	No
	P2 – ETP	Whale shark	N/A	No
		Devil ray	N/A	No
		Giant manta	N/A	No
		Manta ray – no ID	N/A	No
		False killer whale	N/A	No
		Other ETP species	N/A	No
	P2 – habitats	None	N/A	N/A
	P2 – ecosystem	WCPO warm pool – cold tongue oceanographic convergence zone	N/A	No
		Skipjack tuna as a key predator and prey species within the warm pool foodweb	N/A	No

4 Traceability

4.1 Eligibility date

The Target Eligibility Date for this reassessment of the PNAFTF is 15th June 2017, which corresponds to the publication date of the PCDR. This would allow for an unbroken period of certification between the existing certificate for skipjack tuna and a new certificate for the fishery as a whole. It is noted that a Variation Request was submitted in March 2016 to allow for the original certification period to be extended for 6 months to allow for the findings of the Hong Kong harmonisation meeting to be accommodated within the existing certification process (file:///C:/Users/admin01/Downloads/20160315_VAR_RESP_TUN197.pdf).

4.2 Traceability within the fishery

Vessels operating in the PNAFTF are required to be equipped with an operating VMS, and tracking is undertaken rigorously as part of the VDS that is employed to both monitor effort and assess uptake of fishing days purchased from the different PNA Parties.

Vessels are also required to carry observers at all times, including before commencing fishing when entering the zone initially. As well as being subject to regional Pacific Island Regional Fisheries Officer (PIRFO) standards, observers with MSC chain of custody responsibilities receive additional training on recording responsibilities.

In order to support the MSC certification of the free school purse seine fishery for skipjack tuna and yellowfin tuna in PNA waters, the PNA have implemented a rigorous traceability monitoring system; this verifies the eligibility of PNAFTF catches to carry the MSC logo. The system was described in detail recently by Daume & Morison (2016a), and is summarised below.

1. PNA are required to have 100% independent observer coverage on the PNAFTF vessels, with all observers trained in standard PIRFO procedures as well as in the PNA procedures for MSC traceability.
2. Vessels fishing in PNA waters must be subject to a Memorandum of Understanding agreeing terms of participation, have a MSC officer appointed, train the senior officers in MSC CoC processes, and apply for an MSC 'trip number' before embarking on an MSC trip. The same requirements apply for carriers.
3. At the point of setting, the skipper or fishing master declares if the set is FAD-associated or unassociated (i.e., not made within 1 nm of an identified FAD, according to the WCPFC definition of FADs), based on the available information, and enters that on his log sheet. The observer verifies and records that declaration in the observers records. Only unassociated sets undertaken while meeting other pre-requirements for MSC eligibility as set out under 1) and 2), above, are MSC-eligible.
4. For MSC eligible sets, during hauling and upon emptying the net, the observer records if any FADs or FAD-associated indicator species are present, in order to determine that the catch continues to be MSC eligible.
5. MSC-eligible catches are placed in separate fish wells that are verified empty by the observer, or only contain MSC-eligible catch.
6. Once frozen, the MSC eligible catch may be held in that well or may be transferred to a dry hold under the observers monitoring.

7. Where moved to a dry hold, the MSC eligible catch may be separated from any non-MSC fish by double-layer of netting; the same minimum standard of physical separation may be applied on carriers.
8. An observer is required to be present during any movement or transshipment of the MSC eligible catch. Prior to any movements it must be confirmed that the chutes, conveyors decks, etc. are clear of all non-MSC eligible catch.
9. Upon discharge of an MSC-eligible catch (from the fishing vessel, reefer or mothership) ashore for processing, observers must be present to monitor separation of MSC-eligible catch from other catch. Only MSC holds can be opened with MSC holds / wells. Observers record if FADs or FAD-associated indicator species are present during unloading, in order to determine that the catch continues to be MSC eligible.
10. When the catch is initially sorted/graded ashore, a final check for FAD-associated indicator species is made. If no such fish are present and other MSC-eligibility steps are confirmed (including exact weights per species and a mass balance of fish that are landed as MSC-eligible compared to catches of MSC-eligible fish as estimated by the observer), then the catch is confirmed and recorded as MSC.
11. The steps are hierarchical; if MSC eligibility is not confirmed at any step then the catch cannot continue as MSC-eligible and cannot be certified under PNA rules.

It is noted that if the observer data are not submitted together with an associated debriefing report then the catch loses MSC-eligibility. The client informed the Assessment Team that 100% of reports are submitted as required, although the submission and debriefing process may be delayed if a double trip is run by the observer.

It is noted that observers do not make decisions over MSC-eligibility or non-eligibility unilaterally. The PNA take observer data, industry submitted data, debriefing reports, etc., for each stage and evaluate eligibility. This process is undertaken from prior to a vessel starting fishing under an MSC trip number, to the point at which the catch is delivered and confirmed ashore. In 2016, 2,200 mt of catch was down-graded from MSC-eligible to non-eligible at the point at which it was landed ashore (PNAO, pers. comm.).

The traceability risk factors and mitigation approaches are detailed in Table 29.

Table 29: Traceability factors within the PNAFTF.

Traceability Factor	Risk factor and mitigation, where relevant
Potential for non-certified gear/s to be used within the fishery	The PNAFTF is undertaken by an international fleet of large purse seiners. These vessels are designed and equipped to use purse seine gear, only, and there would be no reason or justification for using a different gear type on board such vessels. The risk here is considered to be negligible.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	The vessels engaged in the PNAFTF are all equipped with VMS, and tracking is undertaken rigorously as part of the PNA VDS. There is also a requirement for 100% observer coverage, and observers are required to be aboard vessels before fishing in the PNA zone. The risk here is considered to be negligible.

Traceability Factor	Risk factor and mitigation, where relevant
Potential for vessels outside of the UoC or client group fishing the same stock	The skipjack tuna and yellowfin tuna targeted by the PNAFTF are part of the wider WCPO stocks of these species. Other vessels can and do target these stocks in other fisheries. The tracking and tracing employed in the PNAFTF are considered appropriate to manage any risk of non-MSA fish from entering the MSC chain.
Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	As noted above, the PNA have implemented a rigorous traceability monitoring system to ensure only MSC-eligible fish enter the MSC chain of custody. This includes through ensuring fish wells are empty or that MSC-eligible fish are separated by a double wall of netting prior to storage, fish may not be moved without an observer being present, and fish wells with MSC-eligible fish are secured with tags that only observers are able to remove. Transshipment is only permitted in port and under strict observer-monitored specifications. Fish can only be landed with at least one observer present, and checks are made and maintained to ensure mixing does not occur. Before skipjack tuna and yellowfin tuna are separated from the catch, FAD-associated indicator species must be confirmed absent and exact weights confirmed. Mass balance checks are carried out at each stage to ensure conformity. The risk here is considered to be negligible.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	As above, the PNA have implemented a rigorous traceability monitoring system to ensure only MSC-eligible fish enter the MSC chain of custody. No processing occurs prior to MSC-eligible fish entering CoC. The risk here is considered to be negligible.
Risks of mixing between certified and non-certified catch during transshipment	As above, the PNA have implemented a rigorous traceability monitoring system to ensure only MSC-eligible fish enter the MSC CoC. The risk here is considered to be negligible.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	None identified.

4.3 Eligibility to enter further chains of custody

This report comprises the reassessment of the PNAFTF, and the fishery is recognised as having a rigorous traceability monitoring system in place. When the PNAFTF is recertified, product will be eligible to enter further certified chains of custody and will be eligible to be sold as MSC certified and carry the MSC ecolabel.

There is no at-sea processing, and traceability is undertaken to the point at which the fish are delivered to a factory and are finally confirmed as being MSC-eligible. MSC Chain of Custody is required from that point forwards. Only tuna supplied from organizations that are included within the scope of PNA's CoC certification and agreements can be claimed to have originated from the PNAFTF.

Processing plants that are eligible under agreement with the PNA to process MSC-eligible tuna are located in Papua New Guinea, Marshall Islands and Solomon Islands (Table 30).

Table 30: PNA-based processing plants eligible to process MSC-eligible tuna under agreement with PNA.
(Source PNAO, pers. comm.)

Company	Location
SSTC Wewak	Papua New Guinea
Frabelle Lae	Papua New Guinea
Pan Pacific	Marshall Islands
SolTuna	Solomon Islands
IFC	Papua New Guinea
Majestic	Papua New Guinea
Nambawan	Papua New Guinea
Kiribati Fishing Limited	Kiribati

There are a number of designated transshipping ports, as listed in Table 31. Product that is transhipped must be verified at destination under agreement with the PNAO in order to be confirmed as MSC-eligible. Some MSC-eligible carrier loads have been landed outside PNA ports, in Pago Pago, American Samoa, Ningbo, China, and Songkla and Bangkok, Thailand under agreement with the PNA and following requisite monitoring requirements. MSC certified batches may later be shipped by container or vehicle to other facilities under separate respective Chain of Custody.

Table 31: Designated transshipping ports.
(Source PNAO, pers. comm.)
PNA ports eligible to transshipment actively Ports actively transshipping MSC tuna are underlined (correct as of January 2017)

Party	Designated ports
Federated States of Micronesia	Yap, Chuuk, <u>Pohnpei</u> , Kosrae
Kiribati	<u>Tarawa</u> , <u>Canton</u> , Kirirmati
Marshall Islands	<u>Majuro</u>
Solomon Islands	<u>Honiara</u> , Noro
Palau	Koror
Papua New Guinea	Port Moresby, <u>Lae</u> , Madang, <u>Rabaul</u> , Kimbe, Kavieng, Alotau, Lorengau, Biella, Oro Bay, Vanimu, Vidar, <u>Wewak</u>
Tuvalu	<u>Funafuti</u>

4.4 Eligibility of inseparable or practicably inseparable (IPI) stock(s) to enter further chains of custody

There are no inseparable or practicably inseparable (IPI) stocks in the PNAFTF.

It is noted that, for inexperienced persons, bigeye tuna can be difficult to distinguish from yellowfin tuna, particularly when the fish are small and frozen (when they may be subject to fin damage and abrasions from storage or handling). However, there are visual cues which facilitate accurate identification (www.mexfish.com/fish/beyetuna/ItanoBigeyeTunaID.pdf).

Whilst small bigeye tuna are usually stored and delivered together with the skipjack tuna and yellowfin tuna on the vessels, bigeye are sorted from the catch prior to processing onshore. This onshore sorting is reported to be conducted by experienced graders who can reliably distinguish between yellowfin tuna and bigeye tuna. In addition, if there was any possibility of a fish being a bigeye tuna, it would be removed from the MSC line for product quality reasons, as bigeye tuna do not can as well as skipjack tuna or yellowfin tuna, so would only attract non MSC skipjack pricing. (M. Brownjohn, pers. comm.).

The Assessment Team is satisfied that there are no IPI stocks in the PNAFTF.

5 Evaluation Results

5.1 Principle level scores

Table 32: Principle scores for each UoA of the PNAFTF.

Principle	UoA	
	1 (skipjack tuna)	2 (yellowfin tuna)
Principle 1 – Target Species	85.8	82.5
Principle 2 – Ecosystem	92.0	92.0
Principle 3 – Management	87.5	87.5

5.2 Summary of PI scores

Table 33: Performance indicator scores for each UoA of the PNAFTF.

Principle	Component	Performance Indicator (PI)		UoA	
				1	2
1	Outcome	1.1.1	Stock status	100	90
		1.1.2	Stock rebuilding	n/a	n/a
	Management	1.2.1	Harvest strategy	70	70
		1.2.2	Harvest control rules & tools	60	60
		1.2.3	Information & monitoring	90	90
	1.2.4	Assessment of stock status	95	95	
2	Primary species	2.1.1	Outcome	100	
		2.1.2	Management	95	
		2.1.3	Information	100	
	Secondary species	2.2.1	Outcome	100	
		2.2.2	Management	85	
		2.2.3	Information	90	
	ETP species	2.3.1	Outcome	85	
		2.3.2	Management	75	
		2.3.3	Information	85	
	Habitats	2.4.1	Outcome	100	
		2.4.2	Management	95	
2.4.3		Information	80		
Ecosystem	2.5.1	Outcome	100		
	2.5.2	Management	90		
	2.5.3	Information	100		
3	Governance and policy	3.1.1	Legal & customary framework	95	
		3.1.2	Consultation, roles & responsibilities	85	
		3.1.3	Long term objectives	90	
	Fishery specific management system	3.2.1	Fishery specific objectives	90	
		3.2.2	Decision making processes	80	
		3.2.3	Compliance & enforcement	80	
		3.2.4	Management performance evaluation	90	

5.3 Summary of conditions

Six conditions are set against the PNAFTF at reassessment (Table 34).

- Condition 1 is new for the fishery and was required to be set following the Hong Kong harmonisation process that is discussed in more detail in Section 3.8.
- Condition 2 was generated during the original certification. Through the Harmonisation pilot, the MSC CABs, have scored this PI for all WCPFC stocks using the ‘available’ language in v2.0. Following information provided by the MSC in a November 2014 CAB notification, and through the interpretation log, this condition can therefore be carried over into reassessment as the reassessment is being done against v2.0 fully (as per the Nov 2014 notification) and the ‘available’ criteria remain ($B > B_{MSY}$).
- Conditions 3 & 4 for the Yellowfin UoA were set during the expedited assessment (certified February 2016), which means these conditions, although set during the previous certification period, are on a different timeline and continue into the next certification period.
- Conditions 5 and 6 are new for the PNAFTF, and reflect changes to the ETP species profile (as related to legislation and changes to the MSC requirements) of the fishery.

Table 34: Summary of conditions.

Number	UoA	PI and SI	Condition
1	1	1.2.1 S1a	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.
2	1	1.2.2 S1a, S1b and S1c	<p>S1a) 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.</p> <p>S1b) By the fourth surveillance audit, the client will need to provide evidence that the HCRs are likely to be robust to the main uncertainties.</p> <p>S1c) 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.</p>
3	2	1.2.1 S1a	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.
4	2	1.2.2 S1a, S1b and S1c	<p>S1a) 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.</p> <p>S1b) By the fourth surveillance audit, the client will need to provide evidence that the HCRs are likely to be robust to the main uncertainties.</p>

Number	UoA	PI and SI	Condition
			Slc) 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.
5	1	2.3.2 Sla	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 <i>Manta</i> rays and devil rays.
6	2	2.3.2 Sla	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 <i>Manta</i> rays and devil rays.

5.4 Recommendations

Recommendations may be made against SIs that score 80 or more and, as such, are non-binding. Nevertheless, progress is reviewed at annual surveillance audits and noted in annual surveillance reports. Three non-binding Recommendations were made (Table 35).

Table 35: Summary of non-binding recommendations.

Number	UoA	PI and SI	Recommendation
1	1 & 2	2.2.2, Sld	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.
2	1 & 2	2.3.1, Slc	Although the number of pollution incidences from the 1,400-1,500 purse seine vessels considered in Richardson <i>et al.</i> (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: <i>A regional outreach and compliance assistance programme on marine pollution prevention for fishing vessel crews, business operators and managers; and</i> <i>Improvements in Pacific port waste reception facilities to enable them to receive fishing vessel wastes on shore.</i>
3	1 & 2	3.1.3, Sla	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.

5.5 Determination, Formal Conclusion and Agreement

It is the determination of the assessment team that the fishery remain certified for another certification cycle commencing on the publication of the Public Certification Report.

Acoura's decision making entity confirms this decision.

5.6 Changes in the fishery prior to and since pre-assessment

This report comprises the first reassessment for the PNAFTF. The previous certification reports for both skipjack tuna and yellowfin tuna are available on the MSC website (<https://fisheries.msc.org/en/fisheries/pna-western-and-central-pacific-skipjack-and-yellowfin-unassociated-non-fad-set-tuna-purse-seine/@@view>). Therefore, this section is not relevant.

6 References

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WCPFC Conservation and Management Measures (CMMs)

NB – the CMMs may be downloaded in full from: <https://www.wcpfc.int/conservation-and-management-measures>

CMM 2005-01: Conservation and Management Measure for bigeye and yellowfin tuna in the WCPO (replaced by a later CMM)

CMM 2007-01: Conservation and Management Measure for the Regional Observer Programme.

CMM 2008-01: Conservation and Management Measure for bigeye and yellowfin tuna in the WCPO (replaced by a later CMM)

CMM 2008-03: Conservation and management of sea turtles

- CMM 2009-02: Conservation and Management Measure on the application of high seas FAD closures and catch retention.
- CMM 2010-07: Conservation and Management Measure for sharks
- CMM 2011-03: Conservation and Management Measure to address impact of purse seine fishing activity on cetaceans
- CMM 2011-04: Conservation and Management Measure for oceanic whitetip sharks
- CMM 2012-01: Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the WCPO (replaced by a later CMM)
- CMM 2012-04: Conservation and Management Measure on the protection of whale sharks from purse seine operations
- CMM 2012-07: Conservation and Management Measure for mitigating impacts of fishing on seabirds (replaced by a later CMM)
- CMM 2013-01: Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the WCPO (replaced by a later CMM)
- CMM 2013-02: Conservation and Management Measure on compliance monitoring scheme (replaced by a later CMM)
- CMM 2013-06: Conservation and Management Measure on the criteria for the consideration of conservation and management proposals
- CMM 2013-07: Conservation and Management Measure on the special requirements of Small Island Developing States and Territories
- CMM 2013-08: Conservation and Management Measure for silky sharks
- CMM 2014-01: Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the WCPO (replaced by a later CMM)
- CMM 2014-04: Conservation and Management Measure to establish a multi-annual rebuilding plan for Pacific bluefin tuna (replaced by a later CMM)
- CMM 2014-05: Conservation and Management Measures for sharks
- CMM 2014-06: Conservation and Management Measures to develop and implement a harvest strategy approach for key fisheries and stocks in the WCPO
- CMM 2014-07: Conservation and Management Measure on Compliance Monitoring Scheme (replaced by a later CMM)
- CMM 2015-01: Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the WCPO
- CMM 2015-06: Conservation and Management Measure on target reference point for skipjack tuna
- CMM 2015-07: Conservation and Management Measure on Compliance Monitoring Scheme

Appendix 1: Scoring and Rationales

MSC Principles & Criteria

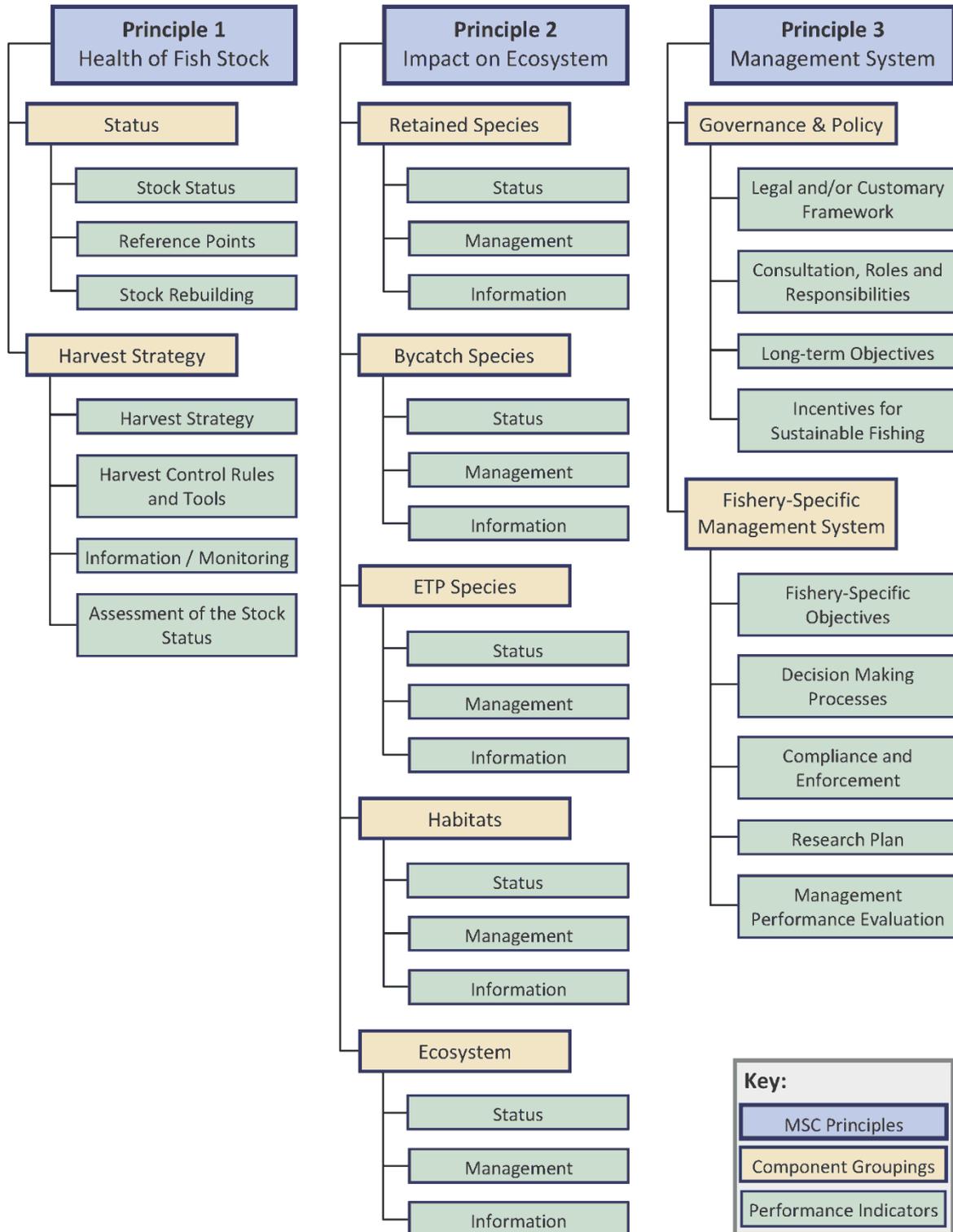


Figure 33: Graphic of MSC Principles and Criteria.

Below is a much-simplified summary of the MSC Principles and Criteria, to be used for overview purposes only. For a fuller description, including scoring guideposts under each Performance Indicator, reference should be made to the full assessment tree, complete with scores and justification, contained in the following sections of this report. Alternately a fuller description of the MSC Principles and Criteria can be obtained from the MSC website (www.msc.org).

Principle 1

“A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.”

Intent:

The intent of this Principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short-term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Status

- » The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing.
- » Limit and target reference points are appropriate for the stock (or some measure or surrogate with similar intent or outcome).
- » Where the stock is depleted, there is evidence of stock rebuilding and rebuilding strategies are in place with reasonable expectation that they will succeed.

Harvest strategy / management

- » There is a robust and precautionary harvest strategy in place, which is responsive to the state of the stock and is designed to achieve stock management objectives.
- » There are well defined and effective harvest control rules in place that endeavour to maintain stocks at target levels.
- » Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
- » The stock assessment is appropriate for the stock and for the harvest control rule, takes into account uncertainty, and is evaluating stock status relative to reference points.

Principle 2

“Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.”

Intent:

The intent of this Principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Retained species / Bycatch / ETP species

- » Main species are highly likely to be within biologically based limits or if outside the limits there is a full strategy of demonstrably effective management measures.

- » There is a strategy in place for managing these species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.
- » Information is sufficient to quantitatively estimate outcome status and support a full strategy to manage main retained / bycatch and ETP species.

- » **Habitat & Ecosystem**
- » The fishery does not cause serious or irreversible harm to habitat or ecosystem structure and function, considered on a regional or bioregional basis.
- » There is a strategy and measures in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.
- » The nature, distribution and vulnerability of all main habitat types and ecosystem functions in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery and there is reliable information on the spatial extent, timing and location of use of the fishing gear.

Principle 3

“The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.”

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

Governance and policy

- » The management system exists within an appropriate and effective legal and/or customary framework that is capable of delivering sustainable fisheries and observes the legal & customary rights of people and incorporates an appropriate dispute resolution framework.
- » Functions, roles and responsibilities of organisations and individuals involved in the management process are explicitly defined and well understood. The management system includes consultation processes.
- » The management policy has clear long-term objectives, incorporates the precautionary approach and does not operate with subsidies that contribute to unsustainable fishing.

Fishery specific management system

- » Short and long term objectives are explicit within the fishery’s management system.
- » Decision-making processes respond to relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.
- » A monitoring, control and surveillance system has been implemented. Sanctions to deal with non-compliance exist and there is no evidence of systematic non-compliance.
- » A research plan provides the management system with reliable and timely information and results are disseminated to all interested parties in a timely fashion.

UoA 1 (skipjack tuna) Principle 1 scoring tables

UoA 1 (skipjack tuna): PI 1.1.1 – Stock status

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing			
Scoring Issue	SG 60	SG 80	SG 100	
a	Stock status relative to recruitment impairment			
	Guidepost	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
	Met?	Y	Y	Y
	Justification	<p>The reference case model of the 2014 stock assessment estimated the 2011 level of spawning potential to be at approximately 48% of the unfished level, well above the LRP of 20%SB_{F=0} agreed by WCPFC (WCPFC 2014a). Rice <i>et al</i> (2014) does not present explicit confidence intervals on spawning biomass but does include a graph showing the approximate 95% confidence intervals for the reference case (Figure 12).</p> <p>Also, Pilling <i>et al.</i> (2014) used stochastic projections under status quo conditions to estimate that it was exceptionally unlikely (<1%) that the skipjack stock would fall below either the LRP or SB_{MSY} level by 2032, or that fishing mortality will increase above F_{MSY} levels, under future recruitment assumptions.</p> <p>An updated assessment of skipjack was presented at the 2016 SC meeting. 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).</p> <p>As with previous assessments, the 2016 stock assessment examines structural uncertainty using a crosswide grid of model runs incorporating the main sources of uncertainty (54 models). The results of the structural uncertainty analysis are consistent with the results of previous assessments of tuna stocks in the WCPO that used the same uncertainty axes. The quantiles across the full grid for all quantities suggested a relatively healthy stock status. Most models in the uncertainty analysis were spread relatively closely around the target reference point and well away from the limit reference point, and no models met, or even approached the thresholds of formal definitions of “overshooting” or “overfished” (Figure 52 of McKechnie <i>et al.</i> 2016).</p> <p>Stochastic 10-year projections using the proposed reference case model and assuming future status quo catches at 2015 levels were performed for the 2016 assessment. In 2025, median SB/SB_{F=0} was estimated to be 0.49, and there was zero risk of the stock falling below the limit reference point (McKechnie <i>et al.</i> 2016).</p> <p>Overall, there is a high degree of certainty that the stock is above the PRI, meeting the requirements of the scoring issue at the SG60, SG80 and SG100 levels.</p>		
b	Stock status in relation to achievement of MSY			
	Guidepost		The stock is at or fluctuating around a	There is a high degree of certainty that the stock has been fluctuating around a

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing	
		level consistent with MSY.	level consistent with MSY or has been above this level over recent years.
	Met?	Y	Y
	Justification	<p>The skipjack assessment provides probabilistic estimates of parameters of interest and uncertainty has been extensively explored using a crosswise grid of sensitivity tests (WCPFC 2014a, WCPFC 2016b). The 2014 assessment estimates of 2011 spawning biomass are above the level that will support the MSY ($SB_{2011}/SB_{MSY} = 1.74$ for the base case and range 1.45–2.10 across the sensitivity models explored) (WCPFC 2014a). Fishing mortality has generally been increasing over time, however, current fishing mortality is below the MSY level ($F_{2008-11}/F_{MSY}=0.61$ for the base case and range 0.45–0.82 across the sensitivities). The 2016 assessment estimates of spawning biomass are above the level that will support the MSY ($SB_{2015}/SB_{MSY} = 2.56$ and $SB_{2011-2014}/SB_{MSY} = 2.31$ for the base case) (WCPFC 2016b). Fishing mortality has generally been increasing over time, however, current fishing mortality is below the MSY level ($F_{2011-14}/F_{MSY}=0.45$ for and range 0.40–0.59 across the sensitivities for the reference case).</p> <p>In 2015, CMM 2015-06 was adopted at the Commission, setting the TRP for skipjack tuna at an (initial) value of $50\%SB_{F=0}$, subject to review no later than 2019. The stock assessment estimates spawning biomass to be close to this level.</p> <p>Overall, assessment outputs indicate that SG80 and SG100 requirements are met.</p>	
References		Rice <i>et al.</i> 2014, Pilling <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016, WCPFC 2014a, WCPFC 2016b.	
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	a) Level of spawning biomass in the absence of fishing	a) $20\%SB_{F=0}$	a) $SB_{recent} = 52\%SB_{F=0}$; $SB_{latest} = 58\%SB_{F=0}$; where 'recent' is over the period 2011-14 and 'latest' is 2015.
Reference point used in scoring stock relative to MSY (SIb)	a) Level of spawning biomass in the absence of fishing b) F_{MSY}	a) $50\%SB_{F=0}$ b) $F(28\%SB_{F=0})$	a) $SB_{recent} = 52\%SB_{F=0}$; $SB_{latest} = 58\%SB_{F=0}$ $SB_{latest}/SB_{MSY} = 2.56$ $SB_{recent}/SB_{MSY} = 2.31$ b) $F_{recent}/F_{MSY} = 0.45$
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			N/A

UoA 1 (skipjack tuna): PI 1.1.2 – Stock rebuilding

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue	SG 60	SG 80	SG 100
a	Rebuilding timeframes		
	Guidepost	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.
	Met?	Not scored	Not scored
	Justification	The skipjack tuna stock is not reduced, and so this PI is not scored.	
b	Rebuilding evaluation		
	Guidepost	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	Not scored	Not scored
	Justification	The skipjack tuna stock is not reduced, and so this PI is not scored.	
References	None		
OVERALL PERFORMANCE INDICATOR SCORE:			N/A
CONDITION NUMBER (if relevant):			N/A

UoA 1 (skipjack tuna): PI 1.2.1 – Harvest strategy

PI 1.2.1	There is a robust and precautionary harvest strategy in place			
Scoring Issue	SG 60	SG 80	SG 100	
a	Harvest strategy design			
	Guided post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	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 reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Y	N	N
Justification	<p>MSC guidance defines a harvest strategy as the combination of monitoring, stock assessment, harvest control rules and management actions. It is intended that these elements work together towards achieving management objectives. The current harvest strategy is not formalised but consists of the elements considered at PIs 1.2.2, 1.2.3, and 1.2.4.</p> <p>The operational harvest strategy for WCPO skipjack tuna has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. CMM 2015-01 and its predecessors are fundamental in the current harvest strategy for skipjack tuna. The primary objective of CMM 2015-01 is that “Compatible measures for the high seas and exclusive economic zones (EEZs) are implemented so that bigeye, yellowfin and skipjack tuna stocks are, at a minimum, maintained at levels capable of producing their maximum sustainable yield as qualified by relevant environmental and economic factors including the special requirements of developing States in the WCPFC-CA as expressed by Article 5 of the Convention.” CMM 2015-01 lays out catch controls, measures for FAD set managements, and capacity limitation measures. Tools adopted by WCPFC include effort limits in major purse seine fisheries, FAD closures, high seas closures, and a discard ban in purse seine fisheries. Additional FAD measures are also in place for 2016 and 2017. Purse seine effort controls are in place in coastal states EEZs.</p> <p>Explicit LRPs have been adopted for biomass and the fishing mortality rate. In December 2015, the Commission adopted an explicit MSY-related biomass TRP. At this point, harvest control rules have not been adopted. There is an extensive information base from a wide range of biological studies and from a diverse range of fisheries. The information is sufficient to support a state-of-the-art stock assessment that provides probabilistic estimates of key parameters and their relationship to reference points. Advice from the stock assessment is provided by the Scientific Committee and additional work is carried out by the scientific provider, SPC, to the Commission. Annual decision-making is articulated through CMMs and is supported by good scientific decision-support systems. CMM 2014-06 spells out the future direction for strengthening the harvest strategy, including the development of harvest control rules, and a work plan has been agreed to implement this.</p> <p>As indicated above, there are measures in place that are intended to control fishing mortality for purse seine fishing, including effort and capacity limits. A major measure is the PNA Vessel Day Scheme (VDS) which determines Total Allowable Effort (TAE) and Party Allocations of Effort (PAE).</p> <p>MSC CRv2.0 (PB3.1) states that “CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery</p>			

PI 1.2.1	There is a robust and precautionary harvest strategy in place		
	<p>assessments”. As discussed earlier in the report (Section 3.8), a meeting was held in Hong Kong in April 2016 to consider harmonisation of the P1 components of tuna fisheries in the Pacific. An outcome of this was a review of the requirements for meeting SG80 requirements for PI 1.2.1a.</p> <p>The original PNA skipjack assessment (Banks <i>et al.</i> 2011) scored the fishery as meeting the SG80 level for 1.2.1a on the basis that “The elements of the harvest strategy work together in that the implementation of the purse seine effort limit systems is based on the FFA and WCPFC VMSs, the WCPFC management actions in respect of the purse seine fisheries are largely based on the PNA actions” and that “the Commission responded to the change in the results of the skipjack assessment and the more cautionary tone of the scientific advice in 2010 by deciding to address the management of skipjack explicitly in the preparation of a CMM to replace CMM 2008-01 beyond 2011.” Overall, the original score for PI 1.2.1 for the PNA fishery was 80.</p> <p>Other skipjack fisheries considered at the Hong Kong meeting (Table 20) have concluded that SG80 is not met for 1.2.1a and have awarded an overall score of 70 for PI 1.2.1 (Table 21), and suggest that the PNA score should align with this score. It was agreed that the 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 the majority of 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 meeting that for the WCPFC tuna fisheries, including those under the PNA’s VDS, 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, hence it was concluded that a score of 70 is warranted for PI 1.2.1 and a Condition of Certification (#1) is set on UoA 1 of the PNAFTF.</p> <p>It is noted that the harmonisation of the scoring for this scoring issue has been an ongoing matter of discussion between CABs. The assessment team undertook discussions in October and November 2016 with other CABs involved in the Hong Kong meeting, the majority view being that the score should remain at 60. In keeping with MSC requirements for harmonisation, scoring issue 1.2.1a is scored as having met SG60 requirements but not SG80. Noting the points on harmonisation (see Box 1, P.87), and the MSC Technical Oversight (see MSC comments, P.299), the rationale for this score can be found in relevant fishery reports on the MSC website. These rationales are largely based on the lack of a clear linkage between potential catch and allocated effort mentioned above.</p>		
b	Harvest strategy evaluation		
Guidepost	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
Met?	Y	Y	N
Justification	The harvest strategy management objectives for skipjack are to ensure that the spawning stock does not fall to the LRP ($20\%SB_{F=0}$); to ensure fishing mortality does		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		<p>not exceed F_{MSY} ($F/F_{MSY} < 1$); and to maintain the stock at least as high recently adopted TRP ($50\%SB_{F=0}$). The latest assessments (Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016) indicate that the stock is well above the biomass LRP and that fishing mortality is well below F_{MSY}. Recent biomass is estimated to be $52\%SB_{F=0}$, just above the TRP. Also, stock projections suggest that by 2025 median $SB/SB_{F=0}$ was estimated to be 0.49, and there was zero risk of the stock falling below the limit reference point (McKechnie <i>et al.</i> 2016)</p> <p>The requirements for SG80 are met. The performance of the harvest strategy has not been fully evaluated, thus SG100 is not met.</p>		
c	Harvest strategy monitoring			
	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	WCPFC has monitoring systems in place to record catch and effort for all vessels catching skipjack tuna in the WCPO. Monitoring of the purse seine fishery includes mandatory logbooks with records of catch and effort for each fishing operation, a VMS, 100% observer coverage of most fishing operations including detailed recording of catch composition, tagging data, biological studies and port inspections. These monitoring systems support a sophisticated stock assessment process that provides robust estimates of stock status that are sufficient to determine whether the harvest strategy is working. SG 60 requirements are met.		
d	Harvest strategy review			
	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Not scored
	Justification	The harvest strategy for skipjack tuna has not been formalised and is not subject to a formal review process. SG100 is potentially not met on this basis. However, there is ongoing review of the elements of the harvest strategy and revisions are made as evidenced by the adoption of updated CMMs and the adoption of an LRP and TRP.		
e	Shark finning			
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	Sharks are not a target species in the PNAFTF, and so this SI is not scored.		
f	Review of alternative measures			
	Guidepost	There has been a review of the potential	There is a regular review of the potential	There is a biennial review of the potential

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	<p>CMM 2015-01 (and its predecessors) requires that “To create a disincentive to the capture of small fish and to encourage the development of technologies and fishing strategies designed to avoid the capture of small tunas and other fish, CCMs shall require their purse seine vessels fishing in EEZs and on the high seas within the area bounded by 20°N and 20°S to retain on board and then land or transship at port all bigeye, skipjack, yellowfin tuna.” Exceptions to this requirement are possible where the fish are unfit for human consumption for reasons other than size or when serious malfunction of equipment occurs. Reporting of discards is required. Discarded catches of skipjack are estimated to be minor and are ignored in the stock assessment (Rice <i>et al.</i> 2014)</p> <p>The rules in place indicate that this scoring issue is not relevant to the UoA.</p>		
References		Banks <i>et al.</i> 2011, Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016, PNA 2016a, WCPFC 2014a, WCPFC 2016b, WCPFC CMMs.		
OVERALL PERFORMANCE INDICATOR SCORE:				70
CONDITION NUMBER (if relevant):				1

UoA 1 (skipjack tuna): PI 1.2.2 – Harvest control rules and tools

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue	SG 60	SG 80	SG 100
a	HCRs design and application		
Guided post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	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, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.
Met?	Y	N	N
Justification	<p>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.</p> <p>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)”.</p> <p>MSC CRv2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level (MSC 2014).</p> <p>First, 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”.</p> <p>The MULTIFAN-CL software used for 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 ($SB_{latest}/SB_{MSY} = 1.74$ for the base case and from 1.45 to 2.10 across the grid of model runs used in the assessment) (WCPFC 2014a). WCPFC (2014a) also indicated that “<i>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 ($F > F_{MSY}$)</i>”.</p> <p>An updated 2016 assessment provides conclusions that are largely consistent with previous assessments based on the results of the reference case model and consideration of the results of sensitivity runs (McKechnie <i>et al.</i> 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</p>		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place	
		<p>($0.5SB_{F=0}$) for all models explored in the assessment (structural uncertainty grid: median = 0.51, 95% quantiles = 0.39 and 0.67) (WCPFC 2016b).</p> <p>The CRv2.0 SA2.5.2a condition is therefore met and HCRs are considered to be 'available'.</p> <p>Second, CR v2.0 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}".</p> <p>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 (MOW) process (a TRP and LRP have been adopted for skipjack tuna). Following discussions at WCPFC12 a workplan was agreed (WCPFC 2015b, 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 10).</p> <p>As indicated above, the current stock assessment and projections of future stock size indicate that the stock will remain above SSB_{MSY} over the period agreed in the CMM 2014-06 workplan. The CRv2.0 SA2.5.3b requirement is therefore met.</p> <p>In summary, as the requirements of both CRv2.0 SA2.5.2a and CRv2.0 SA2.5.3b are met, a score of SG60 is awarded. Nevertheless, as UoA 1 of the PNAFTF does not meet the SG80 level of performance for this SI, a Condition of Certification (#2) is set.</p>	
b		HCRs robustness to uncertainty	
Guidepost		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.
Met?		N	N
Justification	HCRs are still under development and SG80 is therefore not met. The Condition of Certification (#2) that was set for SIa applies to this SI, also.		
c		HCRs evaluation	
Guidepost	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
	Met?	Y	N	N
	Justification	<p>The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.</p> <p>First, 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".</p> <p>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).</p> <p>Second, in relation to Sla, 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.</p> <p>As noted at Sla, 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 and TRP for skipjack. Following discussions at WCPFC 12 a workplan was agreed (WCPFC 2015a, Attachment Y). No additional trigger is required for the development of HCRs is required.</p> <p>The requirements detailed above are met and a score of 60 is awarded. SG80 refers to the tools 'in use' in the fishery. Given Sla finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met. The Condition of Certification (#2) that was set for Sla applies to this SI, also.</p>		
References	Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016, WCPFC 2014a, WCPFC 2015b, WCPFC 2016b.			
OVERALL PERFORMANCE INDICATOR SCORE:				60
CONDITION NUMBER (if relevant):				2

UoA 1 (skipjack tuna): PI 1.2.3 – Information and monitoring

PI 1.2.3	Relevant information is collected to support the harvest strategy			
Scoring Issue	SG 60	SG 80	SG 100	
a	Range of information			
	Guidepost	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	Y
	Justification	<p>Monitoring systems in place provide a comprehensive range of information to support the current harvest strategy and inform the stock assessment. Available information includes mandatory logbooks, with records for each fishing operation, detailed VMS coverage, a requirement for 100% observer coverage for the majority of the skipjack tuna catch, and port inspections.</p> <p>Information is available on key aspects of skipjack tuna biology and extensive tagging provides information on stock structure. The tagging data and size composition sampling are key inputs to the MULTIFAN-CL model which provides for estimation of reference points against which stock status can be evaluated and management advice provided. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery. These data have been used to produce complex models of the ecological system (e.g., Ecopath and SEAPODYM).</p> <p>The available information is considered to meet the requirements of the SG60, SG80 and SG100 levels.</p>		
b	Monitoring			
	Guidepost	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	Y	N

PI 1.2.3		Relevant information is collected to support the harvest strategy	
Justification	<p>As indicated at PI 1.2.3 Sla, stock abundance and removals are monitored at a level of accuracy and coverage that is sufficient to support the current harvest control measures. The information enables estimates of stock abundance and harvest control decisions based on the available data using the stock assessment and a range of assumptions. The MULTIFAN-CL based assessment estimates abundance using catch and effort, size composition, and tagging data. Abundance indices (CPUE) for purse seine and pole-and-line fisheries are derived for use in the assessment model. Overall, data used are from all fisheries and cover the entire skipjack tuna stock. Catches are monitored at a level of accuracy and coverage consistent with assessment requirements to enable management decision-making. Effort data units for purse seine fisheries are defined as days fishing/or searching, and are allocated to set type (associated or unassociated) in logbook data. The majority of catches are taken by purse-seine vessels under PNA VDS arrangements. Since 2010, these vessels are subject to 100% observer coverage at sea. Port and transshipment monitoring are also required. A review of sampling protocols has improved catch and size composition accuracy (Cordue 2013).</p> <p>However, 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 <i>et al.</i> 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).</p> <p>The requirements for the SG60 and SG80 levels are met.</p>		
c	Comprehensiveness of information		
Guidpost		There is good information on all other fishery removals from the stock.	
Met?		Y	
Justification	<p>Other removals from the stock across the WCPO include catches by other WCPFC members, again predominantly by purse seine but also by other fishing gears. Catches by members are required to be reported to the WCPFC. Article 5 of the Convention requires CCMs to "collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes."</p> <p>The original PNA skipjack tuna MSC assessment (Banks <i>et al.</i> 2011) commented on shortcomings in the information coming from some countries, in particular, Indonesia. Since that assessment there has been additional work to improve the level of data available from other sources, including non-purse seine fisheries. There is improved data from the diverse fisheries of Indonesia, Philippines, and Vietnam, including estimates of total catch, size and some effort data as a result of projects such as the Global Environment Facility (GEF) funded West Pacific East Asia (WPEA) Project which has provided technical assistance and financial support to the participating countries (Indonesia, Philippines and Vietnam) for tuna data collection, annual tuna catch estimation, and capacity building to refine legal, institutional and policy arrangements (WCPFC 2014b).</p> <p>Overall, it is concluded that there is good information on other removals and SG80 requirements are met.</p>		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
References	Cordue 2013, Lehodey <i>et al.</i> 1997, McKechnie <i>et al.</i> 2016, Rice <i>et al.</i> 2014, WCPFC 2014b, WCPFC 2016b.	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		N/A

UoA 1 (skipjack tuna): PI 1.2.4 – Assessment of stock status

PI 1.2.4	There is an adequate assessment of the stock status		
Scoring Issue	SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration		
	Guided post	The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?	Y	Y
	Justification	<p>Stock assessments of skipjack tuna are undertaken regularly, most recently in 2016 (McKechnie <i>et al.</i> 2016); before that in 2014 (Rice <i>et al.</i> 2014) and in 2011 (Hoyle <i>et al.</i> 2011). The assessment takes into account major features relevant to the biology and the nature of the UoA and the wider WCPO. It is implemented using MULTIFAN-CL, fitting an age- and spatially-structured model to catch, effort, size composition, and tagging data. The model first developed for skipjack tuna in 1998 and has been continually fine-tuned and improved.</p> <p>The skipjack tuna assessment is appropriate for the WCPO stock, accounting for spatial and temporal distributions, using appropriate biological assumptions, and accounting for diverse fisheries. The assessment is appropriate for the generally understood harvest control rules that are being applied and for the range of formal HCRs that are likely to be adopted; SG80 and SG100 requirements are met.</p>	
b	Assessment approach		
	Guided post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.
	Met?	Y	Y
	Justification	The assessment is used to estimate stock status relative to a wide range of indicators including the agreed reference points. The SG60 and SG80 requirements are met.	
c	Uncertainty in the assessment		
	Guided post	The assessment identifies major sources of uncertainty.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y
	Justification	The skipjack assessment explicitly explores sources of uncertainty. Two approaches are used to describe the uncertainty. The first estimates statistical uncertainty within a given assessment model. In addition, structural uncertainty in the assessment is examined by considering the variation in a crosswise grid of model runs which include	

PI 1.2.4		There is an adequate assessment of the stock status	
		many of the options of uncertainty explored during model development (Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016). The structural uncertainty includes examination of factors including steepness, the length composition weighting data, the assumed tag mixing period and the tagging data weighting, resulting in a grid of 54 models. Model outputs are provided in a probabilistic way. SG60, SG80 and SG100 requirements are met.	
d	Evaluation of assessment		
	Guided post		The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?		Y
	Justification	The SPC Oceanic Fisheries Programme provides an ongoing programme of review of assessment assumptions and approaches. Model structure has been updated to reflect the availability of new data or new interpretations of existing data. A suite of sensitivity analyses are undertaken to explore the impact of options such as changing assumptions for fixed parameters or different treatments of the data. Furthermore, retrospective analyses have been undertaken to explore any systematic biases in the model and the results used to adjust the reference case. Aspects of uncertainty examined include stock-recruitment steepness, alternate growth assumptions, alternate mixing assumptions and changes in weighting factors (Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016). The assessment for skipjack tuna has been shown to be robust. The SG100 requirements are met.	
e	Peer review of assessment		
	Guided post	The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?	Y	N
	Justification	The WCPFC science and assessment processes have been externally reviewed (WCPFC 2009a). The stock assessment itself is subject to internal peer review through the annual pre-assessment workshop and WCPFC SC annual processes. An external review of bigeye tuna (Ianelli <i>et al.</i> 2013) has implications for the skipjack assessment and the SPC has taken advantage of that review to further develop all tuna assessments, including for skipjack (Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016). SG80 requirements are met. However, the skipjack assessment itself has not been specifically subject to external peer review, preventing a score of 100 for this scoring issue.	
References	Hoyle <i>et al.</i> 2011, Rice <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016, Ianelli <i>et al.</i> 2013, WCPFC 2009a.		
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			N/A

UoA 2 (yellowfin tuna) Principle 1 scoring tables

UoA 2 (yellowfin tuna): PI 1.1.1 – Stock status

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing			
Scoring Issue	SG 60	SG 80	SG 100	
a	Stock status relative to recruitment impairment			
	Guidepost	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
	Met?	Y	Y	Y
	Justification	<p>The 2014 stock assessment (Davies <i>et al.</i> 2014) estimated that the “current” spawning biomass (average over the period 2008-2011) was 42% of the unfished level ($SB_{current}/SB_{F=0} = 0.42$) and the “latest” (2012) spawning biomass was 38% of the unfished level ($SB_{latest}/SB_{F=0} = 0.38$). These estimates indicate the spawning biomass is well above the WCPFC LRP ($20\%SB_{F=0}$).</p> <p>Pilling <i>et al.</i> (2014) provides stochastic projections under status quo conditions to estimate that it was exceptionally unlikely (<1%) that the yellowfin stock would fall below the limit reference point level or that fishing mortality would increase above the F_{MSY} level by 2032. Dependent upon the future recruitment assumption, the projections indicate it was exceptionally unlikely (<1%; long-term recruitment deviate assumption) or very unlikely (<10%; recent recruitment assumption) to fall below B_{MSY}.</p> <p>Overall, there is a high degree of certainty that the stock is above the point where recruitment would be impaired, which meets the requirements of this scoring issue at the SG60, SG80 and SG100 levels.</p>		
b	Stock status in relation to achievement of MSY			
	Guidepost		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		Y	N
	Justification	<p>No explicit target reference point has been adopted for yellowfin tuna. There is an implicit target of B_{MSY} (supported by CMM 2014-01) and target reference levels under consideration by the WCPFC are in the range of 40-60%$SB_{F=0}$.</p> <p>The 2014 stock assessment estimated that “recent levels of spawning potential are most likely above (based on 2008-11 average and based on 2012) the level which will support the MSY”. Thus the best estimate is that the stock is above its (default) target reference point which meets the requirements of SI b at the SG 80 level.</p> <p>The uncertainty analysis presented in Davies <i>et al.</i> (2014, Table 7) addresses the question as to whether SG 100 is met. The grid medians and 95% confidence intervals for $SB_{current}/SB_{MSY}$ and SB_{latest}/SB_{MSY} were estimated at 1.37 (0.97-1.82) and 1.29 (1.0-1.69) respectively, showing a slightly greater than 5% chance of the yellowfin stock being below SB_{MSY} over the period 2008-2011. This information is</p>		

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue	SG 60	SG 80	SG 100
	close to meeting the SG100 requirement, however, given declining trends the Assessment Team concluded that SG100 is not met. This result is harmonized with other fisheries targeting this stock and could be re-considered in light of an updated stock assessment if the fishery is certified.		
References	Davies <i>et al.</i> 2014, WCPFC 2014a, WCPFC 2016b.		
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	$20\%SB_{F=0}$	$0.2 \times SB_{F=0} = 473,711 \text{ t}$	$SB_{latest} = 899,496 \text{ t}$ or $1.90 \times \text{LRP}$
Reference point used in scoring stock relative to MSY (SIb)	B_{MSY}	$SB_{MSY} = 728,300 \text{ t}$	Reference case: $SB_{latest} = 899,496 \text{ t}$ or $1.24 \times SB_{MSY}$
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			N/A

UoA 2 (yellowfin tuna): PI 1.1.2 – Stock rebuilding

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue	SG 60	SG 80	SG 100
a	Rebuilding timeframes		
	Guidepost	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.
	Met?	Not scored	Not scored
	Justification	The yellowfin tuna stock is not reduced, and so this PI is not scored.	
b	Rebuilding evaluation		
	Guidepost	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
	Met?	Not scored	Not scored
	Justification	The yellowfin tuna stock is not reduced, and so this PI is not scored.	
References	None		
OVERALL PERFORMANCE INDICATOR SCORE:			N/A
CONDITION NUMBER (if relevant):			N/A

UoA 2 (yellowfin tuna): PI 1.2.1 – Harvest strategy

PI 1.2.1	There is a robust and precautionary harvest strategy in place			
Scoring Issue	SG 60	SG 80	SG 100	
a	Harvest strategy design			
	Guided ost	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	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 reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Y	N	Not scored
Justification	<p>MSC guidance defines a harvest strategy as the combination of monitoring, stock assessment, harvest control rules and management actions. It is intended that these elements work together towards achieving management objectives. The current harvest strategy is not formalised but consists of the elements considered at PIs 1.2.2, 1.2.3, and 1.2.4.</p> <p>The operational harvest strategy for WCPO yellowfin has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. Management measures applied to yellowfin tuna take the same form as those applied to skipjack tuna. The development of measures from CMM 2005-01 to 2015-01 are as described at PI 1.2.1 Sla for skipjack tuna.</p> <p>An explicit LRP for yellowfin tuna has been adopted for biomass ($20\%SB_{F=0}$). A formal target reference point is under discussion by WCPFC and subject to development under the workplan established under CMM 2014-06. In the absence of a formal target reference point, the default WCPFC target of B_{MSY} applies to yellowfin tuna.</p> <p>At this point, harvest control rules have not been adopted. There is an extensive information base from a wide range of biological studies and from a diverse range of fisheries. The information is sufficient to support a state-of-the-art stock assessment that provides probabilistic estimates of key parameters and their relationship to reference points. Advice from the stock assessment is provided by the SC and additional work is carried out by the scientific provider, SPC, to the Commission. Annual decision-making is articulated through CMMs and is supported by good scientific decision-support systems. CMM 2014-06 spells out the future direction for strengthening the harvest strategy, including the development of harvest control rules, and a work plan has been agreed to implement this.</p> <p>As indicated above, there are measures in place that are intended to control fishing mortality for purse seine fishing, including effort and capacity limits. The UoA harvest strategy rates well against many of the requirements for a harvest strategy as defined by MSC (e.g. limit reference point, monitoring and stock assessment). The status of yellowfin continues to be assessed as not overfished and not subject to overfishing, though the yellowfin tuna stock is not in as strong a position against the various reference levels presented in the assessment as is the case for skipjack tuna. Latest catches in the 2014 assessment (612,797 mt, 2012) of WCPO yellowfin tuna marginally exceed MSY (586,400 mt).</p> <p>The majority of the skipjack catch in the WCPO is taken by purse seine. Since 2010, annual catches of yellowfin tuna by methods other than purse seine have been</p>			

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		<p>approximately 40-50% of the total, hence the measures in place for these other fishing methods require greater consideration for yellowfin tuna.</p> <p>CMM 2013-01, CMM 2014-01 and CMM 2015-01 have, in addition to the measures for the purse seine component of the fishery, incorporated requirements that other commercial fisheries for bigeye tuna, yellowfin tuna and skipjack tuna take necessary measures such that fishing effort and capacity shall not exceed the average level for the period 2001-2004 or 2004. For longline fisheries, these CMMs require that “<i>CCMs agree to take measures not to increase catches by their longline vessels of yellowfin tuna.</i>” These three CMMs each state that at the following regular Commission meeting “<i>...the Commission will formulate and adopt appropriate limits for CCMs, based on recommendations from the Scientific Committee, and taking into account other measures in this CMM.</i>” These limits have not yet been agreed.</p> <p>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.</p> <p>As UoA 2 of the PNAFTF does not meet the SG80 level of performance for this SI, a Condition of Certification (#3) is set.</p>		
b	Harvest strategy evaluation			
	Guidepost	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	N
	Justification	<p>The yellowfin tuna assessment (Davies <i>et al.</i> 2014) indicates the stock is in more depleted than skipjack tuna, but it is still assessed as being close to the implicit target. Status quo stock projections undertaken indicate that “<i>it was exceptionally unlikely (<1%) that the yellowfin stock would fall below the limit reference point level or that fishing mortality would increase above the F_{MSY} level by 2032</i>” (Pilling <i>et al.</i> 2014).</p> <p>Furthermore, the current stock assessment indicates that fishing mortality for yellowfin tuna has always been below the F_{MSY} level and that the stock has not declined below the default target of B_{MSY}. This constitutes good evidence that the harvest strategy is meeting its objectives.</p> <p>Therefore, as for skipjack tuna, yellowfin tuna is considered to meet both the SG 60 and SG 80 levels of this scoring issue. The harvest strategy performance has not been fully evaluated – SG100 is not met.</p>		
c	Harvest strategy monitoring			
	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
	Met?	Y		
	Justification	The same monitoring is also in place for yellowfin tuna as for skipjack tuna (see PI 1.2.1, SIc). These monitoring systems support a sophisticated stock assessment process that provides robust estimates of stock status that are sufficient to determine whether the harvest strategy is working. This SG 60 requirement is met.		
d Harvest strategy review				
	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Not scored
	Justification	The harvest strategy for yellowfin tuna has not been formalised and is not subject to a formal review process. SG100 is potentially not met on this basis. However, there is ongoing review of the elements of the harvest strategy and revisions are made as evidenced by the adoption of updated CMMs.		
e Shark finning				
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	Sharks are not a target species in the PNAFTF, and so this SI is not scored.		
f Review of alternative measures				
	Guidepost	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	CMM 2015-01 (and its predecessors) requires that "To create a disincentive to the capture of small fish and to encourage the development of technologies and fishing strategies designed to avoid the capture of small tunas and other fish, CCMs shall require their purse seine vessels fishing in EEZs and on the high seas within the area bounded by 20°N and 20°S to retain on board and then land or transship at port all bigeye, skipjack, yellowfin tuna." Exceptions to this requirement are possible where the fish are unfit for human consumption for reasons other than size or when serious malfunction of equipment occurs. Reporting of discards is required. The rules in place indicate that this scoring issue is not relevant to the UoA.		

PI 1.2.1	There is a robust and precautionary harvest strategy in place	
References	Banks <i>et al.</i> 2011, Davies <i>et al.</i> 2014, Pilling <i>et al.</i> 2014	
OVERALL PERFORMANCE INDICATOR SCORE:		70
CONDITION NUMBER (if relevant):		3

UoA 2 (yellowfin tuna): PI 1.2.2 – Harvest control rules and tools

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue	SG 60	SG 80	SG 100
a	HCRs design and application		
	Guided post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	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, or for key LTL species a level consistent with ecosystem needs.
Met?	Y	N	Not scored
Justification	<p>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.</p> <p>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 (MSC 2014) 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)”.</p> <p>CRv2.0 (MSC 2014) lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level.</p> <p>First, 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”.</p> <p>The MULTIFAN-CL software used for 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 “<i>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}</i>” (WCPFC 2014a). The CRv2.0 SA2.5.2a condition is therefore met and HCRs are considered to be ‘available’.</p>		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place	
	<p>Second, 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}".</p> <p>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.</p> <p>In fact, work towards establishing reference points and harvest control rules is already well underway through the Management Objectives Workshop (MOW) process (a LRP has been adopted for yellowfin tuna and candidate TRPs are under consideration). Following discussions at WCPFC 12 a workplan was agreed (WCPFC 2015b, 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 10).</p> <p>As indicated above, the current stock assessment and projections of future stock size indicate that the stock will remain above SSB_{MSY} over the period agreed in the CMM 2014-06 workplan.</p> <p>The CRv2.0 SA2.5.3b requirement is therefore met.</p> <p>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. Nevertheless, as UoA 2 of the PNAFTF does not meet the SG80 level of performance for this SI, a Condition of Certification (#4) is set.</p>		
b	HCRs robustness to uncertainty		
	Guidepost	The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.
	Met?	N	Not scored
	Justification	<p>The 'available' harvest control rules are not sufficiently articulated to allow an evaluation of the extent to which they take uncertainties into account. When well-defined HCRs are developed they can be evaluated as to whether the main uncertainties have been taken into account.</p> <p>The SG80 requirements are not considered to be met, and the Condition of Certification (#4) that was set for Sla applies to this SI, also.</p>	
c	HCRs evaluation		
	Guidepost	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
	Met?	Y	N	Not scored
	Justification	<p>The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.</p> <p>First, CRv2.0 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". 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".</p> <p>Evidence to support this is provided by the 2014 assessment indicating that overfishing is not occurring ($F_{current} / F_{MSY} < 1$ across the grid of model runs) (WCPFC 2014a).</p> <p>Second, in relation to Sla, 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.</p> <p>As noted at Sla, 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.</p> <p>The requirements detailed above are met and a score of 60 is awarded. SG80 refers to the tools 'in use' in the fishery. Given Sla finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met. The Condition of Certification (#4) that was set for Sla applies to this SI, also.</p>		
References	Davies <i>et al.</i> 2014, Pilling <i>et al.</i> 2014, WCPFC 2014a, WCPFC 2016b, CMM 2014-06.			
OVERALL PERFORMANCE INDICATOR SCORE:				60
CONDITION NUMBER (if relevant):				4

UoA 2 (yellowfin tuna): PI 1.2.3 – Information and monitoring

PI 1.2.3	Relevant information is collected to support the harvest strategy			
Scoring Issue	SG 60	SG 80	SG 100	
a	Range of information			
	Guided post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	Y
	Justification	<p>The information and monitoring system that is in place for skipjack tuna catches is also applicable to yellowfin tuna. Therefore, the same rationale and scores also apply to yellowfin tuna. Available information includes mandatory logbooks, with records for each fishing operation, detailed VMS coverage, a requirement for 100% observer coverage for the majority of the yellowfin purse seine catch, and port inspections. Information is available on key aspects of yellowfin tuna biology and extensive tagging provides information on stock structure. The tagging data and size composition sampling are key inputs to the MULTIFAN-CL model which provides for estimation of reference points against which stock status can be evaluated and management advice provided. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery.</p> <p>There is a comprehensive range of information collected related to the fishery including the elements required to meet the SG60, SG80 and SG100 levels.</p>		
b	Monitoring			
	Guided post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	Y	N

PI 1.2.3		Relevant information is collected to support the harvest strategy	
Justification	<p>The information and monitoring system that is in place for skipjack tuna catches is also applicable to yellowfin tuna. As noted in the original assessment for skipjack tuna (Banks <i>et al.</i> 2011), stock abundance and removals are monitored at a level of accuracy and coverage that is sufficient to support the harvest control measures in place. Estimates of stock abundance are obtained through the MULTIFAN-CL stock assessment. Abundance indices monitored include catch-per-unit effort (CPUE) for purse seine and longline fisheries. WCPFC has systems in place for recording catch and effort for all vessels catching WCPO yellowfin tuna. Purse seine catch data are estimated by 1° latitude, 1° longitude, month, flag, and set type. The majority of the purse seine catches are taken under the PNA VDS arrangements. The PNA purse seine vessels are subject to 100% at sea observer coverage. These requirements meet the SG60 and SG80 levels.</p> <p>There are issues of non-provision of operational catch and effort by several Commission members for the longline fishery. The SPC has enumerated the impacts of these operational level data gaps. As a result, there is not a high degree of certainty about all the information required, with operational level data not provided for some parts of the fishery. The SG100 level is not met.</p>		
c	Comprehensiveness of information		
Guided post		There is good information on all other fishery removals from the stock.	
Met?		Y	
Justification	<p>Other removals from the stock across the WCPO include catches by other WCPFC members, including by fishing gears other than purse seine. Catches by members are required to be reported to the WCPFC. Article 5 of the Convention requires CCMs to “collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes.”</p> <p>This scoring issue was the subject of discussion in the original skipjack tuna assessment (Banks <i>et al.</i> 2011), in particular whether there was good information on the level of fishery removals from some countries, predominantly Indonesia, the Philippines and Vietnam.</p> <p>The conclusion was that “despite a number of deficiencies in compilation and analysis from the Indonesia and Philippines, this reaches SG 80”.</p> <p>Since that assessment there has been additional work to improve the level of data available (GEF-funded West Pacific East Asia project noted in the Surveillance Reports for skipjack tuna and at WCPFC 11 (WCPFC 2014c). The requirements of the SG80 level are met for yellowfin tuna.</p>		
References	Banks <i>et al.</i> 2011, Davies <i>et al.</i> 2014, WCPFC 2014c.		
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			N/A

UoA 2 (yellowfin tuna): PI 1.2.4 – Assessment of stock status

PI 1.2.4	There is an adequate assessment of the stock status		
Scoring Issue	SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration		
	Guidepost	The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?	Y	Y
	Justification	The MULTIFAN-CL stock assessment software is a robust and internationally recognized stock assessment package with efficient function minimization, implemented in AD Model Builder. The 2014 assessment model is an age and spatially structured model, utilizing biological information, catch, effort, size composition, CPUE and tagging data and fits the data of 33 fisheries to nine regions in quarterly time steps from 1952-2012 (Davies <i>et al.</i> , 2014). The assessment is undertaken by an experienced and internationally recognised stock assessment program at the SPC, the WCPFC science provider. The SG80 and SG100 requirements are met.	
b	Assessment approach		
	Guidepost	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.
	Met?	Y	Y
	Justification	As described in the introductory sections of this document (Section 3.5.2.2) and in the scoring text for PI 1.1.1, the stock assessment reports provide a wide range of estimates of stock status relative to indicators of interest to management, including agreed/potential reference levels. The SG60 and SG80 requirements are met.	
c	Uncertainty in the assessment		
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y
	Justification	As for skipjack tuna, the assessment of yellowfin tuna has provided explicit commentary on the major sources of uncertainty, has assessed the sensitivity of the assessment to these uncertainties, and has evaluated current and future stock status relative to these in a probabilistic way. The first estimates statistical uncertainty within a given assessment model. In addition, structural uncertainty in the assessment is	

PI 1.2.4		There is an adequate assessment of the stock status	
		<p>examined by considering the variation in a crosswise grid of 48 model runs. Key uncertainties identified and explored in the 2014 assessment were the assumed level of steepness of the stock-recruitment relationship, natural mortality, CPUE, the weighting of the length samples, and the tag mixing period. The 2014 assessment incorporates improved modelling of recruitment to ensure that uncertain estimates do not influence key stock status outcomes (Davies <i>et al.</i> 2014).</p> <p>This meets the requirements of the SG60, SG80 and SG100 levels of this SI.</p>	
d	Evaluation of assessment		
	Guidepost		The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?		Y
	Justification	<p>There is an ongoing program of review of assessment assumptions and approaches by the staff in the SPC's Oceanic Fisheries Programme. Alternative hypotheses are continually being explored (within funding and time constraints) and assessments are updated and modified as required. Recommendations for further work to improve the assessment can be seen in Davies <i>et al.</i> (2014).</p> <p>The structure of the assessment has been regularly updated to reflect the availability of new data or new interpretations of existing data and a suite of sensitivity analyses have been undertaken to explore the impact of options such as changing assumptions for fixed parameters or different treatments of the data. Furthermore, retrospective analyses have been undertaken to explore any systematic biases in the model and the results used to adjust the reference case. The assessment for yellowfin tuna has been shown to be robust, meeting the requirements of this scoring issue.</p>	
e	Peer review of assessment		
	Guidepost	The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?	Y	N
	Justification	<p>Internal reviews of stock assessments are undertaken by SPC. There has been an external review of the assessment of bigeye tuna (Ianelli <i>et al.</i> 2012) which provided recommendations that were also applicable to other similar assessments such as for yellowfin tuna. Many of those recommendations have been addressed with the current yellowfin assessment.</p> <p>There have also been external reviews commissioned of different aspects of the data analyses that feed into the assessments, e.g. external review of the purse seine fishery species and size composition estimation has been conducted by Cordue (2013). A level of internal review is also provided by submission to meetings of the WCPFC SC, at which experienced scientific staff from several countries attend.</p> <p>As discussed in the background information, there have been two earlier reviews of the previous yellowfin tuna assessment (Haddon 2010 and Maguire 2010) which were commissioned by the USA through the Center for Independent Experts (CIE).</p>	

PI 1.2.4	There is an adequate assessment of the stock status	
	A response to these reviews was provided by SPC to SC7 (SPC 2011) but there was no reference to the findings of this review or the response in the latest stock assessment (Davies <i>et al.</i> 2014). Given that these reviews were not commissioned by the WCPFC or SPC and the lack of a clear response in the subsequent assessment we conclude that the requirements for external review are not fully met. This scoring issue is met at the SG80 level but not the SG100 level.	
References	Davies <i>et al.</i> 2014, Cordue 2013, Ianelli <i>et al.</i> 2012, Haddon 2010, Maguire 2010.	
OVERALL PERFORMANCE INDICATOR SCORE:		95
CONDITION NUMBER (if relevant):		N/A

Principle 2 scoring tables

PI 2.1.1 – Primary species outcome

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Main primary species stock status			
	Guidepost	<p>Main primary species are likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main primary species are highly likely to be above the PRI</p> <p>OR</p> <p>If the species is below the PRI, there is either evidence of recovery or a demonstrably effective strategy in place between all MSC UoAs which categorise this species as main, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.</p>
	Met?	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>
Justification	<p>‘Primary species’ are defined by the MSC as those species that are in scope but not target (P1) species “where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points” (MSC 2014).</p> <p>The ‘main’ designation is then given where either i) “the catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA”, or ii) “The species is classified as ‘Less resilient’ and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA.” (MSC 2014).</p> <p>SA 3.1.3.1 (MSC 2014) also requires that yellowfin tuna is considered as a P2 species in scoring UoA 1 (skipjack tuna), and that skipjack tuna is considered as a P2 species in scoring UoA 2 (yellowfin tuna); in both cases, these were assessed as main primary species. On this basis, only yellowfin tuna (for UoA 1) and skipjack tuna (for UoA 2) were considered to be main primary species in the catch.</p> <p>For yellowfin tuna as a main primary species in UoA 1, the 2014 stock assessment (Davies <i>et al.</i> 2014) estimated that the “current” spawning biomass (average over the period 2008-2011) was 42% of the unfished level ($SB_{current}/SB_{F=0} = 0.42$) and the “latest” (2012) spawning biomass was 38% of the unfished level ($SB_{latest}/SB_{F=0} = 0.38$). These estimates indicate the spawning biomass is well above the WCPFC LRP ($20\%SB_{F=0}$). SG100 is met.</p> <p>For skipjack tuna as a main primary species in UoA 2, the 2016 assessment estimates of 2015 spawning biomass are above the level that will support the MSY</p>			

PI 2.1.1	The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.		
	(SB ₂₀₁₅ /SB _{MSY} = 2.56 for the base case and range 1.81–2.93 across the sensitivity models explored) (WCPFC 2016b). Fishing mortality has generally been increasing over time, however, current fishing mortality is below the MSY level (F ₂₀₁₁₋₁₄ /F _{MSY} =0.45 for and range 0.40–0.59 across the sensitivities for the reference case). SG100 is met.		
b	Minor primary species stock status		
	Guidepost		Minor primary species are highly likely to be above the PRI OR If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species
	Met?		Y
	Justification	Bigeye tuna is considered to be the only minor primary species caught in the PNAFTF, comprising just 1.159% of the total catch (Table 15). The latest stock assessment (Harley <i>et al.</i> 2014) indicates that bigeye tuna spawner biomass is at or very close to the limit reference point, the impact of free school purse seine fishing on the spawning potential of bigeye in the WCPO is very small relative to that of other fishing gears (Figure 26). As such, while bigeye tuna is not highly likely to be above the limit reference point (analogous to the PRI), there is evidence that the PNAFTF does not hinder the recovery and rebuilding of bigeye tuna as a minor primary species. The PNAFTF meets the SG100 level of performance, here.	
References	Harley <i>et al.</i> 2014, MSC 2014.		
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			N/A

PI 2.1.1 Scoring calculation

UoAs	Species	Main / minor	S _{la} (60, 80, 100)	S _{lb} (100 only)	Element Score	PI Score
1	Yellowfin tuna	Main	100	-	100	100
	Bigeye tuna	minor	-	100	100	
2	Skipjack tuna	Main	100	-	100	100
	Bigeye tuna	minor	-	100	100	

PI 2.1.2 – Primary species management strategy

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue	SG 60	SG 80	SG 100
a	Management strategy in place		
Guided post	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the point where recruitment would be impaired.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.
Met?	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2)	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2)	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2) Y – Bigeye tuna
Justification	<p>SA 3.1.3.1 (MSC 2014) requires that yellowfin tuna is considered as a P2 species in scoring UoA 1 (skipjack tuna), and that skipjack tuna is considered as a P2 species in scoring UoA 2 (yellowfin tuna); in both cases, these were assessed as main primary species.</p> <p>Noting the MSC definition of a ‘strategy’ (Table SA8, MSC 2014), it is clear that there is a strategy in place that is expected to maintain both yellowfin tuna and skipjack tuna as main primary species, The approach includes that both species are subject to WCPFC, PNA and national and archipelagic waters management actions, supported by a robust stock assessment and extensive monitoring frameworks. CMM 2015-01 and its predecessors require that “Compatible measures for the high seas and exclusive economic zones (EEZs) are implemented so that bigeye, yellowfin and skipjack tuna stocks are, at a minimum, maintained at levels capable of producing their maximum sustainable yield as qualified by relevant environmental and economic factors including the special requirements of developing States in the WCPFC-CA as expressed by Article 5 of the Convention.”</p> <p>Tools adopted by WCPFC include effort limits in major purse seine fisheries, FAD closures, high seas closures, and a discard ban in purse seine fisheries. Additional FAD measures are also in place for 2016 and 2017. Purse seine effort controls are in place in coastal states EEZs. Explicit LRPs have been adopted for biomass and the fishing mortality rate. SG100 is met.</p> <p>Bigeye tuna is the only primary species taken in the fishery in more than negligible quantities (i.e., >0.01% of the catch), and so bigeye tuna is considered to be the only minor primary species.</p> <p>A key principle of the PNAFTF is to minimise the catch of species other than skipjack tuna and yellowfin tuna through prohibiting fishing on or within 1 nautical mile of FADs, other floating objects, and whalesharks which act as mobile FADs. Bigeye tuna is a species which has benefited particularly from this approach and managing WCPO catches of bigeye tuna has been an important focus for the PNA in recent</p>		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	<p>years (e.g., PNA 2013a, PNA 2014a, PNA 2015c). The vast majority of the catches of bigeye tuna in purse seines are taken from sets on FADs (Harley <i>et al.</i> 2014).</p> <p>The strategy in place for minimizing non-skipjack tuna and yellowfin tuna catches in the PNAFTF includes ensuring observer coverage is maintained at 100% (requirement is for 100% coverage, but some data are yet to be processed) and onboard and onshore traceability checks to ensure catches which proceed through to carry the MSC logo from the PNAFTF are from free school sets.</p> <p>This approach is considered to be a strategy because the observers monitor the requirement of not setting within 1 nm of a FAD or objects that act as a FAD, and catch composition data are also collected routinely – it is estimated that 80% of all sets are sampled by observers (S. Brouwer, SPC, pers. comm.). Catches from any sets that include a whaleshark or other object acting as a FAD, as well as catches from sets which include FAD-associated indicator species (e.g., oceanic puffer fish, ocean triggerfish and drummer) even if no FAD or objects that act as FADs are observed in the net, are ineligible to go forward to carry the MSC logo according to PNA rules; this minimizes incentives to target FADs and objects that act as FADs, helping to keep the bigeye tuna catches in the UoA to around 1%.</p> <p>Overall, there is a strategy in place for the PNAFTF to manage bigeye tuna as a minor primary species, and the fishery therefore meets the SG100 level of performance for this SI.</p>		
b	Management strategy evaluation		
Guided post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
Met?	Y	Y	Y
Justification	<p>For yellowfin tuna (P2 in UoA 1) and skipjack tuna (P2 in UoA 2), there is extensive testing through the stock assessment process to ensure that the effort and catch characteristics of the PNAFTF will ensure that these species are maintained at healthy levels. SG100 is met for these species.</p> <p>For bigeye tuna, it is important to note that observers are specifically instructed <u>not</u> to change the set designation once made (i.e., observers are instructed not to mark the set type in the observer report as ‘free school’ upon setting, but then change it to ‘FAD-set’ if, for example, a whale shark, semi-submerged log or other debris is found in the catch). This allows for a precautionary assessment of the impact of the PNAFTF, in that it means this MSC assessment is able to consider all catches that were designated as free school upon setting, not just a subset that were confirmed as being ‘free school’ at some point after hauling was completed.</p> <p>Catch data clearly demonstrate that the strategy being employed by the PNAFTF to minimise the catch of species other than skipjack tuna and yellowfin tuna is effective, with catches of bigeye tuna being maintained at around 1% of the total. The latest stock assessment for bigeye (Harley <i>et al.</i> 2014) stated “<i>Bigeye in purse catches are taken almost exclusively from sets on natural and artificial floating objects (FADs)</i>”. Harley <i>et al.</i> (2014) indicated that the impact of free school purse seine fishing on the spawning potential of bigeye tuna in the WCPO is very small relative to that of other fishing gears</p>		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	Overall, it is considered that testing (i.e., collection of detailed catch data and analysis of the impact of different fisheries on the spawning potential of bigeye tuna, showing that the free school fishery has very little impact) supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved. As such, the PNAFTF meets the SG100 requirement for this SI.		
c	Management strategy implementation		
	Guidepost	There is some evidence that the measures/partial strategy is being implemented successfully.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
	Met?	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2) Y – Bigeye tuna	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2) Y – Bigeye tuna
	Justification	<p>For yellowfin tuna (P2 in UoA 1) and skipjack tuna (P2 in UoA 2), there is clear evidence that the strategy is being implemented successfully (e.g., through effort control reports, VMS data and catch data) and is achieving its overall objective of maintaining yellowfin tuna and skipjack tuna at levels capable of producing their maximum sustainable yield (e.g., through assessments of stock status). SG100 is met for these species.</p> <p>Observer coverage in the PNAFTF is maintained at 100% (requirement is for 100% coverage, but some data are yet to be processed), and observers are trained and required to monitor the type of set undertaken on each occasion to a high level of detail (e.g., FAD, log, other floating object, whaleshark).</p> <p>Under PNA rules, catches are ineligible to go forward to carry the MSC logo if FAD-associated indicator species (i.e., oceanic puffer fish, ocean triggerfish and drummer) are subsequently identified in the catch, even if no FAD was observed at the time of fishing; this further minimises incentives to fish on FADs. The assessment team was provided with examples of reports showing where catches had been rejected from the MSC-line because FAD-associated indicator species had been identified in a catch when unloading.</p> <p>In addition, the latest stock assessment clearly demonstrates that the PNAFTF fishery has a minimal impact on the reduction of bigeye tuna spawning potential (Fig 32, Harley <i>et al.</i> 2014).</p> <p>Overall, this is considered to constitute clear evidence that the strategy is being implemented successfully, while the catch data from the fishery show that the strategy is achieving its overall objective of minimising the catch of bigeye tuna. The fishery meets the SG100 level of performance.</p>	
d	Shark finning		

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No shark species is a primary species, and so this SI is not scored.		
e				
Review of alternative measures				
	Guidepost	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2)	Y – Yellowfin tuna (P2 in UoA 1) Y – Skipjack tuna (P2 in UoA 2)	N
	Justification	It is noted that at SG60 and SG80, only main primary species are relevant. CMM 2015-01 (and CMM 2012-01 as its predecessors) requires that “To create a disincentive to the capture of small fish and to encourage the development of technologies and fishing strategies designed to avoid the capture of small tunas and other fish, CCMs shall require their purse seine vessels fishing in EEZs and on the high seas within the area bounded by 20°N and 20°S to retain on board and then land or transship at port all bigeye, skipjack, yellowfin tuna.” Exceptions to this requirement are possible where the fish are unfit for human consumption for reasons other than size or when serious malfunction of equipment occurs. As noted, this CMM was introduced specifically to encourage the development of measures to avoid discarding. Reporting of discards is also required, and subsequent reviews of discarding practices have taken place (e.g., WCPFC 2013, WCPFC 2014e). It is considered that the ban on discarding (except in specific circumstances) qualifies as a significant measure to minimize discarding, and the reviews are undertaken to consider why the discarding that does still occur is taking place. SG80 is met, but the reviews do not appear to have been undertaken biennially on a consistent basis, so SG100 is not met.		
References		Harley <i>et al.</i> 2014, PNA 2013a, PNA 2014a, PNA 2015c, WCPFC 2013, WCPFC 2014e		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				N/A

PI 2.1.2 Scoring calculation

UoAs	Species	Main / minor	Sla (60, 80, 100)	Slb (60, 80, 100)	Slc (80,100 only)	Sld (60, 80, 100)	Sle (60, 80, 100)	PI Score
1	Yellowfin tuna	Main	100	100	100	Not scored	80	95
	Bigeye tuna	minor	100	100	100	Not scored	default 80	
2	Skipjack tuna	Main	100	100	100	Not scored	80	95
	Bigeye tuna	minor	100	100	100	Not scored	default 80	

PI 2.1.3 – Primary species information

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information adequacy for assessment of impact on main primary species			
	Guidepost	<p>Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.</p>	<p>Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status.</p> <p>OR</p> <p>If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.</p>	<p>Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status.</p>
	Met?	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>	<p>Y – Yellowfin tuna (P2 in UoA 1)</p> <p>Y – Skipjack tuna (P2 in UoA 2)</p>
	Justification	<p>SA 3.1.3.1 (MSC 2014) requires that yellowfin tuna is considered as a P2 species in scoring UoA 1 (skipjack tuna), and that skipjack tuna is considered as a P2 species in scoring UoA 2 (yellowfin tuna); in both cases, these were assessed as main primary species.</p> <p>Catch data and effort data are available from the PNAFTF at a high level of detail and accuracy, and assessments of stock status are produced regularly (e.g., yellowfin tuna – Davies <i>et al.</i> 2014, and skipjack tuna – WCPFC 2016b). SG100 is met.</p>		
b	Information adequacy for assessment of impact on minor primary species			
	Guidepost		<p>Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.</p>	
	Met?		Y	
Justification	<p>Bigeye tuna is the only primary species in the catch taken in more than negligible quantities, and this species comprises just 1.159% of the PNAFTF catch so is considered a minor primary species, only (Table 15).</p>			

PI 2.1.3	Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
	<p>Observers on PNA vessels are required to be on board purse seine vessels before coming in to the PNA waters, and are cross-warranted to ensure that they can continue to function as an observer when vessels move between EEZs. There is a requirement for 100% observer coverage, and spill sampling occurs in approximately 80% of all sets, ≈ 30,000 (S. Brouwer, SPC, pers. comm.). Catch data are collected routinely and are comprehensive.</p> <p>The most recent bigeye tuna stock assessment was undertaken by Harley <i>et al.</i> (2014). The free school purse seine catch data for bigeye are incorporated in to the assessment and allow the impact of the fishery on the spawning potential of bigeye tuna to be determined. The PNAFTF clearly meets the SG100 level of performance for this SI.</p>		
c	Information adequacy for management strategy		
	Guided post	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main Primary species.
	Met?	Y	Y
	Justification	<p>There are considered to be no main primary species in the PNAFTF catch, and so the fishery meets the SG80 level of performance for this SI by default.</p> <p>Information from the high level of observer coverage on the PNAFTF vessels (requirement is for 100% coverage), and comprehensive catch data from logbooks and landings records demonstrates that the bigeye tuna catch is maintained at around 1% of the total for the fishery. These data are adequate to support the strategy to manage bigeye tuna and the evaluate with a high degree of certainty whether it is achieving its objective allows of minimising catches of bigeye tuna. The PNAFTF meets the SG100 level of performance.</p>	
References	Harley <i>et al.</i> 2014.		
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			N/A

PI 2.1.3 Scoring calculation

UoA	Species	Main / minor	Sla (60, 80, 100)	Slb (100 only)	Slc (60, 80,100)	Element Score	PI Score
1	Yellowfin tuna	Main	100	-	100	100	100
	Bigeye tuna	minor	-	100	100	100	
2	Skipjack tuna	Main	100	-	100	100	100
	Bigeye tuna	minor	-	100	100	100	

PI 2.2.1 – Secondary species outcome

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Main secondary species stock status			
	Guidepost	<p>Main Secondary species are likely to be within biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main secondary species are highly likely to be above biologically based limits</p> <p>OR</p> <p>If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.</p> <p>AND</p> <p>Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a high degree of certainty that main secondary species are within biologically based limits.</p>
	Met?	Y	Y	Y
	Justification	<p>'Secondary species' are defined by the MSC as those species that are not considered to be 'primary' species (i.e., where there are <u>not</u> "management tools and measures in place that are intended to achieve stock management objectives reflected in either limit or target reference points"), or species that are out of scope of the program, but where the definition of ETP species is not applicable (MSC 2014).</p> <p>As for primary species (See PI 2.1.1), the 'main' designation is then given where either i) "the catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA", or ii) "The species is classified as 'Less resilient' and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA." (MSC 2014).</p> <p>On this basis, there are no main secondary species in the catch, and so the PNAFTF meets the SG100 level of performance by default for this SI.</p>		
b	Minor secondary species stock status			
	Guidepost		Minor secondary species are highly likely to be above biologically based limits.	

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.		
			OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?		Y
Justification	<p>Minor secondary species are considered to be blue marlin (<i>Makaira nigricans</i>), and black marlin (<i>Istiompax indica</i>). Blue marlin comprised 0.031% of the PNAFTF catch, while black marlin comprised just 0.016% of the PNAFTF catch (Table 15).</p> <p>No other secondary species comprised more than 0.01% (i.e., 1 t in 10,000 t) of the PNAFTF catch. Rainbow runner (<i>Elagatis bipinnulata</i>) = 0.006%, kawakawa (<i>Euthynnus affinis</i>) = 0.005%, striped marlin (<i>Kajikia audax</i>) = 0.005%, frigate tuna (<i>Auxis thazard</i>) = 0.004% and mahi mahi (<i>Coryphaena hippurus</i>) = 0.003% were the only species that comprised more than 0.002% of the catch, annually (Table 15). These very low catch levels indicate that there is an essentially negligible interaction between the PNAFTF and these other secondary species.</p> <p>For blue marlin, the most recent stock assessment was undertaken by BWG (2013). No target or limit reference points have been established for the Pacific blue marlin stock, but the spawning biomass was estimated to be 29% above SSB_{MSY} in 2011, and the fishing mortality (average across 2009-2011) was 19% less than F_{MSY}. BWG (2013) concluded that the blue marlin stock in the Pacific Ocean is not being overfished and is not in an overfished state. In the period 2000-2009, 94.6% of blue marlin were taken in longline fisheries, with 3% taken by purse seine fleets (BWG 2013). Blue marlin is highly likely to be above biologically based limits</p> <p>There has been no stock assessment for Pacific black marlin, but the WCPFC purse seine catch in total has averaged just 18.9% of the average annual total catch of black marlin in the WCPFC-CA of 2,524 t for the 2010-2015 period (SPC 2016a). The catch in the PNAFTF comprises a small percentage of this total, and it is considered that this is evidence that the PNAFTF does not hinder the recovery and rebuilding of black marlin.</p> <p>Overall, the PNAFTF meets the SG100 level of performance for this SI.</p>		
References	BWG 2013, MSC 2014, SPC 2016a.		
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			N/A

PI 2.2.1 Scoring calculation

UoAs	Species	Main / minor	S _{la} (60, 80, 100)	S _{lb} (100 only)	Element Score	PI Score
1 & 2	None	Main	100	-	100	100
	Blue marlin	minor	-	100	100	
	Black marlin	minor	-	100	100	

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guided post	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.
	Met?	Y	Y	N
	Justification	<p>There are no main secondary species, and so the fishery meets the SG80 level of performance for this SI by default.</p> <p>Blue marlin and black marlin are the only minor secondary species taken in the fishery in more than negligible quantities (i.e., >0.01% of the catch, equivalent to 1 t in 10,000 t). Even so, blue marlin (0.031%) and black marlin (0.016%) comprise very small parts of the overall catch.</p> <p>A key principle of the PNAFTF is to minimise the catch of species other than skipjack tuna and yellowfin tuna through prohibiting fishing on or within 1 nautical mile of FADs, other floating objects, and whalesharks which act as mobile FADs. This approach has benefited bigeye tuna particularly, but the catch of other, secondary species is also maintained at very low levels, generally.</p> <p>The approach for managing secondary species in the PNAFTF includes ensuring observer coverage is maintained at 100% (requirement is for 100% coverage, but some data are yet to be processed – SPC, pers. comm.) and onboard and onshore traceability checks to ensure catches which proceed through to carry the MSC logo from the PNAFTF are from free school sets.</p> <p>This approach is considered to be a partial strategy because the observers monitor the requirement of not setting within 1 nm of a FAD or objects that act as a FAD, and catch composition data are also collected routinely – it is estimated that 80% of all sets are sampled by observers (S. Brouwer, SPC, pers. comm.). Any sets that include a whaleshark or other object acting as a FAD, as well as sets which catch FAD-associated indicator species (i.e., oceanic puffer fish, ocean triggerfish, drummer) even if no FAD or objects that act as FADs are observed in the net, are deemed to have come from a FAD set. As sets such as these are ineligible to go forward to carry the MSC logo according to PNA rules, this minimizes incentives to target FADs and objects that act as FADs, helping to keep the catch of species other than skipjack tuna and yellowfin tuna to <1.5% overall (<0.2% if bigeye tuna is also excluded).</p> <p>Overall, there is a partial strategy in place for the PNAFTF to manage secondary species, and the fishery therefore meets the SG80 level of performance for this SI.</p>		

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.			
b	Management strategy evaluation			
	Guided post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	Y	Y	Y
	Justification	<p>Catch data clearly demonstrate that the partial strategy being employed by the PNAFTF to minimise catch of species other than skipjack tuna and yellowfin tuna is effective. All species other than skipjack tuna and yellowfin tuna comprised <1.5% of the overall catch, and <0.2% if bigeye tuna is also excluded.</p> <p>Overall, it is considered that testing (i.e., collection of detailed catch data, together with the stock assessment for blue marlin showing that the stock is not overfished or suffering overfishing, and the comparison of catch levels of black marlin for different gears) supports high confidence that the partial strategy will work, based on information directly about the fishery and/or species involved. As such, the PNAFTF meets the SG100 requirement for this SI.</p>		
c	Management strategy implementation			
	Guided post		There is some evidence that the measures/partial strategy is being implemented successfully.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		Y	Y
	Justification	<p>There is a requirement for 100% observer coverage in the PNAFTF, and observers are trained and required to monitor the type of set undertaken on each occasion to a high level of detail (e.g., FAD, log, other floating object, whaleshark).</p> <p>Under PNA rules, catches are ineligible to go forward to carry the MSC logo if FAD-associated indicator species (i.e., oceanic puffer fish, ocean triggerfish and drummer) are subsequently identified in the catch, even if no FAD was observed at the time of fishing; this further minimises incentives to fish on FADs. The assessment team was provided with examples of reports showing where catches had been rejected from the MSC-line because FAD-associated indicator species had been identified in a catch when unloading.</p> <p>Overall, this is considered to constitute clear evidence that the partial strategy to minimise the secondary, non-skipjack tuna and yellowfin tuna catch is being implemented successfully. Catch data from the fishery showing that all species other than skipjack tuna and yellowfin tuna comprised <1.5% of the overall PNAFTF catch provide evidence that the partial strategy is achieving its overall objective. The fishery meets the SG100 level of performance.</p>		

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
d	Shark finning		
Guidepost	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
Met?	Y	Y	N
Justification	<p>SPC provided observer data showing that shark finning does occur at a low level in the PNAFTF. However, the number of finning instances has dropped considerably recently, and the overall number of animals concerned has also dropped dramatically (Table 16).</p> <p>In part, this is in response to the adoption of CMM2010-07, which requires that “CCMs shall take measures necessary to require that their fishers fully utilize any retained catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, guts, and skins, to the point of first landing or transshipment.” In addition, the vast majority of the instances of finning appear to have involved silky shark, a species that has recently been subject to enhanced management in WCPFC waters through the adoption of CMM2013-08. This requires that CCMs should consider measures directed at by-catch mitigation as well as measures directed at targeted catch to improve the status of the silky shark population, and requires that silky sharks are not retained in whole or in part in the WCPFC-CA.</p> <p>Importantly, through the MSC interpretations log, the MSC has clarified the following: <i>“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.”</i> Also, <i>“Fisheries should not be perversely penalised, for example, for putting in place very good surveillance and enforcement systems that are proving effective and still detecting and quickly resolving the odd rare case”</i> (http://msc-info.accreditation-services.com/questions/shark-finning/).</p> <p>The finning identified in the PNAFTF is not systematic, and the Assessment Team was shown evidence that PNA member countries are prosecuting vessel masters for shark-finning violations. As such, the fishery is scored 80 for this SI. It cannot score 100 as a small amount of finning does occur.</p> <p>A Recommendation (#1) is made that, for each MSC audit, the PNA provide a PNAFTF-specific enforcement and compliance summary report of CMM 2010-07 (for sharks), CMM 2011-03 (for oceanic whitetip sharks) and CMM 2013-08 (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.</p>		
e	Review of alternative measures to minimise mortality of unwanted catch		

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
	Justification	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
	Met?	Y	Y	N
	Guidepost	There are no main secondary species, and so the fishery meets the SG80 level of performance for this SI by default. The level of catch of secondary species in the PNAFTF is clearly already very low, but the Assessment Team was not able to determine that a regular review of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species was undertaken. As such, the fishery scores 80 for this SI, but not more.		
References		WCPFC CMMs		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				N/A
RECOMMENDATION NUMBER				1

PI 2.2.2 Scoring calculation

UoAs	Species	Main / minor	Sl _a (60, 80, 100)	Sl _b (60, 80, 100)	Sl _c (80,100 only)	Sl _d (60, 80, 100)	Sl _e (60, 80, 100)	Element Score	PI Score
1 & 2	Blue marlin	minor	80	100	100	N/A	80	85	85
	Black marlin	minor	80	100	100	N/A	80	85	

PI 2.2.3 – Secondary species information

PI 2.2.3	Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information adequacy for assessment of impacts on main secondary species			
	Guidepost	<p>Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status.</p> <p style="text-align: center;">OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA:</p> <p>Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.</p>	<p>Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status.</p> <p style="text-align: center;">OR</p> <p>If RBF is used to score PI 2.2.1 for the UoA:</p> <p>Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.</p>	<p>Quantitative information is available and adequate to assess with a high degree of certainty the impact of the UoA on main secondary species with respect to status.</p>
	Met?	Y	Y	Y
	Justification	There are considered to be no main secondary species in the PNAFTF catch, and so the fishery meets the SG100 level of performance by default.		
	b	Information adequacy for assessment of impacts on minor secondary species		
Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.	
Met?			Y	
Justification		<p>Blue marlin (0.031% of the PNAFTF catch) and black marlin (0.016% of the PNAFTF catch) are the only minor secondary species taken in the fishery in more than negligible quantities (i.e., >0.01%, equivalent to 1 t in 10,000 t). See Table 15 for more data.</p> <p>Observers on PNA vessels are required to be on board purse seine vessels before coming in to the PNA waters, and are cross-warranted to ensure that they can continue to function as an observer when vessels move between EEZs. There is a requirement for 100% observer coverage, and spill sampling occurs in approximately 80% of all sets, ≈ 30,000 (S. Brouwer, SPC, pers. comm.). Catch data are collected routinely and are comprehensive.</p> <p>For blue marlin, the most recent stock assessment was undertaken by BWG (2013). No target or limit reference points have been established for the Pacific blue marlin stock, but the spawning biomass was estimated to be 29% above SSB_{MSY} in 2011, and the fishing mortality (average across 2009-2011) was 19% less than F_{MSY}. BWG (2013) concluded that the blue marlin stock in the Pacific Ocean is not being</p>		

PI 2.2.3	Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.		
	<p>overfished and is not in an overfished state. In the period 2000-2009, 94.6% of blue marlin were taken in longline fisheries, with 3% taken by purse seine fleets (BWG 2013). Blue marlin is highly likely to be above biologically based limits</p> <p>There has been no stock assessment for Pacific black marlin, but the WCPFC purse seine catch in total has averaged just 18.9% of the average annual total catch of black marlin in the WCPFC-CA of 2,524 t for the 2010-2015 period (SPC 2016a). The catch in the PNAFTF comprises a small percentage of this total.</p> <p>Overall, it is confirmed that some quantitative information is adequate to estimate the impact of the UoA on minor secondary species (i.e., blue marlin and black marlin) with respect status. The PNAFTF meets the SG100 level of performance for this SI.</p>		
C	Information adequacy for management strategy		
	Guidepost	Information is adequate to support measures to manage main secondary species.	Information is adequate to support a partial strategy to manage main secondary species.
	Met?	Y	N
	Justification	<p>There are considered to be no main secondary species in the PNAFTF catch, and so the fishery meets the SG80 level of performance by default.</p> <p>Observers on PNA vessels are required to be on board purse seine vessels before coming in to the PNA waters, and are cross-warranted to ensure that they can continue to function as an observer when vessels move between EEZs. There is a requirement for 100% observer coverage, and spill sampling occurs in approximately 80% of all sets, ≈ 30,000 (S. Brouwer, SPC, pers. comm.). Catch data are collected routinely and are comprehensive.</p> <p>Nevertheless, the fishery does not meet the SG100 requirement for this SI, as this would require there to be status information on approximately 100 different secondary species, all of which are taken in the fishery in very small or negligible quantities; this information is simply not available.</p>	
References	BWG 2013, SPC 2016a.		
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			N/A

PI 2.2.3 Scoring calculation

UoAs	Species	Main / minor	Sl _a (60, 80, 100)	Sl _b (100 only)	Sl _c (60, 80,100)	Element Score	PI Score
1 & 2	None	Main	100	-	80	90	90
	Blue marlin	minor	-	100	80	90	
	Black marlin	minor	-	100	80	90	

PI 2.3.1 – ETP species outcome

PI 2.3.1	The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species			
Scoring Issue	SG 60	SG 80	SG 100	
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guidepost	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and likely to be within these limits.	Where national and/or international requirements set limits for ETP species, the combined effects of the MSC UoAs on the population/stock are known and highly likely to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a high degree of certainty that the combined effects of the MSC UoAs are within these limits.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	There are no national and/or international requirement that set limits for the ETP species that interact with the PNAFTF. This SI is therefore considered to be not relevant.		
b	Direct effects			
	Guidepost	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Known direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	Y	Y	Y – silky shark N – other ETP species
	Justification	<p>ETP species are defined by the MSC (MSC 2014) as species that are:</p> <ul style="list-style-type: none"> i) Recognised by national ETP legislation, ii) Listed on Appendix I of CITES (unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered), iii) Listed in any binding agreements concluded under the Convention on Migratory Species (CMS), or iv) Classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE). <p>The basis for defining a species as ETP has been revised through MSC Interpretations, as discussed in the main body of this report in Section 3.6.2. The MSC has also clarified that all ETP scoring elements impacted need to be included at all SG levels, even those species that are very rarely captured¹¹. However, the high level of observer coverage and detailed reporting from the PNAFTF means that some species are recorded in extremely small quantities, as shown in Table 15, and any species comprising $\leq 0.001\%$ (equivalent to 1 t in 100,000 t of catch) is only be considered briefly in this assessment.</p>		

¹¹ <http://msc-info.accreditation-services.com/questions/p2-species-assessing-negligible-interactions/>

<p>PI 2.3.1</p>	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>
	<p>Species that are included in the assessment as ETP species are listed in Table 17. Only silky shark (0.05%), whale shark (0.021%), devil manta ray (0.01%), Giant manta (0.009%), manta rays – no ID (0.002%) and false killer whale (0.0015%) made up more than 0.001% of the PNAFTF catch for 2014-2015 as recorded by independent observers.</p> <p>Other ETP species (total = 0.0017%) that are taken in the PNAFTF include oceanic whitetip shark, Risso’s dolphin, pygmy sperm whale and a number of turtle species, and seabirds. All of these were recorded in very small quantities, and only a single animal may have been recorded in some cases.</p> <p>Silky shark (0.05%)</p> <p>Silky shark is a circumtropical species, and those inhabiting the coastal and oceanic waters of the WCPO are considered a single stock for stock assessment purposes. There are no formal reference points established for this species, but Rice & Harley (2013) estimated that fishing mortality overall now exceeds F_{MSY} ($F_{CURRENT}/F_{MSY} = 4.48$), while spawning biomass has declined to levels below SB_{MSY} ($SB_{CURRENT}/SB_{MSY} = 0.70$). It was therefore considered that overfishing is occurring, and that the silky shark stock is in an overfished state (Rice & Harley 2013).</p> <p>The greatest impact on the silky shark stock is attributed to bycatch from the tuna longline fishery, but there are also significant impacts from a targeted longline fishery, and from the FAD-associated purse seine fishery which catches predominantly juvenile individuals (Rice & Harley 2013). The WCPO unassociated purse seine fishery is estimated to take a small proportion ($\approx 3\%$) of the overall catch (Figure 27). Therefore, there is a high degree of confidence that there are no significant detrimental direct effects of the PNAFTF on silky shark, and the fishery meets the SG100 level of performance for this species.</p> <p>Whale shark (0.021%)</p> <p>Rice & Harley (2012) summarised available information on the stock status of whale shark (<i>Rhincodon typus</i>) in the WCPO. The whale shark is the world’s largest fish and they noted that while there is a paucity of biological studies, it is thought to be one of the latest maturing and longest living animals on earth. While whale sharks have potentially the highest fecundity of all the worlds sharks, this is countered by estimates of age at maturity around 30 years and size at maturity over 8m.</p> <p>Whale sharks represented 0.021% of the PNAFTF catch, although it is noted that this is an estimate based on observer-estimated weights of all whalesharks that are encircled during fishing operations, and no deduction is made for any animals that were observed within the net but escaped prior to completing the pursing operation, or which were fully encircled but were subsequently released alive. SPC (2010) estimated the mortality rate of whale sharks taken in purse seines to be 12%. Using data reported by Clarke (2015), of those animals for which a fate was recorded, 11.3% of whale sharks (63 from 555 animals) were reported dead by purse seine observers in the WCPFC-CA from 2010-2014.</p> <p>Observer data indicate that the number interactions between the PNAFTF and whale sharks has averaged 61 animals annually over the period 2011-2015 (PNAO, pers. comm.). Based on the SPC (2010) estimate of mortality rate, an average of seven (7) whale sharks have suffered mortality in the PNAFTF, annually, from 2011-2015. While these estimates of mortality may be low (Clarke 2015), the known direct effects of the PNAFTF are highly likely to not hinder recovery of whale shark, and the fishery meets the SG80 level of performance for this species. Without population data, though, the fishery can score no higher.</p>

<p>PI 2.3.1</p>	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>
	<p>Devil manta ray (0.01%), Giant manta (0.009%) and Manta rays – no ID (0.002%)</p> <p>The identification of <i>Manta</i> and <i>Mobula</i> species can be difficult, and is complicated by the fact that the genus <i>Manta</i> has recently been split into the giant manta ray (<i>Manta birostris</i>) and the reef manta ray (<i>Manta alfredi</i>). There are also five devil ray species that appear to occur in PNA waters; the pygmy devil ray – <i>M. eregoodootenkee</i>, spintail devil ray – <i>M. japonica</i>, Chilean devil ray – <i>M. tarapacana</i>, Shortfin devil ray – <i>Mobula kuhlii</i>, and bentfin devil ray – <i>M. thurstoni</i>.</p> <p>Giant manta ray and Chilean devil ray are assessed as Vulnerable in the IUCN Redlist, and the Shortfin devil ray is considered to be Data Deficient, but the other devil rays are assessed as Near Threatened (indicating a lower level of risk).</p> <p>The catch of devil rays (0.010%), giant manta rays (0.009% and unidentified manta rays (0.002%) represents a very small percentage of the PNAFTF catch. Observers collect information on interactions between the PNAFTF and ray species as these are defined as ‘Species of Special Interest’. Data indicate that the number interactions between the PNAFTF and <i>Manta</i> and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO, pers. comm.). It is not clear to what extent <i>Manta</i> and devil rays are retained in the PNAFTF, but retention generally seems unlikely.</p> <p>Data on the overall post-release survival rates of <i>Manta</i> or devil rays from commercial purse seine gear are not apparently available, 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” (reported in Lawson <i>et al.</i> 2016). As noted previously, a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing species including <i>Manta</i> and devil rays (Poisson <i>et al.</i> 2012).</p> <p>There is some concern about the potential impact of purse seine fishing on <i>Manta</i> and devil rays in WCPO purse seine fisheries (Croll <i>et al.</i> 2015), but the data reported for New Zealand appear to reflect a much higher rate of interaction than in the PNAFTF. Overall, the known direct effects of the PNAFTF are highly likely to not hinder recovery of devil rays and <i>Manta</i> rays, and the fishery meets the SG80 level of performance for these species. In the absence of population data, though, the fishery can score no higher.</p> <p>False killer whale (0.0015%)</p> <p>False killer whales are found in tropical to warm temperate zones, generally in relatively deep, offshore waters of all three major oceans, although some animals occasionally move into higher latitude waters (Taylor <i>et al.</i> 2008). There is relatively little information on this species, and it is listed as Data Deficient by the IUCN.</p> <p>In the PNAFTF, false killer whales made up 0.0015% of the catch. Observer data indicate that the number interactions between the PNAFTF and marine mammals (all species) has averaged 11.4 animals annually over the period 2011-2015 (PNAO, pers. comm.).</p> <p>Mortality rates for toothed whales, including false killer whales, have been estimated at 66%, with some indication that the animals suffering mortality were not detected in the net early enough for release to be effected, such that the animals had drowned (SPC 2010). The PNAFTF catch data and mortality estimates indicate that the fishery may be responsible for the mortality of 4-6 false killer whales per year. At this level of interaction, the PNAFTF is highly likely to not hinder recovery of false killer whales,</p>

<p>PI 2.3.1</p>	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>		
		<p>and the fishery meets the SG80 level of performance for these species. Without population data, though, the fishery can score no higher.</p> <p>Other ETP species (total 0.0017%)</p> <p>Beyond the five species/groups already considered by this assessment, no species considered to be ETP comprised more than 0.0005% (500 kg in 100,000 t) of the PNAFTF catch. Seabirds are also taken in tiny numbers, with the majority of the effort in the PNAFTF occurring between 5° N and 10° S, where seabird abundance is relatively low (Waugh <i>et al.</i> 2012 and Figure 28). Malony (2005) reported that a single seabird (unidentified) was taken in 28,751 observed purse seine sets between 1994 and 2004, and stated that the low incidence of bird captures by purse-seine operations in the WCPO indicates that the risks to the sustainability of tropical bird populations in the WCPO is negligible. For all these species, at an extremely low level of incidence, the impact of the PNAFTF is highly likely to be negligible, and in some cases may mean that a single animal was captured. The PNAFTF is highly likely to not hinder recovery of these other ETP species, and the fishery meets the SG80 level of performance.</p>	
<p>c</p>	<p>Indirect effects</p>		
<p>Guided post</p>		<p>Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts.</p>	<p>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</p>
<p>Met?</p>		<p>Y</p>	<p>N</p>
<p>Justification</p>	<p>Indirect effects of the PNAFTF on ETP species considered here are those arising from impacts to feeding efficiency/prey availability caused by direct extraction of the prey, or trophic effects resulting from removing skipjack tuna and yellowfin tuna from the ecosystem. Effects from marine pollution (including, for example, lost or dumped fishing gear, oil or chemical spillages, and garbage thrown overboard) are also considered.</p> <p>The effect of fishing on the WCPO warm pool ecosystem and species at different trophic levels has been investigated through extensive modeling (e.g., Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, Lehodey <i>et al.</i> 2014). The results indicate that although the PNAFTF does impact the relative biomass of species at different trophic levels through indirect mechanisms (e.g., increasing the catch of smaller skipjack and yellowfin tuna is decreases the biomass of sharks and other apex predators but increase the biomass of other prey and smaller predatory species – Allain <i>et al.</i> 2015), the structure of the warm pool ecosystem is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community). The intrinsic resistance of the ecosystem to perturbation appears to be related to the high diversity of predators in the food web that consume a wide range of prey (Allain <i>et al.</i> 2015).</p> <p>Marine pollution incidents in the WCPFC purse seine fleet for the period 2004-2013 were investigated by Richardson <i>et al.</i> (2015). Their report indicated that, over the time period reported on, marine pollution incidents have occurred during purse seine operations in the WCPFC, Potential impacts from pollution were identified as including entanglement of marine wildlife by abandoned, lost or discarded fishing gear, and ingestion of marine litter by wildlife with potential for associated toxic chemical transfers,</p>		

PI 2.3.1	<p>The UoA meets national and international requirements for the protection of ETP species</p> <p>The UoA does not hinder recovery of ETP species</p>	
	<p>Although the Richardson et al. (2015) analysis was compromised by the limited availability of data from purse seine vessels in earlier years, and by the limited availability of any data on other vessel types, the number of pollution incidents from the 1,400-1,500 purse seine vessels considered in their report indicate that pollution from the PNAFTF fleet is highly unlikely to create unacceptable impacts to ETP species. Nevertheless, a Recommendation is set that the client work to implement the second and third initiatives identified in that report, which are as follows:</p> <p><i>ii) A regional outreach and compliance assistance programme on marine pollution prevention for fishing vessel crews, business operators and managers; and</i></p> <p>iii) Improvements in Pacific port waste reception facilities to enable them to receive fishing vessel wastes on shore.</p> <p>Overall, indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts. As not all species are considered individually in the available modeling, and because the most recent available data indicate that marine pollution incidents do occur, it cannot be said that there is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species. The PNAFTF scores 80 but does not meet the SG100 level of performance.</p>	
References	<p>Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, Clarke 2015, Croll <i>et al.</i> 2015, Lehodey <i>et al.</i> 2014, MSC 2014, Poisson <i>et al.</i> 2012, Rice & Harley 2012, Rice & Harley 2013, Richardson <i>et al.</i> 2015, SPC 2010, Taylor <i>et al.</i> 2008.</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		N/A
RECOMMENDATION NUMBER		2

PI 2.3.1 Scoring calculation

UoA	Element	S1a (60, 80, 100)	S1b (60, 80, 100)	S1c (80, 100 only)	Element Score	PI Score
1 & 2	Silky shark	-	100	80	90	85
	Whale shark	-	80	80	80	
	Devil ray	-	80	80	80	
	Giant manta ray	-	80	80	80	
	Manta rays – no ID	-	80	80	80	
	False killer whale	-	80	80	80	
	Other ETP species	-	80	80	80	

PI 2.3.2 – ETP species management strategy

PI 2.3.2	The UoA has in place precautionary management strategies designed to: <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.		
Scoring Issue	SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)		
Guidepost	There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
Met?	Not relevant	Not relevant	Not relevant
Justification	There are no national and/or international requirement that set limits for the ETP species that interact with the PNAFTF. This SI is therefore considered to be not relevant.		
b	Management strategy in place (alternative)		
Guidepost	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species
Met?	Y	Y – all other species N – Devil and manta ray	N
Justification	Interactions between the PNAFTF and ETP species are relatively rare. However, the potential for significant impacts is recognised in the Convention, which under Article 5 (Principles and Measures for conservation and management) requires that CCMs: <p>d) assess the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks;</p> <p>(e) adopt measures to minimize waste, discards, catch by lost or abandoned gear, pollution originating from fishing vessels, catch of non-target species, both fish and non-fish species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species and promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques;</p> <p>(f) protect biodiversity in the marine environment;</p>		

<p>PI 2.3.2</p>	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>
	<p>j) implement and enforce conservation and management measures through effective monitoring, control and surveillance.</p> <p>Various CMMs have been adopted and measures introduced in order to achieve these objectives with respect to the ETP species identified in this assessment of the PNAFTF; these are supported by a comprehensive catch reporting programme (e.g. through WCPFC Technical Compliance Committee reporting- e.g., TCC 2016) and a high level of observer coverage (requirement is for 100%). Ecosystem and bycatch mitigation is a standing item on the WCPFC-SC agenda (e.g., WCPFC 2016b), and there is an ongoing research programme to improve understanding of the interactions and implications of the different WCPO fisheries on non-target species.</p> <p><u>Silky shark (0.05%)</u></p> <p>The WCPO unassociated purse seine fishery is estimated to take a small proportion (≈3%) of the overall catch of silky shark (Figure 27). CMM 2013-08 recognises the recommendation from Rice & Harley (2013) that the Commission should consider measures directed at by-catch mitigation as well as measures directed at targeted catch to improve the status of the silky shark population, and requires that silky sharks are not retained in whole or in part in the WCPFC-CA. A good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing shark and ray species (Poisson <i>et al.</i> 2012). In combination with the data collection and research efforts already specified, this qualifies as a strategy that is in place that is expected to ensure the PNAFTF does not hinder the recovery of silky shark; this element scores 80.</p> <p><u>Whale shark (0.021%)</u></p> <p>Observer data indicate that the number interactions between the PNAFTF and whale sharks has averaged 61 animals annually over the period 2011-2015 (PNAO, pers. comm.). Based on the SPC (2010) estimate of mortality rate, an average of seven (7) whale sharks have suffered mortality in the PNAFTF, annually, from 2011-2015, although these estimates may be low (Clarke 2015).</p> <p>As part of the Nauru Agreement, and as a condition of access to the fisheries zones of the Parties, no purse seine vessel shall engage in fishing or related activity in order to catch tuna associated with whale sharks (PNA 2010). The WCPFC also adopted CMM 2012-04, which prohibits vessels from setting on tuna schools associated with a whale shark, and ensuring that all reasonable steps are taken to ensure the safe release of any whale sharks that are encircled during purse seine operations. A good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing shark and ray species, including whale shark (Poisson <i>et al.</i> 2012). In combination with the data collection and research efforts already specified, this is considered to be a strategy that is in place that is expected to ensure the PNAFTF does not hinder the recovery of whale sharks; this element scores 80.</p> <p><u>Devil manta ray (0.01%), Giant manta (0.009%) and Manta rays – no ID (0.002%)</u></p> <p>The identification of <i>Manta</i> and <i>Mobula</i> species can be difficult, and is complicated by the fact that the genus <i>Manta</i> has recently been split into the giant manta ray (<i>Manta birostris</i>) and the reef manta ray (<i>Manta alfredi</i>). There are also five devil ray species that appear to occur in PNA waters; the pygmy devil ray – <i>M. eregoodootenkee</i>, spinetail devil ray – <i>M. japonica</i>, Chilean devil ray – <i>M. tarapacana</i>, Shortfin devil ray – <i>Mobula kuhlii</i>, and bentfin devil ray – <i>M. thurstoni</i>.</p> <p>Observer data indicate that the number interactions between the PNAFTF and <i>Manta</i> and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO,</p>

<p>PI 2.3.2</p>	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>
	<p>pers. comm.). It is not clear to what extent <i>Manta</i> and devil rays are retained in the PNAFTF, but retention generally seems unlikely. Croll <i>et al.</i> (2015) noted that while extrapolated from limited observer data, the relatively high mobulid bycatch rate and intensity of effort suggest the WCPFC purse seine fisheries have a large mobulid bycatch compared with others.</p> <p>At the 12th WCPFC Scientific Committee (SC) meeting (SC12), the designation of <i>Manta</i> and <i>Mobula</i> species as 'key shark species' was proposed, which would result in improved data collection and reporting of the <i>Manta</i> and <i>Mobula</i> 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 <i>Mobula</i> species as part of their curricula (WCPFC 2016b). SC12 also recommended that the WCPFC considers adopting guidelines for safe release of <i>Manta</i> and <i>Mobula</i> 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 <i>Manta</i> and <i>Mobula</i> species (Poisson <i>et al.</i> 2012). However, there is nothing in place for ray species consistent with the requirements to release silky shark, oceanic whitetip shark, or whale shark.</p> <p>Overall, there are considered to be measures in place that are expected to ensure the UoAs do 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 so two Conditions of Certification (#5 for UoA 1 and #6 for UoA 2) are introduced.</p> <p><u>False killer whale (0.0015%)</u></p> <p>Observer data indicate that the number interactions between the PNAFTF and marine mammals (all species) has averaged 11.4 animals annually over the period 2011-2015 (PNAO, pers. comm.).</p> <p>The incidental capture of cetaceans is addressed under CMM 2011-03, which prohibits CMM-flagged vessels from setting a purse seine net on a school of tuna associated with a cetacean in the high seas and exclusive economic zones of the WCPFC-CA. In the event that a cetacean is unintentionally encircled in the purse seine net, the master of the vessel shall: (a) ensure that all reasonable steps are taken to ensure its safe release. This shall include stopping the net roll and not recommencing fishing operation until the animal has been released and is no longer at risk of recapture. In combination with the data collection and research efforts already specified, this is considered to be a strategy that is in place that is expected to ensure the PNAFTF does not hinder the recovery of false killer whale; this element scores 80.</p> <p><u>Other ETP species (total 0.0017%)</u></p> <p>Beyond the five species/groups already considered by this assessment, no species considered to be ETP comprised more than 0.0005% (500 kg in 100,000 t) of the PNAFTF catch.</p> <p>Nevertheless, there are measures in place to address impacts on other species in the WCPFC-CA more generally - CMM 2008-03 is specific to the conservation and management of sea turtles, and requires a range of measures including, to the extent practicable to avoid the encirclement of turtles and to safely release all turtles, including those observed entangled in FADs. Guidance is also provided on the</p>

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	<p>handling on sea turtles as part of the WCPFC CMM package¹², while a good practice guide has been produced and distributed to inform fishermen of the best techniques for releasing species including turtles (Poisson <i>et al.</i> 2012). As noted for false killer whale, the incidental capture of cetaceans is addressed under CMM 2011-03. Overall, there is considered to be a strategy in place for managing the impact of the PNAFTF on other ETP species, and the fishery scores 80, here.</p>		
c	Management strategy evaluation		
Guidepost	<p>The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).</p>	<p>There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.</p>	<p>The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.</p>
Met?	Y	Y	N
Justification	<p>The requirement for 100% observer coverage and a comprehensive sampling regime allow for the collection of data at a very high level, and research is reviewed and management measures proposed through the WCPFC SC process.</p> <p>Overall, the approach taken to minimise interactions between the PNAFTF and ETP species, and safely release any ETP species which do interact with the fishery, is based on information directly about the fishery and the species involved. The levels of catch of ETP species in the PNAFTF, together with evidence that some animals do survive post-release, and that survival rates can be improved with training, provide an objective basis for confidence that the measures/strategy will work. The PNAFTF meets the SG80 level of performance. There has been no quantitative analysis of the impacts on ETP species, and so the fishery does not meet the SG100 level of performance.</p>		
d	Management strategy implementation		
Guidepost		<p>There is some evidence that the measures/strategy is being implemented successfully.</p>	<p>There is clear evidence that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).</p>
Met?		Y	<p>Y – silky shark N – all other species</p>

¹² <https://www.wcpfc.int/system/files/booklets/31/CMM%20and%20Resolutions.pdf>

PI 2.3.2		<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • meet national and international requirements; • ensure the UoA does not hinder recovery of ETP species. <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>	
Justification	<p>The requirement for 100% observer coverage and a comprehensive sampling regime allow for the collection of data on interactions and monitoring of implementation at a very high level. This provides evidence that the measures/strategy is being implemented successfully for ETP species in general.</p> <p>The recent assessment of silky shark (Rice & Harley 2013) indicated that WCPO unassociated purse seine fishery takes a small proportion (≈3%) of the overall catch of WCPO silky shark (Figure 27). Observer data indicate that retention rates of silky shark have declined substantially since CMM 2013-08 came in to force. Therefore, for silky shark, there is clear evidence that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective of minimising impacts on silky shark. Silky shark scores 100 for this SI.</p>		
e	Review of alternative measures to minimize mortality of ETP species		
	Guidepost	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.
	Met?	Y	Y
	Justification	There is an ongoing research programme to improve understanding of the interactions and implications of the different WCPO fisheries on non-target species, and ecosystem and bycatch mitigation is a standing item on the SC agenda (e.g., WCPFC 2016b). Measures are implemented as appropriate. The PNAFTF meets the SG100 level of performance.	
References	Clarke 2015, PNA 2010, Poisson <i>et al.</i> 2012, Rice & Harley 2013, TCC 2016, WCPFC 2016b, WCPFC CMMs.		
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			5 & 6

PI 2.3.2 Scoring calculation

UoAs	Element	Sla (60, 80, 100)	Slb (60, 80, 100)	Slc (60, 80,100)	Sld (80, 100 only)	Sle (60, 80, 100)	Element Score	PI Score
1 & 2	Silky shark	-	80	80	100	100	90	75
	Whale shark	-	80	80	80	100	85	
	Devil ray	-	60	80	80	100	75	
	Giant manta ray	-	60	80	80	100	75	
	Manta rays – no ID	-	60	80	80	100	75	
	False killer whale	-	80	80	80	100	85	
	Other ETP species	-	80	80	80	100	85	

PI 2.3.3 – ETP species information

PI 2.3.3	Relevant information is collected to support the management of UoA impacts on ETP species, including: <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information adequacy for assessment of impacts			
	Guidepost	Qualitative information is adequate to estimate the UoA related mortality on ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.	Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries for the status of ETP species.
	Met?	Y	Y	Y – silky shark N – all other species
	Justification	The requirement for 100% observer coverage and a comprehensive sampling regime allow for the collection of data on interactions and monitoring of implementation at a very high level. Clearly, some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species, and all elements achieve the SG80 level of performance. For silky shark, the recent assessment (Rice & Harley 2013) indicated that WCPO unassociated purse seine fishery takes a small proportion (≈3%) of the overall catch of WCPO silky shark (Figure 27). Post-release mortality/survival data have been collected, and research is ongoing to determine how to improve the post-release survival rate (e.g., Muir <i>et al.</i> 2013). For silky shark, then, quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of silky shark. Therefore, silky shark scores 100 for this SI.		
b	Information adequacy for management strategy			
	Guidepost	Information is adequate to support measures to	Information is adequate to measure trends and support a strategy to	Information is adequate to support a comprehensive strategy to manage

PI 2.3.3		<p>Relevant information is collected to support the management of UoA impacts on ETP species, including:</p> <ul style="list-style-type: none"> Information for the development of the management strategy; Information to assess the effectiveness of the management strategy; and Information to determine the outcome status of ETP species. 		
		manage the impacts on ETP species.	manage impacts on ETP species.	impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Y	Y	Y – silky shark N – all other species
	Justification	<p>Similar to Sla, the requirement for 100% observer coverage and a comprehensive sampling regime allow for the collection of data on interactions and monitoring of implementation at a very high level. Information is adequate to measure trends and support a strategy to manage impacts on ETP species, and all elements achieve the SG80 level of performance for this SI.</p> <p>For silky shark, the data collected are utilised and included within a stock assessment that estimates status against conventional MSY-based reference points (Rice & Harley 2013). Post-release mortality/survival data have been collected, and research is ongoing to determine how to improve the post-release survival rate (e.g., Muir <i>et al.</i> 2013). For silky shark, information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. Silky shark meets the SG100 level, here.</p>		
References		Muir <i>et al.</i> 2013, Rice & Harley 2013,		
OVERALL PERFORMANCE INDICATOR SCORE:				85
CONDITION NUMBER (if relevant):				N/A

PI 2.3.3 Scoring calculation

UoAs	Element	Sla (60, 80, 100)	Slb (60, 80, 100)	Element Score	PI Score
1 & 2	Silky shark	100	100	100	85
	Whale shark	80	80	80	
	Devil ray	80	80	80	
	Giant manta ray	80	80	80	
	Manta rays – no ID	80	80	80	
	False killer whale	80	80	80	
	Other ETP species	80	80	80	

PI 2.4.1 – Habitats outcome

PI 2.4.1	The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Commonly encountered habitat status			
	Guidepost	The UoA is unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	Y	Y	Y
	Justification	The PNAFTF occurs in the EEZs (i.e., not including archipelagic waters) of Papua New Guinea, Kiribati, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Solomon Islands, Tuvalu and Tokela. The water depth in the areas fished is very deep, usually in excess of 2000 m, while the gear extends to no more than 250 m depth, and there is no possibility that the fishery would routinely contact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats. As such, the PNAFTF scores 100, here.		
b	VME habitat status			
	Guidepost	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	As noted for SIa, the water depth in the areas fished by the PNAFTF is very deep, usually in excess of 2000 m, and there is no possibility that the fishery would routinely contact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats. As such, this SI is not relevant.		
c	Minor habitat status			
	Guidepost			There is evidence that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			Y

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.
	Justification	As noted for Sla, the water depth in the areas fished by the PNAFTF is very deep, usually in excess of 2000 m, and there is no possibility that the fishery would routinely contact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats. As such, the PNAFTF scores 100, here.
References		None
OVERALL PERFORMANCE INDICATOR SCORE:		100
CONDITION NUMBER (if relevant):		N/A

PI 2.4.1 Scoring calculation

UoAs	Sla (60, 80, 100)	Slb (60, 80 100)	Slc (100 only)	Score
1 & 2	100	Not relevant	100	100

PI 2.4.2 – Habitats management strategy

PI 2.4.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guidepost	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Y	Y	N
	Justification	The PNAFTF is undertaken in deep, oceanic waters, and fishing is not permitted within 12 nm of the coast or in archipelagic waters. All vessels are tracked by VMS and there is a requirement for 100% observer coverage, essentially eliminating the possibility that fishing can occur in an area where the gear might contact the seabed. Given the cost of the purse seine gear used, and the fact that it is held up by a float line, there is also a very low possibility of gear loss that could result in habitat impacts. Together, these measures comprise a partial strategy that ensures the PNAFTF does not impact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats. The PNAFTF scores 80 for this SI, but it does not meet SG100 in the absence of a specific habitat 'strategy' (that includes a mechanism for the modification of fishing practices in the light of identifying unacceptable impacts – Table SA8, MSC 2014).		
b	Management strategy evaluation			
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.
	Met?	Y	Y	Y
	Justification	Knowledge in relation to the way purse seine fishing gear is used as well as the sea areas where the fleet operates (open ocean, deep waters) is sufficient to discount any significant impacts on seabed habitats from the PNAFTF. The Assessment Team considers this to constitute testing that supports high confidence that the partial strategy will work, such that the fishery scores 100 for this SI.		
c	Management strategy implementation			
	Guidepost		There is some quantitative evidence that the measures/partial strategy is being implemented successfully.	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.		
	Met?		Y	Y
	Justification	Comprehensive VMS coverage ensures that shallower areas within 12 nm of the coast, or in archipelagic waters, are not fished. There is no indication that the PNAFTF impacts demersal habitats, and there is no evidence that there is any potential for significant adverse interaction with pelagic habitats. VMS tracking provides clear, quantitative evidence that the partial strategy is being implemented successfully and is achieving its objective of ensuring that the PNAFTF does not impact demersal habitats. The PNAFTF scores 100, here.		
d		Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs		
	Guided post	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is clear quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	Y	Y	Y
	Justification	VMS data provide clear quantitative evidences that the UoA complies with its 12 nm and archipelagic management requirements. The Assessment Team is not aware of any relevant protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries. As such, the fishery meets the SG100 level of performance.		
References		None		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				N/A

PI 2.4.2 Scoring calculation

UoAs	Sl _a (60, 80, 100)	Sl _b (60, 80 100)	Sl _c (80, 100 only)	Sl _d (60, 80, 100)	Score
1 & 2	80	100	100	100	95

PI 2.4.3 – Habitats information

PI 2.4.3	Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Information quality			
	Guided post	<p>The types and distribution of the main habitats are broadly understood.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>
	Met?	Y	Y	N
Justification	<p>As noted for PI2.1.1., the PNAFTF is undertaken in deep, oceanic waters, and fishing is not permitted within 12 nm of the coast or in archipelagic waters. All vessels are tracked by VMS and there is a requirement for 100% observer coverage, all but eliminating the possibility that fishing could occur in an area where the gear might contact the seabed. Given the cost of the purse seine gear used, and the fact that the nets are held up by a float line, there is also a very low possibility of gear loss that could result in habitat impacts.</p> <p>It is considered that the nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA; SG80 is met. SG100 is not met as, to the knowledge of the Assessment Team, the distribution of all habitats is not known over their range.</p>			
b	Information adequacy for assessment of impacts			
	Guided post	<p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p>	<p>Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>OR</p>	<p>The physical impacts of the gear on all habitats have been quantified fully.</p>

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.		
		Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
Met?	Y	Y	N	
Justification	<p>The water depth in the areas fished by the PNAFTF is very deep, usually in excess of 2000 m, while the gear extends to no more than 250 m depth, such that there is no possibility that the fishery would routinely contact demersal habitats. There is no evidence that there is any potential for significant adverse interaction with pelagic habitats.</p> <p>The Assessment Team is content that information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear, such that SG80 is met</p> <p>The physical impacts of the gear have not been quantified fully, however (noting that, because benthic impacts are extremely unlikely, this would be an exercise of very limited value), so SG100 is not met.</p>			
c	Monitoring			
Guidepost		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.	
Met?		Y	N	
Justification	<p>All PNAFTF vessels are tracked by VMS and there is a requirement for 100% observer coverage, all but eliminating the possibility that fishing could occur in an area where the gear might contact the seabed, and clearly meeting the SG80 level of performance.</p> <p>Changes in habitat distributions over time are not measured to the knowledge of the Assessment Team, so SG100 is not met.</p>			
References	None			
OVERALL PERFORMANCE INDICATOR SCORE:				80
CONDITION NUMBER (if relevant):				N/A

PI 2.4.3 Scoring calculation

UoAs	Sl _a (60, 80, 100)	Sl _b (60, 80 100)	Sl _c (80, 100 only)	Score
1 & 2	80	80	80	80

PI 2.5.1 – Ecosystem outcome

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Ecosystem status			
	Guidepost	The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Y	Y	Y
	Justification	<p>The MSC defines 'key ecosystem elements' as "the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the UoA. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity" (SA3.16.3 MSC 2014).</p> <p>Further MSC guidance states that "key ecosystem elements may include trophic structure and function (in particular key prey, predators, and competitors), community composition, productivity pattern (e.g. upwelling or spring bloom, abyssal, etc.), and characteristics of biodiversity" (GCB3.18.1, MSC 2014).</p> <p>The PNAFTF takes place in the western equatorial Pacific, in an area described as the 'warm pool', a biogeochemical province that is characterized by low salinity, low nitrates, high temperature, deep thermocline, low surface chlorophyll and maximum chlorophyll located at 90m depth, and is generally delimited by a 29°C surface isotherm and a salinity front (Figure 29). Associated with the warm pool is the cold tongue (Figure 29), an upwelling system with high salinity, high nitrates, low temperature, shallow thermocline, high surface chlorophyll and maximum chlorophyll at the surface (Allain <i>et al.</i> 2007).</p> <p>At the boundary between the two zones, the WCPO warm pool – cold tongue convergence zone is an oceanographic feature that is variable in terms of hydrography, nutrient availability and zonal extension, but the interactions are considerable drivers of ecosystem productivity and high order predator dynamics in the warm pool ecosystem (Lehodey <i>et al.</i> 2003).</p> <p>Allain <i>et al.</i> (2007) used Ecopath and Ecosim modelling processes to investigate the WCPO warm pool ecosystem. In their balanced model, skipjack tuna occupied a central position in the system as a key predator and prey species, with high biomass, high production, high consumption and important cannibalism. Juvenile skipjack tuna was a major source of food for all the top predators.</p> <p>For the reassessment of the PNAFTF, the ecosystem is therefore defined as the WCPO warm pool pelagic ecosystem. The key ecosystem elements are then defined as i) the WCPO warm pool – cold tongue oceanographic convergence zone, and ii) skipjack tuna as a key predator and prey species within the warm pool foodweb.</p> <p>With respect to i) the WCPO warm pool – cold tongue oceanographic convergence zone, this is a major oceanographic system and nothing that occurs in the PNAFTF could disrupt this key element underlying ecosystem structure and function to a point</p>		

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
	<p>where there would be a serious or irreversible harm. For this element, therefore, the PNAFTF meets the SG100 level of performance.</p> <p>With respect to ii) skipjack tuna as a key predator and prey species within the warm pool foodweb, estimates of spawning biomass of skipjack tuna in the WCPO are well above the level that will support MSY ($SB_{2015}/SB_{MSY} = 2.56$ for the base case and range 1.81–2.93 across the sensitivity models explored), and current fishing mortality is only approximately half the MSY level ($F_{2011-14}/F_{MSY}=0.45$ for and range 0.40–0.59 across the sensitivities for the reference case) (WCPFC 2016b).</p> <p>Allain <i>et al.</i> (2007) noted that their balanced model of the warm pool ecosystem was one of many possibilities that could fit the defined constraints of the system. However, they also noted that skipjack tuna appears to be a very resilient species, such that it was nearly impossible to eliminate it from the system with a top-down control (i.e., fishing). Together with the healthy stock status for PNAFTF, this is considered to be evidence that the PNAFTF is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. For this element, therefore, the PNAFTF also meets the SG100 level of performance</p>		
References	Allain <i>et al.</i> 2007, Lehodey <i>et al.</i> 2003, MSC 2014, WCPFC 2016b.		
OVERALL PERFORMANCE INDICATOR SCORE:			
100			
CONDITION NUMBER (if relevant):			
N/A			

PI 2.5.1 Scoring calculation

UoAs	Element	Sl _a (60, 80, 100)	Element score	PI Score
1 & 2	WCPO warm pool – cold tongue oceanographic convergence zone	100	100	100
	Skipjack tuna as a key predator and prey species within the warm pool foodweb	100	100	

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Management strategy in place			
	Guided post	There are measures in place, if necessary which take into account the potential impacts of the fishery on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan, in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.
	Met?	Y	Y	N – element 1 Y – element 2
Justification	<p>For the reassessment of the PNAFTF, the ecosystem is defined as the WCPO warm pool pelagic ecosystem. The key ecosystem elements are then defined as i) the WCPO warm pool – cold tongue oceanographic convergence zone, and ii) skipjack tuna as a key predator and prey species within the warm pool foodweb.</p> <p>A partial strategy to restrain the effects of the PNAFTF on the WCPO warm pool – cold tongue oceanographic convergence zone is not necessary as it is a major oceanographic feature that will not be impacted by the fishery. Nevertheless, SG100 requires that there is a strategy in place, so the fishery meets SG80 but does not meet the SG100 level of performance.</p> <p>With respect to skipjack tuna as a key predator and prey species within the warm pool foodweb, the objective of the WCPFC Convention is to “ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement.” The Convention also notes that CCMs are “Conscious of the need to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimize the risk of long-term or irreversible effects of fishing operations.” (WCPFC 2000).</p> <p>For skipjack tuna as a key predator and prey species, it is considered that there is a strategy in place for the PNAFTF, consisting of a plan, which addresses all main impacts of the fishery. The measures essentially comprise those in place to manage effort on the skipjack tuna stock through the PNA VDS. Through the VDS, a TAE limits the total number of fishing days that can be fished in PNA members’ EEZs. The developments of the VDS and CMM 2015-01 and its predecessors now mean that an effort cap for purse seine fishing has been adopted across the WCPO. In addition, the harvest strategy for skipjack tuna includes appropriate monitoring and stock assessment, as well as target and limit reference points. The fishery meets the SG100 level of performance for skipjack tuna as the second key ecosystem element.</p>			
b	Management strategy evaluation			
	Guided post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or	There is some objective basis for confidence that the measures/partial strategy will work, based on some information	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
		comparison with similar fisheries/ ecosystems).	directly about the UoA and/or the ecosystem involved	and/or ecosystem involved
	Met?	Y	Y	N – element 1 Y – element 2
	Justification	<p>A partial strategy to restrain the effects of the PNAFTF on the WCPO warm pool – cold tongue oceanographic convergence zone is not necessary given that it is a major oceanographic feature. Nevertheless, SG100 requires that there is a partial strategy/strategy in place, so the fishery meets SG80 by default but does not meet the SG100 level of performance.</p> <p>Modelling of the warm pool ecosystem by Valerie <i>et al.</i> (2007) that indicated skipjack tuna appears to be a very resilient species, such that it was nearly impossible to eliminate it from the system with a top-down control (i.e., fishing), together with healthy future projections of skipjack tuna stock status as presented by WCPFC (2016b) comprise testing that supports high confidence that the strategy will work. The PNAFTF meets the SG100 level of performance for skipjack tuna as the second key ecosystem element.</p>		
c Management strategy implementation				
	Guided post		There is some evidence that the measures/partial strategy is being implemented successfully.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		Y	N – element 1 Y – element 2
	Justification	<p>A partial strategy to restrain the effects of the PNAFTF on the WCPO warm pool – cold tongue oceanographic convergence zone is not necessary given that it is a major oceanographic feature. Nevertheless, SG100 requires that there is a partial strategy/strategy in place, so the fishery meets SG80 by default but does not meet the SG100 level of performance for this SI.</p> <p>The current stock status of skipjack tuna ($SB_{2015}/SB_{MSY} = 2.56$ for the base case, and $F_{2011-14}/F_{MSY}=0.45$ for the base case. WCPFC (2016b) provides clear evidence that the strategy is being implemented successfully and is achieving its objective. For this SI, the PNAFTF meets the SG100 level of performance for skipjack tuna as the second key ecosystem element.</p>		
References		Valerie <i>et al.</i> 2007, WCPFC 2000, WCPFC 2016b.		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				N/A

PI 2.5.2 Scoring calculation

UoAs	Element	S1a (60, 80,	S1b (60, 80 100)	S1c (80, 100 only)	Element Score	PI Score
1 & 2	WCPO warm pool – cold tongue oceanographic	80	80	80	80	90
	Skipjack tuna as a key predator and prey species within the warm pool foodweb	100	100	100	100	

PI 2.5.3 – Ecosystem information

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.		
Scoring Issue	SG 60	SG 80	SG 100
a	Information quality		
	Guided post	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.
	Met?	Y	Y
	Justification	<p>For the reassessment of the PNAFTF, the ecosystem is defined as the WCPO warm pool pelagic ecosystem. The key ecosystem elements are then defined as i) the WCPO warm pool – cold tongue oceanographic convergence zone, and ii) skipjack tuna as a key predator and prey species within the warm pool foodweb.</p> <p>The WCPO warm pool – cold tongue system and its impact on ocean temperature, salinity, stratification, circulation and production is well studied (e.g., An <i>et al.</i> 2012, Ganachaud <i>et al.</i> 2012, Lehodey <i>et al.</i> 1997, Lehodey 2001, Lehodey <i>et al.</i> 2003, Miller 2007, Taschetto <i>et al.</i> 2014), in particular because of the global significance of the ENSO events on climate and oceanic productivity that emanate from this region. Oceanographic variability is a key work area for the SPC, including through the development of Ecopath/Ecosim and Spatial Ecosystem and Population Dynamics Model (SEAPODYM) models for the WCPO. (http://www.spc.int/oceanfish/en/ofpsection/ema/environmental-research/oceanographic-variability). Ecosystem and bycatch mitigation is a standing item on the WCPFC-SC agenda (e.g., WCPFC 2016b). Information is clearly adequate to broadly understand this key element.</p> <p>The warm pool area produces almost 80% of the tuna caught by purse-seine and other surface gears in the WCPO, while catches of deep water tuna by longline is more widely distributed over the tropical and sub-equatorial areas (Briand 2010). Large scale movements of tropical tuna in the western central equatorial Pacific have been correlated with the position of the oceanic convergence zone, produced where the warm pool meets the cold tongue (Lehodey <i>et al.</i> 1997). This nutrient-rich zone supports high concentrations of forage fish species in a band several hundred kilometres wide along the eastern edge of the warm-water pool. Tuna appear to seasonally follow this convergence zone to remain in waters with relatively high concentrations of prey species (Lehodey 2001) in conditions suitable for reproduction.</p> <p>Extensive studies have been undertaken on skipjack tuna to understand their role as a key predator and prey species within the warm pool foodweb (e.g., Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, and as summarised in Lehodey <i>et al.</i> 2014). Stock assessments for skipjack tuna are undertaken regularly, most recently in 2016 (McKechnie <i>et al.</i> 2016), and the assessment takes into account major features relevant to the biology and the wider WCPO. Information is clearly adequate to broadly understand this key element.</p>	
b	Investigation of UoA impacts		
	Guided post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information,	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information,

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
		but have not been investigated in detail.	and some have been investigated in detail.	information, and have been investigated in detail.
	Met?	Y	Y	Y
	Justification	<p>It is considered that there are no main interactions between the PNAFTF and the WCPO warm pool – cold tongue oceanographic convergence zone, as it is a major oceanographic feature.</p> <p>Extensive research efforts are made to understand the effect of fishing on skipjack tuna (e.g., McKechnie <i>et al.</i> 2016), and the implications for the warm pool ecosystem (e.g., Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, and as summarised in Lehodey <i>et al.</i> 2014). The PNAFTF meets the SG100 level of performance.</p>		
c		Understanding of component functions		
	Guidepost		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are understood.
	Met?		Y	Y
	Justification	<p>The PNAFTF is a significant fishery at the global scale, while the region in which it occurs is a major driver of global climate variability. As such, considerable research efforts have been undertaken to understand the warm pool ecosystem and the fishery's impact within it.</p> <p>The main functions of the target species (skipjack tuna and yellowfin tuna), primary species (bigeye tuna), secondary species (blue marlin, black marlin and other more minor species) and ETP species (sharks, rays, cetaceans and turtles) and habitats (pelagic) are understood, and the impact of the PNAFTF on these components are identified. The fishery meets the SG100 level of performance for this SI.</p>		
d		Information relevance		
	Guidepost		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		Y	Y
	Justification	<p>As noted for SId, considerable research efforts have been undertaken to understand the warm pool ecosystem, and complex modeling with different scenarios has been undertaken to allow the main consequences for the ecosystem to be inferred (e.g., Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, Lehodey <i>et al.</i> 2014). The PNAFTF meets the SG100 level of performance for this SI.</p>		

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
e	Monitoring			
	Guidepost		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		Y	Y
	Justification	The PNAFTF is a significant fishery at the global scale, while the region in which it occurs is a major driver of global climate variability. As such, considerable research efforts have been undertaken to understand the warm pool ecosystem and the fishery's impact within it. Information is clearly adequate to support the development of strategies to manage ecosystem impacts, and so the fishery meets the SG100 level of performance.		
References		Allain <i>et al.</i> 2007, Allain <i>et al.</i> 2015, An <i>et al.</i> 2012, Briand 2010, Ganachaud <i>et al.</i> 2012, Lehodey <i>et al.</i> 1997, Lehodey 2001, Lehodey <i>et al.</i> 2003, Lehodey <i>et al.</i> 2014, McKechnie <i>et al.</i> 2016, Miller 2007, Tascheto <i>et al.</i> 2014, WCPFC 2016b.		
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				N/A

PI 2.5.3 Scoring calculation

UoA	Element	Sla (60, 80 only)	Slb (60, 80 100)	Slc (80, 100 only)	Sld (80, 100 only)	Sle (80, 100 only)	Element Score	PI Score
1 & 2	WCPO warm pool – cold tongue oceanographic convergence zone	80	100	100	100	100	100	100
	Skipjack tuna as a key predator and prey species within the warm pool foodweb	80	100	100	100	100	100	

Principle 3 scoring tables

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 		
Scoring Issue	SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management		
Guidepost	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
Met?	Y	Y	Y
Justification	<p>The PNA fishery (skipjack and yellowfin) targets shared stocks of highly migrating species straddling the Western Pacific Ocean. The PNAFTF operates within three broad management regimes. The overarching management regime is underpinned by the RFMO (WCPFC) to which all members of the PNA have obligations under the convention including the application of WCPFC conservation and management measures (CMMs). Secondly each member state (and those part of the PNA) has national legislation inclusive of fisheries laws which are binding legal instruments consistent with the principles and provisions of UNCLOS, UNFSA and CBD. A third level within the management framework is the PNA level (Nauru Agreement) with agreed implementing arrangements including Minimum Terms and Conditions between signatories. The Nauru Agreement is therefore integrated into the legal (fisheries) framework at a National level which in turn has obligations under the WCPFC convention.</p> <p>These three elements therefore seek to ensure there is an effective national legal system and framework, and that effective cooperation exists between not only the PNA parties, but also the consolidation of the PNA members' national commitments to the regional management of the fishery. In order to meet SG60 the national legal framework needs to meet the MSC management outcomes consistent with Principles 1 and 2. In all respects the framework in place provides the instruments for effective fisheries management including the fundamental issues related to effective management of the stock(s) exploited as well as the sustainability of the fishery through the legally binding adoption of the precautionary approach as is incorporated into both national laws and tuna management plans of each member of the PNA (see WCPFC Articles. 5 & 7). Evidence of the commitment to management outcomes consistent with P1 and P2 is also provided in the 3rd Implementing arrangement of the Nauru Agreement, particularly Article II, which outlines (a) <i>the effectiveness of the measures in reducing fishing mortality, especially on juvenile bigeye and yellowfin tuna; and (b) the extent to which compatible measures are being applied on the high</i></p>		

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 			
		<p><i>seas and in the waters of other Members of the Western and Central Pacific Fisheries Commission.</i></p> <p>To meet SG80 there needs to be organized and effective cooperation between parties. This is clearly evidenced through both the participation of PNA states at the WCPFC level as well as between cooperating states within the PNA with agreements between parties on the principles associated with stock management and ecosystem-based management. These principles are also incorporated into the MTCs under which the Parties to the Nauru agreement are bound. The evidence presented to support this include the agreements themselves, the national legislation of each country and regular meetings between Parties (PNA) reflecting consistent cooperation and agreement. Under the FSMA (Article 12.2) “<i>Nationals and fishing vessels of one Party which fail to comply with the provisions of this Arrangement or with the laws and regulations of any other Party relating to fisheries shall be dealt with in accordance with the relevant laws and regulations of that Party</i>”.</p> <p>Specifically with regard to P2 and ecosystems, some countries have undertaken ecological risk assessments (ERAs) so as to better understand the impacts of the purse seine fishery on the broader ecosystem. While not all PNA member have undertaken ERAs the nature of these risk assessments are equally applicable across the broader ecosystem affected by the PNA member nations. Further each country has developed Tuna Fishery Management Plans – these largely capture (and recognize) the ecosystem aspects of the area in which the PNA fishery is exp[edited (see Table 18). Further, entrenched in the principle fisheries national legislation of each country, conservation objectives are stated (noting that each country has drafted fisheries legislation that differs in style and wording but which captures the ecosystem context either explicitly or implicitly). For example, under the Kiribati Act of 2010, the main objective (Para. 2b) states “<i>protect fish fish stocks and the marine environment</i>”, and for RMI, Title 51 Chapter 2 has extensive reference to stock and marine conservation (with similar text in the other National Legislation); SG80 is met.</p> <p>To meet SG100, there needs to be binding procedures governing cooperation with other parties. The texts of the legislation varies between each PNA member, but is nevertheless consistent in legal interpretation as described for SG80. The Nauru Agreement does not explicitly refer to ecosystems, although it is largely an agreement between parties on the common management of the stocks between the PNA member countries. All PNA members are members of WCPFC whose mandate is the responsible management of the fishery resources (inclusive of ecosystems) – as members of WCPFC each country is party to both the Nauru agreement and WCPFC and as such all parties are bound (committed) to the conservation objectives of the WCPFC (underpinned by UNCLOS and the Fish Stocks Agreement on highly migratory species). Further both the FSMA and Palau Agreement outline commitments of parties to the management of the WCPO tuna stocks including cooperation between states; SG100 is met.</p>		
<p>b</p>	<p>Resolution of disputes</p>			
	<p>Guidepost</p>	<p>The management system incorporates or is subject by law to a mechanism for the resolution of legal</p>	<p>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be</p>	<p>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the</p>

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 		
	<p>disputes arising within the system.</p>	<p>effective in dealing with most issues and that is appropriate to the context of the UoA.</p>	<p>context of the fishery and has been tested and proven to be effective.</p>
<p>Met?</p>	<p>Y</p>	<p>Y</p>	<p>N</p>
<p>Justification</p>	<p>The management system incorporates a framework at three levels. At the WCPFC level, the dispute settlement provisions of the UN Fish Stocks Agreement apply to disputes between WCPFC Members (Art 31) (see Article 31 of the Convention – Procedures for the settlement of disputes). The provisions relating to the settlement of disputes set out in Part VIII of the Agreement apply, <i>mutatis mutandis</i>, to any dispute between members of the Commission, whether or not they are also Parties to the Agreement. Further, all WCPFC Members (including PNA members) are legally bound to apply the precautionary approach as parties to the WCPFC Convention. Article 8.2 of the Palau Arrangement provides for disputes arising out of the interpretation or implementation of the Arrangement to be settled through peaceful negotiations. The PNA instruments are regarded as sub-regional agreements for the purpose of Article 30 of the UN Fish Stocks Agreement, which means that the dispute settlement provisions of UNCLOS apply to the Nauru Agreement, the Palau Arrangement and the VDS.</p> <p>The Palau Arrangement also has clear rules with respect to the VDS and the procedures for the allocation of effort days between parties. Although not stated explicitly the VDS scheme administrator has the responsibility to report on and manage the VDS, including resolving issues as they arise.. At the National level the individual Parties (national) Acts and related regulations form the basis for dealing with disputes. Contraventions of the law at a National level are therefore dealt with through a legal process and subject to legal procedures, including arbitration and or an appeals process.</p> <p>SG60 is met as there is a mechanism for resolving disputes.</p> <p>The PNA manage the VDS – effort control is therefore an integral part of the WCPFC management of both the skipjack tuna and yellowfin tuna stocks (PNA effort approximates >60% of purse seine effort in the WCPFC). No evidence could be found of disputes from the documentation provided to the assessment team. As a general rule it is clear that any disputes are resolved through negotiation between parties either through consensus or compromise (banks pers comm.). In some instances, nations may have had minor disagreement with the WCPFC e.g. with regard to sovereignty within EEZ. The WCPFC Convention also provides for recognition of the interests of small scale and artisanal fishers within the overall framework for sustainability as does National Fishery Management Plans. As far as the Nauru agreement is concerned the UNFSA protocols are followed - no evidence could be found that these protocols were not being applied.</p> <p>The management system is therefore considered to be effective in dealing with most issues as far as dispute resolution is concerned. SG80 is met.</p> <p>Although the legal framework is transparent no evidence could be found that the dispute mechanisms are “tested” or have proven to be effective. Minutes of PNA meetings presented to the assessment team did not provide any information related</p>		

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 		
	<p>to disputes although there are records of meetings and discussions associated with the allocation of effort days within the VDS.</p> <p>At the RFMO level the Convention allows for the Commission to hold regular meetings and WCPFC members and observers have representation at these meetings and can raise issues as needed – these can often result in CMMs addressing concerns, although these might not be the direct result of dispute resolution. Under Article 21 of the Convention, the Commission is required to promote transparency in its decision-making processes and other activities. Within the PNA however it is not clear that disputes between parties have occurred, or if they did, that the records of such disputes and their resolution is documented. As there is no evidence that dispute system either within the PNA has been tested the overall management system does not meet SG100 requirements.</p>		
c	Respect for rights		
Guidepost	<p>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>
Met?	Y	Y	Y
Justification	<p>At National level, fisheries legislation and management strategies contained in tuna management plans for PNA members have mechanisms to protect the interests of traditional and small-scale fishers, as described by Banks <i>et al.</i> (2011).</p> <p>The WCPFC Convention (WCPFC 2000) recognizes the interests of small scale and artisanal fishers within its framework for sustainability and requires that the needs of SIDs, territories and possessions, and coastal communities dependent on stocks including those taken in the fishery be recognised in the allocation of catch or effort (Art 10 (3) and Resolution 2008-01) and their capacity strengthened (see CMM 2013-06 Conservation and Management). SG60 is met.</p> <p>Supporting evidence relating to the importance of the tuna fisheries to communities is given in EAF approach (for example) adopted by Tuvalu (FFA 2009) “<i>reflecting customary values in tuna policy and planning, which includes recognition of the importance of the contribution of tuna to food security, protection of the interests of small scale tuna scale fishers, respect for local bylaws and bycatch management</i>”.</p> <p>The adoption of EAF in National Fishery Management Plans underpins the commitments to both sustainability and ecosystems (Principles 1 & 2) and is also consistent with CMM 2013-07 Conservation and Management Measures on the special requirements of Small Island Developing States and Territories). Article 30 of</p>		

<p>PI 3.1.1</p>	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainability in the UoA(s); and • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
	<p>the Convention further provides for recognition of the interests of small scale and artisanal fishers within the overall management framework in the WCPFC.</p> <p>Although legal rights have not yet been allocated by WCPFC to small scale fishers, the mechanism of doing this is under consideration (see Article 30 of the convention). WCPFC also has a relationship with the Pacific Islands Forum Fisheries Agency, which represents the interests of the independent island States in the region. Further the national fishery acts emphasize the protection of indigenous fishing rights and customs. SG80 is met.</p> <p>PNA objectives implicitly include optimizing the benefits of tuna resources for members. Under the WCPFC convention there is a mechanism formally committing to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. This includes Under Article 7 of the WCPFC : <i>Implementation of principles in areas under national jurisdiction</i> : the needs of each country (national jurisdiction) is acknowledged viz. :</p> <ol style="list-style-type: none"> 1. The principles and measures for conservation and management enumerated in article 5 shall be applied by coastal States within areas under national jurisdiction in the Convention Area in the exercise of their sovereign rights for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks. 2. The members of the Commission shall give due consideration to the respective capacities of developing coastal States, in particular Small Island Developing States, in the Convention Area to apply the provisions of articles 5 and 6 within areas under national jurisdiction and their need for assistance as provided for in this Convention. <p>Further, this article explicitly embraces the commitments of each country under their national legislation (refer to the numerous Acts, Titles and regulations) that commit to protecting the rights of the traditional folk to benefit from the resources under their jurisdiction.</p> <p>Further, under Article 10 of the commission (para3.a-j) the rights of SIDS and coastal communities is explicitly stated as well as the “the record of compliance by the participants with conservation and management measures”. SG100 is met</p>	
<p>References</p>	<p>Banks <i>et al.</i> 2011, FFA 2009, Medley & Powers 2015, National Fishery Acts (FSM 2002, Nauru 1997, PNG 1998, RMI 1997, Solomons 2015, Tuvalu 2008, Tokelau 1997/2016), PNA national fishery management plans (tuna), PNA National Plans of Action (IUU, Shark) and EAF Risk Assessments, PNA 1982, PNA 1990, PNA 2010, PNA 2016a, PNA 2016e, UNCLOS 1994, UNSFA 1995, WCPFC 2000, WCPFC 2004.</p>	
<p>OVERALL PERFORMANCE INDICATOR SCORE:</p>		<p>95</p>
<p>CONDITION NUMBER (if relevant):</p>		<p>N/A</p>

PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guidepost	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	Y	Y	Y
	Justification	<p>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction at the WCPFC, PNA and national levels as well as support / service organisations FFA and SPC. The functions of these organisations are explicitly defined and well understood. For example the PNA Agreement, as well as the two main arrangements (the FSMA and the Palau Arrangement (PNA 2016e) are unambiguous and explicit agreements outlining roles and responsibilities, between parties of the PNA; SG60 and SG80 are met.</p> <p>All organisations and related processes, e.g., WCPFC, SPC, FFA as well as Parties (Nations) are clearly defined and demonstrated through National policies, Acts, Titles and regulation; SG100 is met.</p>		
b	Consultation processes			
	Guidepost	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.
	Met?	Y	Y	N
	Justification	<p>There are regular formal and informal consultation processes at the WCPFC, PNA, and FFA and other regional & international fora and national levels. The organisations and individuals are clearly defined – this includes consultation with bilateral partners and national stakeholders (NGOs included). The WCPFC in particular canvases for, processes, and accepts information from many sources and views.</p>		

<p>PI 3.1.2</p>	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>
	<p>With regard to the PNA specifically, there is an explicit consultation process amongst members, as well as commitments to report regularly to the WCPFC on PNA activities. These would include, for example, the VDS system and allocations of effort days, reports on the national and PNA observer activities and the ongoing developments related to the Fishery Information Systems (FIMs) used by the PNA (this system is closely integrated between PNA members as well as the WCPFC, SPC and FFA). The same would apply to compliance aspects such as the VMS systems used by the PNA vessels with compatibility of systems and reporting requirements between PNA and the FFA monitoring systems.</p> <p>The main affected parties requiring pertinent information would include for example SPC (scientific data), Technical Compliance Committee (TCC) and the FFA (Compliance and administration information including VDS). This information (PNA), including VMS, VDS reporting and Observer reports are provided freely to the RFMO and integrated into the regional information systems – roles and responsibilities are clear.</p> <p>The consultation process provides opportunity for involvement, and no information was found indicating difficulties for parties wishing to be involved. External observers are permitted at PNA meetings at the discretion of the PNA (including those for the FSMA and Palau Arrangement), although meetings reports (e.g., PNA 2015g, PNA 2017a, PNA 2017b, PNA 2017c – seen by the Assessment Team) are not typically made publicly available because they contain confidential, financially sensitive information (therefore, covered under CR2.0 4.3.3, MSC2014).</p> <p>It was also evident that the consultation process was ongoing between all management entities and that they met regularly, not only within the formal processes of the WCPFC and the PNA but also on an ongoing basis by the PNA itself to address issues as they arise. Further, the integrated fishery management system used by the PNA on all vessels and by all members allows for ongoing interrogation by members (and any other approved organisation with access to the system e.g. FFA and SPC).</p> <p>Whilst roles and responsibilities are generally well defined, WCPFC has had a number of problems with flag states not applying appropriate controls to all their vessels, and in some cases there appear to be conflicts between requirements for confidentiality and the responsibilities to provide information necessary for management (Medley & Powers 2015). These problems are not in key areas in the sense that they do not prevent WCPFC completing its primary tasks, however they undermine its overall effectiveness and increase risks to sustainability. For example, while stock assessments provide estimates of stock status up to the current year, the SC has noted that the incomplete submission of data increases uncertainty in the assessments and encourages all members to provide data in accordance with the WCPFC data rules. PNA and individual nations manage their own Observer programs and submit these data to WCPFC, SPC and FFA – this is primarily done through the PNA FIMs system.</p> <p>At national and international levels the functions, roles and responsibilities of organisations involved in the management processes are explicitly defined and well understood for all areas of responsibility. It was noted however that the review of the VDS states that <i>“the VDS is governed through consensus. There is no decision making provision or dispute resolution process within the PA, although a very basic dispute resolution provision is included in the FSMA. Decisions are taken by consensus, in accordance with regional custom. This could lead to a minority of Parties preventing important decisions being made that they disagree with. This heightens uncertainty for both Parties and harvesters and potentially reducing the</i></p>

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>			
		<p><i>ability of Parties to collectively maximise the benefits of participating in the VDS</i> (PNA 2015b).</p> <p>SG 60 and SG 80 requirements are met by WCPFC and National Government and PNA processes. SG 100 is not met because the management system cannot demonstrate consideration of all the information or explain how it uses such information in decisions across all responsible jurisdictions</p>		
c	Participation			
	Guidepost		<p>The consultation process provides opportunity for all interested and affected parties to be involved.</p> <p>The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.</p>	
	Met?		Y	N
	Justification	<p>The WCPFC holds an annual regular meeting, which follows the annual meetings of the SC, the TCC. There are also extensive, regular formal and informal consultation processes through the PNA, FFA and other regional & international fora as well as at national levels. Other organisations have access to the main management bodies as formal observers or informally. These processes seek and accept information, and demonstrate consideration of the information. Scientific reports state exactly what information is being used.</p> <p>Participation in PNA meetings is open to Nauru Agreement parties, to FFA members and observers, including industry partners and NGOs, on application to the PNA Secretariat. There is sufficient evidence to conclude that all interested parties have the opportunity and are encouraged to participate in consultation processes. Formal arrangements are in place to facilitate engagement; SG80 is met.</p> <p>Some information used by management other than the scientific information may not always be clearly reported by WCPFC. Medley & Powers (2015) for example report that effort limits are vague, and public information may not be available that clearly justifies the limits applied when the decision was made. In addition, while the WCPFC processes explain how information is used or not used, Banks <i>et al.</i> (2011) note that other components of the management system are not always transparent as it is not clear how the information might have been used or justification provided for all information which is rejected.</p> <p>Therefore although at the international and national levels the management system includes consultation processes that regularly seek and accept relevant information, including local knowledge, it is not conclusive at the level so SG100 is not fully met. The PNAFTF therefore scores 80 for this SI.</p>		
References	<p>Banks <i>et al.</i> 2011, Medley & Powers 2015, PNA 2015b, PNA 2015g, PNA 2016e, PNA 2017b Poseidon 2016, WCPFC 2004, WCPFC, SC and TCC meeting records (e.g., WCPFC 2014a, WCPFC 2015a, WCPFC 2015b), WCPFC 2016e.</p>			
OVERALL PERFORMANCE INDICATOR SCORE:			85	
CONDITION NUMBER (if relevant):			N/A	

PI 3.1.3 – Long term objectives

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Objectives			
	Guided post	Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.
	Met?	Y	Y	Y (partial)
	Justification	<p>To score this PI, consideration had to be given to how the precautionary approach and policy was considered outside of the UoA. While the PNA and fishery-specific aspects have policy at national level the most critical aspect is the policy level and application of the precautionary approach at the RFMO level, i.e. regional. In this regard nothing has changed since the fishery was first certified. At the WCPFC level there remains clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach applicable within the WCPFC CMMs.</p> <p>For example, Article 2 of the WCPFC convention specifies that the Commission has the objective to “ensure through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the WCPO in accordance with the 1982 Convention and Agreement [UNCLOS and FSA respectively]”. Article 5 of the Convention then provides principles and measures for achieving this conservation and management objective. More specifically Article 5(c) requires the Commission to apply the precautionary approach in decision-making, and Article 6 outlines the means by which this will be given effect, including through the application of the guidelines set out in Annex II of the FSA. Article 10 of the Convention is consistent with MSC principles and objectives in specifying long term objectives of “maintaining or restoring populations...above levels at which their preproduction may become seriously threatened”.</p> <p>It is not clear that, for stock assessments at least, the precautionary approach is fully applied throughout the fleets fishing with different gears in the WCPO. The bigeye tuna assessments (2010, 2011 and 2014), for example, indicated that bigeye tuna fishing mortality exceeded levels consistent with MSY. Precautionary LRPs have been set and CMMs updated but it is not clear from information available to the Assessment Team that these actions have, to date, sufficiently reduced exploitation levels on bigeye specifically.</p> <p>As indicated in Banks <i>et al.</i> (2011), the Nauru agreement (the core PNA instrument) does not explicitly require objectives consistent with the precautionary approach and other important principles required to be applied under the WCPF Convention.</p> <p>At the fisher-specific level, the Palau Arrangement, as well as the VDS and national laws and fishery management plans strengthen the commitments of PNA to regional management (WCPFC). The Nauru Agreement itself is primarily a management tool and does not explicitly adopt the precautionary approach (although this applies to the specific management system under assessment i.e. the PNAFTF). The VDS itself, which is founded on the 2010 effort limitation for the purse seine fishery is implicitly</p>		

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.
	<p>precautionary, although the 2010 effort level has remained in place as the stocks are considered healthy.</p> <p>National legislation (the policy and Acts of PNA members) vary in their wording, although all reflect the principles of sustainability and support regional management without compromising national interests. Although the PNA has demonstrated its ability to implement management measures, reports on the compliance and transparency of PNA members specifically are not readily available (noting that there is a recently completed IUU by MRAG (2016) on Pacific fisheries).</p> <p>Overall, therefore, the WCPFC provides explicit and clear long term objectives, including the precautionary approach. This meets the SG60 and SG80. For the most part, WCPFC and the PNA Agreement (inclusive of the implementing arrangements) require implementation of these objectives. However, the WCPFC does not fully implement them, for example because the management has not restricted the overfishing of bigeye tuna. Further, PNA does not explicitly require objectives consistent with the precautionary approach and other important principles required to be applied under the WCPFC. Therefore, SG100 is only partially met.</p> <p>A non-binding Recommendation is made (#3) that the PNA should formally establish precautionary policies both within the PNA and within the individual Parties. These should acknowledge the link of objectives between the WCPFC, the PNA and the individual Parties.</p>
References	Banks <i>et al.</i> 2011, MRAG Asia Pacific 2016, PNA national fishery management plans, PNA 1982, PNA 2011, PNA 2016, WCPFC 2000.
OVERALL PERFORMANCE INDICATOR SCORE:	90
CONDITION NUMBER (if relevant):	N/A
RECOMMENDATION NUMBER	3

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC’s Principles 1 and 2.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Objectives			
	Guided post	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery-specific management system.
	Met?	Y	Y	Y (partial)
	Justification	<p>This PI focuses on the fishery-specific management system. The association between the PNA and WCPFC (refer to long-term objectives for WCPFC covered in PI’s 3.1.1, 3.1.2 and 3.1.3) also requires that the specific management system is consistent with the fishery objectives (but not the strategies) for this PI.</p> <p>Objectives relating to P1 and P2 Outcomes are endorsed by each member state and are set out in various WCPFC CMMs related to target fish stocks (including CMM 2014-01; CMM 2014-04; CMM, including CMM 2014-01; CMM 2014-04; CMM 2014-07), sea turtles (CMM 2008-03), seabirds (CMM2012-07), sharks (CMM 2014-05; CMM 2013-08; CMM 2011-4; CMM 2010-07), whale sharks (CMM 2012-04), cetaceans (CMM 2011-03). Objectives are also laid out in the different national Fishery Management Plans and the Palau Arrangement (VDS). The objectives of the fishery management system are therefore implicitly consistent with MSC Principles 1 and 2, apply to both UoAs and therefore SG60 is met.</p> <p>The management measures applied by the WCPFC are both short and long-term. This includes the overarching objective of: <i>“to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 United Nations Convention on the Law of the Sea and the 1995 UN Fish Stocks Agreement.”</i></p> <p>CMMs are reviewed regularly and are updated or new ones introduced. The PNA effort approximates 60% of purse seine effort in the WCPO and, by virtue of this, the endorsement of the CMMs is both implicit and explicit within the fishery management system. The most critical management objective however is the control of purse seine effort through the VDS. The VDS is clearly an evolving mechanism aiming to improve and address issues as is evident in the numerous documents presented by the PNA. While the PNA / members endorse and are committed to CMMs and other measures introduced by the WCPFC it is not clear if the PNA explicitly endorse both short and long-term objectives. With regard to the VDS and harvest control rules, the PNA specifically requested the SPC to evaluate candidate HCRs for skipjack (Ref. PNA Annual (35th) meeting, march 2016). Text extracted from this meeting (with report) states :</p> <p><i>The primary objectives of the HCRs, as drawn from PNA management objectives, are to maintain the stock at biomass levels close to the agreed TRP (50% SBF=0) with minimal risk of falling below the LRP (20% SBF=0) over the long term (20 to 30 years) and to maintain stability in effort in the medium term (10 to 15 years). The HCR is expected to remain in place in the short to medium term pending the</i></p>		

<p>PI 3.2.1</p>	<p>The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.</p>
	<p><i>development and implementation of a broader HCR by the WCPFC. In this analysis effort changes defined by the HCR were applied only to those purse seine fisheries under the control of the PNA (fleets operating in regions 2, 3 and 5 of the assessment model). Those changes did not apply to activities within the archipelagic waters (AW) of the PNA (which for the purpose of this analysis has also been assumed to remain constant at 2012 effort levels) or in the 'competitive fringe'.</i></p> <p>It is clear that while the PNA is committed to the development of HCRs the process is tied to the WCPFC. PNA nevertheless explicitly applied effort management with an implicit precautionary objective. The VDS itself is primarily an effort management tool with an implicit long-term sustainability objective pegged on their understanding of the state of the stock as determined by the WCPFC-SC.</p> <p>Further evidence related to PNA objectives was provided in the PNA 2nd surveillance audit (Scott & Stokes 2013). The 32nd annual meeting of the PNA explicitly covered the issue of MSC and the need for short term objectives, viz paragraph 55: <i>"The Parties endorsed a specific recommendation on short term objectives relating to bycatch and ecosystem management, noting that the PI 3.2.1 SG 80 short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system, taking into account that short term objectives to achieve the desired outcomes for non-target species (Principle 2), are guided by the results of scientific data analysis and assessment. These analyses identify whether main non-target species (retained, bycatch, endangered, threatened and protected species) are highly likely to be within biologically based limits or if outside such limits support a short term objective of identifying and implementing mitigation measures and strategies consistent with ensuring that the unit of certification does not hinder recovery and rebuilding, or create disruption to the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</i></p> <p>Further, from this report the PNA agreed that: <i>"a management system must include an explicit undertaking to work closely with relevant scientific bodies to ensure emerging issues in non-target species of relevance to the unit of certification are promptly identified. In turn, the PNA will actively collaborate with scientific monitoring activities that underpin such studies. Where serious or other important issues are identified in this research and monitoring of relevance to the unit of certification, appropriate management actions are to be taken in the short term to reduce impacts. These actions will be adapted where necessary on the basis of further scientific advice, as well as: "objectives within CMM2012-01 encompass all tropical tuna species, and hence include yellowfin and bigeye tuna".</i></p> <p>The surveillance audit concluded that the fishery met the single scoring issue at SG 80 of PI 3.2.1 and the condition was closed (Scott & Stokes 2013).</p> <p>CMM 2014-01 (the Conservation and Management Measure for Bigeye, Yellowfin and Skipjack Tuna in the Western and Central Pacific Ocean), includes explicit and measurable operational objectives for all three key tuna species. Available information suggests that the main concerns raised during the PNA assessment of this PI, have been largely overcome. CMM 2014-01 also incorporates high seas purse seine effort limits and requires the establishment of limits for non-PNA Pacific Island Parties.</p> <p>WCPFC management systems are the major provider of objectives for the fishery (including both UoAs). WCPFC short and long term objectives are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, meeting SG 60 and SG 80 requirements.</p> <p>With regard to the PNA effort limits, the development of the VDS has been closely linked to the WCPFC being cognisant of the most recent stock assessments. The benchmark for the current effort regime remains the 2010 effort level and at time of</p>

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.	
	<p>assessment remains at the 2014-2016 level agreed (PNA 2014b). This decision stressed the <i>"link between the VDS TAEs and WCPFC requirements and the scientific advice need to be clearly established by the PNA. Decisions taken on adjustment to the VDS scheme to be based on best available information"</i>. The information used in this decision (and thereafter) is supported by SPC scientific advice based on SPC logsheet data, information compiled by the PNA Office and FFA as well as any additional work commissioned through PNA or other management organisation.</p> <p>Although aspects of the SG100 requirements may be met, for example with the explicit incorporation of F_{MSY} as a measurable default target reference point in recent CMMs, it cannot be concluded that well defined and measurable objectives are applied throughout the specific fishery management system, so the PNAFTF doesn't fully meet the SG100 requirements. A partial score of 90 is therefore awarded.</p>	
References	Banks <i>et al.</i> 2011, PNA 2014b, PNA 2016c, PNA 2016e, Scott & Stokes 2013, WCPF 2000.	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		N/A

PI 3.2.2 – Decision-making processes

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
Scoring Issue	SG 60	SG 80	SG 100
a	Decision-making processes		
	Guided post	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.
	Met?	Y	Y
	Justification	<p>At the WCPFC level, there are established decision-making processes in the Convention and these are operationalised in the processes of the Scientific Committee and Technical Compliance Committee as well as the commission (refer also to PI 3.1.3). Those decision-making processes result in comprehensive set of CMMs and strategies to achieve the specific objectives in the purse seine fishery.</p> <p>PNA also has well-established decision-making processes which have resulted in measures and strategies contributing to the WCPO fisheries management (purse seine) which underpin the effective management of the WCPO purse seine fisheries. Consensus is the general rule for decision-making by both the Commission and PNA Members during the annual meetings of both the Commission and the PNA. If consensus cannot be reached, voting, grounds for appealing decisions, conciliation and review are all part of the established decision-making process, as described in Article 20 of the Convention.</p> <p>The decision-making processes are operationalised through the processes of the Scientific Committee, the Technical and Compliance Committee and the Commission itself. The information used to inform decision making is published. Conservation and Management Measures are binding, but Resolutions are non-binding. All management measures apply equally inside EEZ and on high seas.</p> <p>Examples of how decisions-making processes are effected by the PNA to achieve fishery-specific objectives is demonstrated in the two key arrangements for PNA members that facilitate the licensing and use of flag state vessels within the PNA area – the Palua Arrangement and the FSMA. The FSMA, for example, is a reciprocal purse seine access agreement effectively requiring the commitment of vessel days to a regional pool for access by purse seine vessels flagged to participating PNA Parties; i.e. it acts to limit effort. It outlines clearly the obligations of both “Parties” and other “Flag State” purse seine vessels licensed to fish by the parties concerned. (Defined as in Article 1 “fishing vessel of the Parties” means any purse seine fishing vessel flying the flag of or based in a Party to this Arrangement; Further, under Article 2 (Objectives), the jurisdictional obligations are outlined “to allow access to the exclusive economic and fisheries zones of the Parties by purse seine fishing vessels on terms and conditions which are consistent with the provisions of the Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery. This implies that flag states and any vessels they might license fall under the jurisdiction of the licensing coastal state and therefore related obligations to the WCPFC including decisions that result in measures and strategies to achieve the fishery-specific objectives including biological reporting, compliance, observers, electronic reporting, VMS etc (as followed through by Flag States who enforce management measures on their own vessels (see Schedule 1 of the FMS Arrangement) as well as by coastal states within their own EEZ (as applies to the PNA). Note also that the</p>	

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
	<p>FMSA is managed by an Administrator independent of the PNA which is the Director of the South Pacific Forum Fisheries Agency).</p> <p>Further, through the “third arrangement implementing the Nauru Agreement setting forth additional terms and conditions of access to the fisheries zones of the parties (as amended 11th September 2010) the PNA effectively enforces the FAD closures of the WCPFC to all PNA parties as well as licensed vessels and flag states fishing for the parties. In effect, this is another example of how the WCPFC fishery measures are effected through the PNA.</p> <p>Decision-making processes relating to fishery objectives are therefore established and are implemented and result in measures and strategies to achieve these objectives. SG 60 and SG 80 are met.</p>		
b	Responsiveness of decision-making processes		
Guidepost	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
Met?	Y	Y	N
Justification	<p>The PNA has an established effective decision-making processes which responds to issues identified in relevant research, monitoring, evaluation and consultation. All PNA members have management plans that are applied at national level. Critically the PNA management system is underpinned by a professional and technical fishery information system that enhances the decision-making system and allows for near real-time decisions. The IFIMs application used by observers as well as the VMS systems (including AIS) are effective tools accessible to members and managed through the PNA office as well as linked to the FFA and WCPFC (noting that access to these systems is controlled for obvious reasons).</p> <p>Responses to serious issues are generally undertaken via implementation of WCPFC CMMs. Information on fishing vessels and IUU activities from FFA (as well as PNA) is used in decision making on the issuing or renewal of permits. Together, both the WCPFC and PNA as well as service providers (FFA, SPC) respond timeously to issues through an effective communication network.</p> <p>WCPFC decision-making processes allow consideration of serious and important issues through its committees (SC and TCC) and at the Commission itself. Stock assessments and studies presented at the SC (predominantly by SPC) identify serious issues, such as overfishing (e.g. Bigeye tuna) at the regional level. These issues are addressed through regionally agreed CMMs. A series of measures to control catch and effort within the WCPFC-CA were taken in 2013. The system allows Commission members to be fully informed of the issues under consideration and enable participation in informed decision-making. The PNA also respond to important issues and allow consultation and participation.</p> <p>The Commission can be shown to react to important issues in a transparent manner. Evidence presented to the assessment team suggested that the decision-making</p>		

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p>process of the PNA is, as a general rule, clear and transparent. Not all meeting reports of the PNA were provided, although it is understood that PNA meeting reports and decisions are generally available on request.</p> <p>At the national level, 'issues' are identified during research and monitoring, and responses may be formal or informal through discussion at various fora, such as working groups. The assessment team does not have full evidence that decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes respond to serious issues in a timely manner so SG 60 and SG 80 are met. It cannot be said that the decision-making process responds to all issues, particularly at the PNA level so SG100 is not met.</p>	
c	Use of precautionary approach		
Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
Met?		Y	
Justification	<p>As indicated in PI 3.1.3, Sla, at the RFMO level, the WCPFC Convention requires that the members of the Commission, directly and through the Commission, apply the precautionary approach. The Convention requires that Commission be more cautious when information is uncertain, unreliable or inadequate and does not use the absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures (Medley and Powers 2015). In all cases, decisions are required to be based on the best scientific information available, and the Commission makes adequate provision for this to be achieved. Article 2 of the WCPFC convention specifies that the Commission has the objective to “ensure through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the WCPO in accordance with the 1982 Convention and Agreement [UNCLOS and FSA respectively]”. Article 5 of the Convention then provides principles and measures for achieving this conservation and management objective. More specifically Article 5(c) requires the Commission to apply the precautionary approach in decision-making and Article 6 outlines the means by which this will be given effect, including through the application of the guidelines set out in Annex II of the FSA.</p> <p>At the PNA level, Banks <i>et al.</i> (2011) concluded in the initial PNA MSC assessment that the best available information is used for decision-making, but there is a lack of clarity in the links between decisions on the VDS and the requirements of WCPFC CMM 2008-01 and the best available scientific information. A condition was set in relation to this issue. The 2nd surveillance audit for the PNA fishery (Scott & Stokes, 2013) examined progress against this condition and concluded that the Client Action Plan had sufficiently addressed this shortcoming and that SG 80 requirements are met for that fishery.</p> <p>The basis for this conclusion was: “provision of a description of the decision making process and development of an approach to improved operation of the VDS; and provision of information on the VDS scheme to improve clarity on the way the scheme works. The surveillance audit also cited the presence of representatives of the Pew Foundation and Greenpeace at the PNA 8th Annual Meeting as indicative that the</p>		

<p>PI 3.2.2</p>	<p>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</p>		
		<p><i>PNA process is open and transparent. PIP tuna management plans typically commit to the precautionary approach”.</i></p> <p>The PNA process, both within their own systems as well as the conditions set by the previous MSC certification, have evolved positively. Decisions are made timeously through an integrated fishery information system. As discussed in para. 3.1.3a the precautionary approach is not adopted explicitly by the PNA, although the communication networks introduced as well a member commitments to the WCPFC demonstrate an implicit commitment to the precautionary approach to management of the purse seine fishery.</p> <p>At National level, the PNA have Acts, Titles and Regulations in place that are precautionary and are underpinned by UNCLOS. For just two examples, the Fisheries Management Act 2015 (Solomons) defines “precautionary approach” as meaning “a decision making principle that acknowledges that where there is a threat of serious or irreversible environment harm, lack of scientific certainty shall not be used as a reason to prevent or postpone action to mitigate the environmental harm”; similarly, the Fisheries Management Amendment Act (2015) for PNG also emphasizes: “apply the precautionary and ecosystem approach in sub section ..(Article 6 (25) 2i”.</p> <p>There is sufficient information to conclude that decision-making processes for the regional, PNA and National level are based on the best available information and the precautionary approach, meeting this SG80 requirement.</p>	
<p>d</p>	<p>Accountability and transparency of management system and decision-making process</p>		
<p>Guidepost</p>	<p>Some information on the fishery’s performance and management action is generally available on request to stakeholders.</p>	<p>Information on the fishery’s performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>	<p>Formal reporting to all interested stakeholders provides comprehensive information on the fishery’s performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>
<p>Met?</p>	<p>Y</p>	<p>Y</p>	<p>N</p>
<p>Justification</p>	<p>There are three levels of accountability and transparency of the management system.</p> <ol style="list-style-type: none"> 1. As discussed previously, accountability and transparency at the Commission level is clear and demonstrated through Commission meetings and the various scientific, compliance and other structures implemented by the WCPFC as needed 2. At PNA and National level decisions are made with consensus and no evidence was found to suggest that PNA members were either party to decisions that were either not transparent of suggested lack of accountability. <p>All PNA agreements are legal documents signed and agreed by all PNA members. The process is both transparent and implies accountability to uphold the agreements (such as the MTCs and VDS arrangements). The most critical decision-making process relates to the implementation of the VDS. The review of the VDS clearly</p>		

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.		
		<p>outlined issues and processes within the PNA management and recommended changes, some of which would increase transparency and accountability. Reporting on the VDS and negotiations relating to the allocation of effort days is transparent and published in meeting report as well as in submissions by the PNA to the WCPFC.</p> <p>Reporting is formalized, information feeds directly from the PNA-established information systems to the FFA/SPC/WCPFC etc. Observers (Industry and relevant NGOs) are present at PNA meetings, but there is no explicit reporting structure to Observers. At a national level countries respond to their commitments to both the WCPFC convention and agreements within the PNA.</p> <p>The PNA respond in a timely manner on performance aspects of the fishery to WCPFC, and in fact are frequently responsible for initiatives related to fishery management measures (such as the introduction of VDS); SG60 and SG80 are met.</p> <p>It cannot be said that formal reporting to all interested stakeholders provides comprehensive information on fishery performance (PNA level), though, so SG100 is not met.</p>	
e	Approach to disputes		
Guidepost	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
Met?	Y	Y	N
Justification	<p>At the WCPFC level, the dispute settlement provisions of the UN Fish Stocks Agreement apply to disputes between WCPFC Members (Article 31) viz. Procedures for the settlement of disputes “The provisions relating to the settlement of disputes set out in Part VIII of the Agreement apply, mutatis mutandis, to any dispute between members of the Commission, whether or not they are also Parties to the Agreement”. The Commission uses a consensus-based approach for decision-making, with intent of avoiding disputes. The consensus-based decision-making process has provisions for a two-chambered voting process requiring a 75% majority in both chambers if all efforts to reach a decision by consensus have been exhausted. In addition, there are provisions for a decision to be reviewed by a review panel at the request of a Member (WCPFC, 2000 Article 20, paras 6-9).</p> <p>WCPFC (the Commission) has not been subject to any court challenges and there is no evidence that other entities flout the law, with the notable exception of particular fishing companies and fishing vessels, which are listed on the IUU fishing list (Medley & Powers 2015).</p> <p>With regard to legal disputes, for example, Article 8.2 of the Palau Arrangement provides for disputes arising out of the interpretation or implementation of the Arrangement to be settled through peaceful negotiations. The PNA instruments are regarded as sub-regional agreements for the purpose of Article 30 of the UN Fish Stocks Agreement, which means that the dispute settlement provisions of UNCLOS apply to the Nauru Agreement, the Palau Arrangement and the VDS.</p>		

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.	
	<p>At PNA level there is no evidence of unresolved disputes suggesting that when or if they occur matters are resolved (see 3.1.2). The Nauru agreement and others (such as the Palau VDS agreement) are legal instruments – so when or if disputes occur they would be dealt with in a structured and legal manner. The VDS for example is governed through consensus as there is no provision for dispute resolution within the Palau Agreement.</p> <p>Both at the regional and PNA level mechanism are in place to deal with disputes in a timely fashion. SG 60 and SG 80 are met. Although the management system responds to deal with or avoid legal disputes there is no evidence of any legal challenges with which to inform the scoring at SG100.</p>	
References	Banks <i>et al.</i> 2011, Havice <i>et al.</i> 2017, Medley & Powers 2015, Scott & Stokes 2013, PNA 1994, PNA 2015b, Poseidon 2016.	
OVERALL PERFORMANCE INDICATOR SCORE:		80
CONDITION NUMBER (if relevant):		N/A

PI 3.2.3 – Compliance and enforcement

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.			
Scoring Issue	SG 60	SG 80	SG 100	
a	MCS implementation			
	Guided post	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Y	Y	N
	Justification	<p>MCS aspects need to be considered at three different levels – 1) Regional (including WCPFC), 2) National, and 3) PNA.</p> <p>As with all fisheries MCS of fisheries it is the integration and communication that determines effectiveness, especially for fisheries of highly migratory species and where fisheries cross from high seas into EEZs. This combination at WCPFC, National and PNA has created a reasonable expectation that MCS in the fishery is effective. SG60 is met.</p> <p>MCS at the Regional Level</p> <p>At the regional level, the WCPFC is the principle organ of enforcement and has developed a comprehensive <i>Compliance Monitoring Scheme (CMS)</i> – CMM 2015-07 that includes : (i) catch and effort limits for target species; (ii) catch and effort reporting for target species; (iii) reporting including with respect to implementation of measures for non-target species; (iv) spatial and temporal closures, and restrictions on the use of fish aggregating devices; (v) authorizations to fish and the Record of Fishing Vessels, observer, VMS coverage, transshipment and the High Seas Boarding and Inspection Scheme; (vi) provision of scientific data through the ROP (vii) submission of an annual report to the TCC. The blacklisting of non-member vessels (IUU lists) has become a widespread practice among all RFMOs including WCPFC. In combination these measures provide the tools that demonstrates the ability to enforce management measures as prescribed through the WCPFC CMMs.</p> <p>Further, the annual TCC reports reflect the status of fishery compliance in the WCPFC and the extent to which CCMs report and comply. The TCC reports of the 2015 session (11) and 2014 (10) comprehensively identify member compliance (or non-compliance). No PNA flag state vessels appear on the IUU list although the non-compliance list relating to CMMs have some PNA countries listed – these are mostly minor issues such as relating to delays in submitting reports. It is also noted that PNA countries are amongst those requesting assistance when submitting annual compliance reports to the TCC (dCMR - draft reports). This relates to capacity differences between PNA Parties, but weaknesses are addressed through Joint Initiatives, and support from FFA Regional coordination.</p> <p>The FFA is the main service organisation providing MCS support for the WCPO. This includes a regional MCS strategy (2010-2015) endorsed by Forum Fisheries Committee Ministers, which includes regional operations and cooperation, a regionally agreed benchmark level of observer coverage (100% for the purse seine fishery since 2010), at sea and at port inspections. Regional coordination of MCS is undertaken by FFA Surveillance Centre (RFSC). The RFSC operates from its control</p>		

<p>PI 3.2.3</p>	<p>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</p>
	<p>centre in Honiara and is staffed by around 10 persons. The RFSC monitors fishing vessel activity using a combination of the Vessel Monitoring System (VMS), Automatic Identification System (AIS) and Synthetic Aperture Radar (SAR). Access to VMS and AIS data is available to all PNA countries through FFA's Google Track system. MSC is also supported by the QUAD Operational Working Group. This group comprises the aerial and naval arms of Australia, France, New Zealand and the U.S. to provide aerial and surface assets to assist regional surveillance. FFA also has the responsibility for facilitating the coordination of the surveillance assets provided by the QUAD nations in support of national and multilateral fishing surveillance and response activities.</p> <p>MCS at the PNA and National (Flag State) Level</p> <p>At the national level, FFA provides policy and services to its members to build national capacity and regional solidarity to control fishing in the Pacific, including illegal, unreported and unknown fishing. As well as VMS, this includes technical expertise, information sharing and projects around monitoring activities, regional surveillance operations, the FFA Observer Program, FFA licence information and staff training and support. Also at the national level, many of the CMMs established by WCPFC put clear obligations on parties as the flag states. Note that PNA members license both domestic vessels and foreign flag vessels through the FSMA and the Palua Arrangement. It falls to both the flag and coastal state to ensure compliance with the relevant CMMs and for the resulting violations of those measures to be applied.</p> <p>With regard to the FAO Port State Measures Agreement, only Palau has acceded. The PNA Agreement and Te Vaka Moana Agreement promote regional cooperation between parties on MCS activities. Regional (WCPFC and FFA) MCS systems includes harmonized MTCs of Access, a regional VMS system, Regional Register of Foreign Fishing Vessels and a range or regional MCS cooperation programmes. The PNA and its members (individually) are active in the TCC. The PNA is rolling out its stand alone asset Tracking System which is integrated into the PNA's Electronic Reporting System and the Fisheries Integrated Management System (FIMS). The NZ and Australian defence forces, along with the French and US navies, participate in four annual coordinated sea surveillance actions. These are supported by the PNA and other Pacific Island Pacific Patrol Boats. These special operations are strategically timed to focus on potentially high risk periods such as the four month purse seine FAD closure and high level activities of longline fleets.</p> <p>At a national level, PNA countries also operate compliance / inspection units, resourced by fishery inspectors and supported by police maritime (Banks, pers comm.). This is the case for:</p> <ul style="list-style-type: none"> • The National Fishery Authority, Papua New Guinea • Ministry of Fisheries and Marine Resources Development, Kiribati • National Oceanic Resources Management Authority, Federated States of Micronesia • The Ministry of Marine Fisheries Resources, Solomon Islands • The Marshall Islands Marine Resources Authority • Nauru Fisheries and Marine Resources Authority • Department of Fisheries of the Tuvalu Ministry of Natural Resources <p>The Bureau of Marine Resources, Palau delegates its compliance activities to the Maritime Police. The Fisheries Agency undertakes a small number of inspections when vessels are in port. At sea surveillance, including boarding and inspections, and air surveillance is carried out by the NZ Defence Forces. Were possible a</p>

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	<p>Tokelau Fisheries Officer participates in these New Zealand Defence Forces surveillance operations (Banks, pers comm).</p> <p>The PNA has eight designated ports in which purse seine catches can be discharged (and are monitored) – this also provides the basis for enforcing measures related to reporting on total catch. In addition there is 100% observer coverage (a pool of 580 observers is reported, Banks, pers comm.) on all catcher vessels – these observers are trained to have both scientific and compliance functions as well a specific MSC aspects). Port State Measures have been implemented but as mentioned earlier have not been fully adopted. FFA proposed a CMM to improve port state measures at WCPFC in 2014, however, there was no consensus to adopt this proposal and FFA members advised the Commission of their commitment to continuing the development of port State measures, and will consider implementing this proposal through their internal processes (WCPFC 2014c). PNA countries have also developed National Plans of Action to deter IUU fishing demonstrating not only a national by global commitment in this regard.</p> <p>An important part of the overall compliance system is the effort management or VDS implemented by PNA. While this only applies to about 60% of the fleet (PNA vessels) it has proven effective. The VDS is however undergoing regular review and improvement – it remains primarily an economic management tool linked to the long-term sustainability of the resource (skipjack and yellowfin primarily). Monitoring of bycatch and the application of CMMs related to bycatch species as well as bigeye tuna is undertaken by observers. The linkages between the VDS and scientific advice (effort caps, target reference points and biomass) remains fundamental to the compliance aspects related to management of the stocks and the initiative of the PNA to address HCRs illustrates their recognition and willingness to implement a clear harvesting strategy that can be applied by WCPFC as well as the PNA).</p> <p>A comprehensive monitoring, control and surveillance system has therefore been implemented in the fishery under assessment and, in conjunction with the WCPFC and National governments, the PNA has demonstrated an ability to not only enforce CMMs and compliance issues by its members, but also to influence the regional fishery (high seas included) as a whole. Although at a national level (Flag State) there are measures in place effected through national legislation, the fact that no systematic compliance issues and/or prosecutions are reported for flag state vessels implicitly implies that the MCS system is effective. SG80 is clearly met, but the Assessment Team was not satisfied that a 'consistent ability to enforce relevant management measures, strategies and/or rules' has been demonstrated. As such, SG100 is not met.</p>		
b	Sanctions		
Guidepost	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
Met?	Y	Y	N
Justification	Each country has a system of sanctions and some of these are in the process of transition to reflect higher risk offences and the implementation of minimum and maximum fine schedules. The level of fine ranges from US\$ 50,000 to US\$ 1 million (R. Banks, pers. comm.). Vessels are usually detained until settlement of a sanction. Copies of the Sanctions are contained in National Fishery Acts, and summarized in the NPOA-IUU documents (https://www.wcpfc.int/wcpfc-iuu-vessel-list). In a number of cases, the fishery authorities may implement administrative fines.		

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
	<p>The frequency of fines of free school purse seiners is very rare, however. This is in part due to the requirement for 100% observer coverage, and the nature of free school fishing. In the MSC assessment of the PNA purse seine fishery, Banks <i>et al.</i> (2011) suggest that some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. As indicated in the background information, in 2013 for example, the owners, operators and fishing masters of purse seine vessels were found guilty of conducting sets in violation of the WCPF Convention Implementation Act resulting in fines of approximately US\$1.5 million. These cases were the result of reports from FFA observers (http://www.nmfs.noaa.gov/ole/newsroom/stories/13/04_90413_purse_seine_fad_case.html).</p> <p>A range of sanctions also exist to deal with non-compliance at the regional level. CMMs are set by WCPFC, but enforcement is carried out by national authorities. There are some capacity differences between nations, but weaknesses are addressed through joint initiatives and support from FFA Regional coordination. The 100% observer coverage scheme is proven to have worked effectively, with a number of safeguards in place to ensure that non-compliance and inaccurate reporting are identified. There are generally good levels of compliance by fishers.</p> <p>There are no trade sanctions against nation states, although theoretically these may be possible (Medley & Powers 2015). Sanctions are only applied to fishing entities, such IUU vessels and vessels that are detected as being non-compliant with CMMs. WCPFC notifies Flag States of non-compliant vessels, which the Flag States should order to withdraw from Commission Area. These sanctions appear to be applied consistently. Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence; SG80 is met. Although sanctions to deal with non-compliance exist and are consistently applied, their deterrence has not been clearly demonstrated. Therefore SG100 is not met.</p>		
c	Compliance		
Guidepost	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
Met?	Y	Y	N
Justification	<p>There are generally thought to be good levels of compliance by fishers in the PNAFTF. Demonstrating this is challenging as without systematic convictions or evidence of action taken by authorities, evidence will always be constrained. Medley & Powers (2015) report that some States have taken action to make it a violation of their domestic laws for their nationals to engage in activities that conflict with the fisheries laws of other countries.</p> <p>All WCPFC members must submit confidential reports to the TCC relating to compliance with all active CMMs. The submissions by PNA parties are done at a national level and are a declaration by each member that they have or have not complied with CMMs. These are subsequently colour coded in a report to TCC. As discussed in 3.2.3 WCPFC has a permanent working group on compliance (the TCC)</p>		

<p>PI 3.2.3</p>	<p>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</p>		
		<p>with a role to review and monitor compliance with WCPFC management measures. The working group also recommends measures to promote compatibility among the national fisheries management measures, addressing matters related to compliance with fisheries management measures, analyse information on compliance and report the findings to the WCPFC, which will in turn inform the members and non-members. An annual report is produced as part of the compliance review. Identified infringements are reported. Not all fisheries comply and clearly there is some non-compliance by some vessels and flag states as reported by the TCC.</p> <p>The last three TCC reports provide a table of compliance (or not) with CMMs of the WCPFC. These lists are not particularly helpful in determining compliance levels of fishers at a national level but they do provide a matrix of non-compliance related to CMMs. Further, the MRAG (2016) IUU report states that in the purse seine sector :</p> <p><i>“the largest contributor to the total estimated IUU volume and value are reporting violations, accounting for 56% the estimated IUU volume (Table 21; Figure 17). This was largely driven by estimates of under-reporting and misidentifying of YFT and BET. The next highest contributor was the ‘non-compliance with other license conditions’ group of risks, accounting for around 43% of total estimated IUU volume. The vast majority of this total is driven by estimates of FAD-fishing during the closure period.</i></p> <p>Logbook data are also supplied as part of licence requirements. At-sea compliance monitoring is undertaken through 100% observer coverage and this is also believed to minimize non-compliance. Note that 100% observer coverage applies to purse seine only – data provided by SPC suggests that there are some inconsistencies in observer data requiring ongoing checking and verification. VMS and observer reports provide additional evidence of general compliance with the management system. SG 60 is therefore met.</p> <p>At the SG80 level, the WCPFC reports indicate that the compliance is adequate in the fisheries considered here, meeting SG 80 and there are no reports of non-compliance of PNA members. A further incentive for compliance no doubt relates to the MSC on-board sampling protocols and monitoring by observers, including the determination of FADs and freeschool sets. The risk of the mixing of product from certified and non-certified Functional Units (set types) is also monitored at sea – the risk of this occurring (mixing or misreporting) is therefore low.</p> <p>The TCC reports, observer reports and lack of any supporting evidence of prosecutions provides adequate evidence that there is good compliance with the management system. SG 80 is met. At the SG 100 level it cannot be said that there is a high degree of confidence that fishers comply with <u>all</u> aspects of the management system.</p>	
<p>d</p>	<p>Systematic non-compliance</p>		
<p>Guided post</p>		<p>There is no evidence of systematic non-compliance.</p>	
<p>Met?</p>		<p>Y</p>	
<p>Justification</p>	<p>The information presented in PI 3.2.3 Sla-Slc suggest that there is no evidence of systematic non-compliance. While an effective MCS system is in place, it is typical of fisheries globally that non-compliance does occur. No doubt in the PNA this imperfect system will have some non-compliance. What is at question is the extent of this and the nature of the non-compliance. WCPFC TCC reports (the last three years, e.g., TCC 2016) suggest that non-compliance occurs and that the range of offences varies from minor (such as late submissions of reports), to more serious</p>		

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
	<p>issues such as not complying with the conditions of FAD closures or unauthorised fishing.</p> <p>The PNA, by virtue of covering the majority of the purse seine fleet, is in many respects self-reporting. If systematic non-compliance occurs then it is likely that it would occur across the fleet – particularly given the extent of the observer coverage, lack of evidence at the WCPFC (TCC) and commitment to MSC conditions. PNA has many checks and balances in place, not least of which is a sophisticated real-time FIMs, monitoring of landings at designated ports, strict licensing conditions, continual monitoring of effort (VDS), pre-vessel inspections, Observer training to a high standard with comprehensive debriefings etc. PNA also commissioned the MRAG IUU report (MRAG 2016), and that report suggests IUU fishing occurs within the broader WCPO but certainly not within the PNA group.</p> <p>Under EU Preferential Trade opportunities, most WCPFC members seek recognition to market their fish in the EU. Some PNA parties have been given “yellow cards” associated with the EU strict approach to IUU fishing (http://www.franciscoblaha.info/blog/2014/7/8/is-the-eu-iuu-regulation-working)</p> <p>Yellow cards are warnings prior to “Red Carding” and require that countries take action to address governance concerns raised by the EU. Yellow cards issued to Solomon Islands and PNG were lifted in 2017 and 2015 respectively, recognising the significant progress they have made in the fight against illegal, unreported and unregulated (IUU) fishing. Both Tuvalu and Kiribati are taking the necessary steps for EU approval and removal of yellow cards (see Preston et.al., SPC, 2016). The actions taken demonstrate the willingness of these countries to adapt to the EU requirements and address any alleged weaknesses in the compliance system. These examples largely address EU assessment criteria, which may or may not be consistent with MSC compliance scoring requirements. The assessors find that based on the material available, there is no evidence of systematic non-compliance in the purse seine fishery.</p> <p>SG 80 is met.</p>
References	Medley & Powers 2015, MRAG Asia Pacific 2016, SPC 2016b, TCC 2016, WCPFC 2014c.
OVERALL PERFORMANCE INDICATOR SCORE:	
80	
CONDITION NUMBER (if relevant):	
N/A	

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4	There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system.			
Scoring Issue	SG 60	SG 80	SG 100	
a	Evaluation coverage			
	Guidepost	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system	There are mechanisms in place to evaluate all parts of the fishery-specific management system.
	Met?	Y	Y	Y
	Justification	<p>There are two levels of monitoring and evaluation (M&E): 1) RFMO level (WCPFC) and 2) PNA level</p> <p>A condition raised on last certification required M&E of the fishery-specific management system. This condition was closed out after WCPFC initiated reviews through an expert panel (4 external and three internal) prompted by the Kobe Course of Actions (2011 to 2013). This mechanism is not limited to specific parts but can include all aspects of the management system (compliance, science, management). Evidence presented to support this process include the submission of the WCPFC Secretariat reports on compliance (and IUU) of its members with the reporting provisions of the Commission (CMM 2013-02). The actual implementation of CMMs is monitored through the reporting provisions within the CMMs themselves, or the members Annual Reports to the Commission. Stock assessments conducted by the SPC are subject to peer review by other members of the Scientific Committee and occasional external review. Commission meetings provide an overall review of processes and outcomes.</p> <p>A critical review undertaken annually by the PNA and reported to the Commission is the assessment of the VDS and updates on the allocation and use of effort days by PNA members. The WCPFC service organisations (FFA and SPC) both serve as independent monitors of the Commission and provide regular review and updates of the science and compliance and administration of the fishery in the region.</p> <p>SG100 is met as there are mechanisms to evaluate all parts of the management system</p>		
b	Internal and/or external review			
	Guidepost	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	Y	Y	N
	Justification	At both the national and PNA levels regular internal reviews are conducted. The PNA members meet at regular intervals and as the need arises to review fishery performance – these meeting are reported in minutes and briefs prepared on proceedings and include members and observers i.e. the process is transparent.		

PI 3.2.4	<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</p> <p>There is effective and timely review of the fishery-specific management system.</p>
	<p>Key elements have also been given occasional external review – this would include for example the reviews mentioned on the VDS (including a detailed workplan report to the team on 13 Sep. 2016 – unpublished) as well as IUU fishing (MRAG 2016)</p> <p>The PNA's VDS is overseen and regularly reviewed internally by a VDS Committee (e.g., PNA 2016b). Advice and external reviews of performance are provided by the FFA. There have also been a series of internal and external reviews of other key parts of the PNA processes (Banks <i>et al.</i> 2011). Recently developed tuna management plans for several jurisdictions, including Fiji and Vanuatu, indicate ongoing evaluation of management systems.</p> <p>The tuna RFMOs have also been subjected to occasional external review (Medley & Powers 2015) with regard to assessing risk (stock assessment).</p> <p>SG 60 and SG 80 requirements are met for national and international jurisdictions with responsibility for the fishery.</p> <p>Overall, key parts of the regional and national management systems are subject to regular internal review. There has been an external performance review of the WCPFC but it is not clear that there is a commitment to this being regular, so SG 60 and SG 80 are met, but SG100 is not met.</p>
References	Banks <i>et al.</i> 2015, Medley & Powers 2015, MRAG Asia Pacific 2016, PNA 2015b, PNA 2016b.
OVERALL PERFORMANCE INDICATOR SCORE:	
90	
CONDITION NUMBER (if relevant):	
N/A	

Appendix 2: Conditions

Existing conditions

Six conditions are set against the PNAFTF at reassessment.

Condition 1 is new for the fishery and was required to be set following the Hong Kong harmonisation process that is discussed in more detail in Section 3.8.

Condition 2 was generated during the original certification. Through the Harmonisation pilot, the CABs, have scored this PI for all WCPFC stocks using the 'available' language in v2.0. Following information provided by the MSC in a November 2014 CAB notification, and through the interpretation log, this condition can therefore be carried over into reassessment as the reassessment is being done against v2.0 fully (as per the Nov 2014 notification) and the 'available' criteria remain (B>Bmsy).

Conditions 3 & 4 for the Yellowfin UoA were set during the expedited assessment (certified February 2016), which means these conditions, although set during the previous certification period, are on a different timeline and continue into the next certification period.

Conditions 5 and 6 are new for the PNAFTF, and reflects changes to the ETP species profile of the fishery and 2 UOC.

New conditions and meeting milestones

Through the Hong Kong harmonisation process for Pacific tuna, harmonised conditions on PI 1.2.1 and PI 1.2.2 have been (or will be at the next surveillance audit) applied to all MSC certified, WCPO fisheries for skipjack tuna and yellowfin tuna, including the PNA fishery. It is understood that carrying these conditions over in to a subsequent certification period will not be permitted (CR 7.24.2.2.a), and so it is considered that the WCPFC will be required to progress the workplan on time in order for PNA to meet the agreed annual milestones. Therefore, where relevant, if the WCPFC workplan is delayed such that agreed milestones are not met then the fishery will be considered to be behind target, in conformity with CR 7.23.13.

Condition 1

UoA	1:
Target Species	Skipjack tuna
Performance Indicator	PI 1.2.1
Scoring Issue (SG80)	(a)
Score	60
Rationale	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

	<p>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</p> <p>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.</p> <p>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.</p>
Condition	<p>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.</p>
Milestones	<p><u>Years 1, 2 and 3:</u> (Resulting score 70)</p> <ul style="list-style-type: none"> • 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). <p><u>Year 4:</u> (Resulting score ≥80)</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p><u>By Year 1-2018 PNA will:</u></p> <ol style="list-style-type: none"> 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.

	<p><u>By Year 2-2019 PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>By Year 3-2020, PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>By Year 4-2021, PNA will provide evidence to show that:</u></p> <ol style="list-style-type: none"> 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.
<p>Consultation on condition</p>	<p>As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.</p>

Condition 2

UoA	1:
Target Species	Skipjack tuna
Performance Indicator	PI 1.2.2
Scoring Issue (SG80)	(a), (b) and (c)
Score	60
Rationale	<p>Scoring issue (a):</p> <p>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.</p> <p>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)”.</p> <p>MSC CRv2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level (MSC 2014).</p> <p>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”.</p> <p>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 ($F > F_{MSY}$)”.</p> <p>An updated 2016 assessment provides conclusions that are largely consistent with previous assessments (McKechnie <i>et al.</i> 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).</p> <p>The CRv2.0 SA2.5.2a condition is therefore met and HCRs are considered to be ‘available’.</p> <p>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”.</p>

	<p>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).</p> <p>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.</p> <p>Scoring issue (b):</p> <p>HCRs are still under development and SG80 is therefore not met.</p> <p>Scoring issue (c):</p> <p>The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.</p> <ol style="list-style-type: none"> 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 FMSY should usually be taken as evidence that the HCR is effective”. <p>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).</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>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.</p>
<p>Condition</p>	<p>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.</p>

	<p>SI b) By the fourth surveillance audit, provide evidence that the HCRs are likely to be robust to the main uncertainties.</p> <p>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.</p>
<p>Milestones</p>	<p><u>Years 1, 2 and 3:</u> (Resulting score 60)</p> <ul style="list-style-type: none"> 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). <p><u>Year 4:</u> (Resulting score ≥ 80)</p> <ul style="list-style-type: none"> 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.
<p>Client action plan</p>	<p><u>By Year 1-2018 PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>By Year 2-2019, PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>By Year 3-2020, PNA will:</u></p> <ol style="list-style-type: none"> 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

	<p>3. Promote support by PNA Members for the adoption and application of a HCR for skipjack; and</p> <p>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.</p> <p><u>By Year 4-2021, PNA will provide evidence that:</u></p> <p>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</p> <p>2. The tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</p>
<p>Consultation on condition</p>	<p>As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.</p>

Condition 3

UoA	2:
Target Species	Yellowfin tuna
Performance Indicator	PI 1.2.1
Scoring Issue (SG80)	(a)
Score	60
Rationale	<p>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.</p> <p>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.</p> <p>The score for this PI is in agreement with the outcomes agreed at the MSC harmonisation meeting (Hong Kong 21-22 April 2016).</p>
Condition	<p>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.</p>
Milestones	<p><u>Years 1, 2 and 3:</u> (Resulting score 70)</p>

	<ul style="list-style-type: none"> 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). <p><u>Year 4: (Resulting score ≥80)</u></p> <ul style="list-style-type: none"> 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.
<p>Client action plan</p>	<p><u>By Year 1-2018, PNA will:</u></p> <ol style="list-style-type: none"> Support the implementation of a harvest strategy process for the WCPO, including the adoption of a harvest strategy for WCPO yellowfin tuna. Support the adoption of a WCPFC Harvest Strategy Workplan that includes a process for development of a harvest strategy for WCPO yellowfin tuna. Promote for consideration by the WCPFC, the effectiveness of measures for WCPO yellowfin tuna management. <p><u>By Year 2-2019, PNA will:</u></p> <ol style="list-style-type: none"> Support the implementation of a harvest strategy process for the WCPFC, including the adoption of a harvest strategy for WCPO yellowfin tuna. Work towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. Implement actions to raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 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). <p><u>By Year 3-2020, PNA will:</u></p> <ol style="list-style-type: none"> provide evidence to illustrate working towards the adoption of a formal harvest strategy for WCPO yellowfin tuna. Raise awareness of the need for any additional WCPFC yellowfin management measures among PNA Members. 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. Promote the adoption by PNA and/or the WCPFC of any additional management measures needed for WCPO yellowfin tuna. <p><u>By Year 4-2021, PNA will provide evidence to show that:</u></p> <ol style="list-style-type: none"> 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.
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Condition 4

UoA	2:
Target Species	Yellowfin tuna
Performance Indicator	PI 1.2.2
Scoring Issue (SG80)	(a), (b) and (c)
Score	60
Rationale	<p>Scoring issue (a):</p> <p>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.</p> <p>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)”.</p> <p>MSC CRv2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level (MSC 2014).</p> <p>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”.</p> <p>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 “<i>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’.</i></p> <p>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}”.</p> <p>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</p>

	<p>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.</p> <p>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).</p> <p>As indicated above, the current stock assessment and projections of future stock size indicate that the stock will remain above SSB_{MSY} over the period agreed in the CMM 2014-06 workplan. The CRv2.0 SA2.5.3b requirement is therefore met.</p> <p>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.</p> <p>Scoring issue (b):</p> <p>HCRs are still under development and SG80 is therefore not met.</p> <p>Scoring issue (c):</p> <p>The rationale for this SI needs to address two CRv2.0 (MSC 2014) requirements.</p> <p>1) CRv2.0 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". 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".</p> <p>Evidence to support this is provided by the 2014 assessment indicating that overfishing is not occurring ($F_{current}/F_{MSY} < 1$ across the grid of model runs) (WCPFC 2014a).</p> <p>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.</p> <p>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.</p> <p>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.</p>
<p>Condition</p>	<p>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.</p>

	<p>SI b) By the fourth surveillance audit, the client shall provide evidence that the HCRs are likely to be robust to the main uncertainties.</p> <p>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.</p>
<p>Milestones</p>	<p><u>Years 1, 2 and 3:</u> (Resulting score = 60)</p> <ul style="list-style-type: none"> • 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). <p><u>Year 4:</u> (Resulting score ≥ 80)</p> <ul style="list-style-type: none"> • 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.
<p>Client action plan</p>	<p><u>By Year 1-2018 PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>By Year 2-2019 PNA will:</u></p> <ol style="list-style-type: none"> 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. <p><u>Year 3-2020, PNA will:</u></p> <ol style="list-style-type: none"> 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.

	<p>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.</p> <p><u>Year 4-2021, PNA will provide evidence that:</u></p> <ol style="list-style-type: none"> 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.
<p>Consultation on condition</p>	<p>As P1 requirements are stock-wide, meeting this condition will require work to be done through the WCPFC.</p>

Condition 5

<p>UoAs</p>	<p>1:</p>
<p>Performance Indicator</p>	<p>2.3.2</p>
<p>Scoring Issue (SG80)</p>	<p>Slb: <i>“There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species”</i></p>
<p>Score</p>	<p>75</p>
<p>Rationale</p>	<p>Observer data indicate that the number interactions between the PNAFTF and <i>Manta</i> and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO, pers. comm.). It is not clear to what extent <i>Manta</i> and devil rays are retained in the PNAFTF, but retention generally seems unlikely. Croll <i>et al.</i> (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.</p> <p>At the 12th WCPFC Scientific Committee (SC) meeting (SC12), the designation of <i>Manta</i> and <i>Mobula</i> species as ‘key shark species’ was proposed, which would result in improved data collection and reporting of the <i>Manta</i> and <i>Mobula</i> 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 <i>Mobula</i> species as part of their curricula (WCPFC 2016b). SC12 also recommended that the WCPFC considers adopting guidelines for safe release of <i>Manta</i> and <i>Mobula</i> 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 <i>Manta</i> and <i>Mobula</i> species (Poisson <i>et al.</i> 2012). However, there is nothing in place for ray species consistent with the requirements to release silky shark, oceanic whitetip shark, or whale shark.</p> <p>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.</p>

Condition	Slb) 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	<p><u>Year 1:</u> (Resulting score = 75)</p> <ul style="list-style-type: none"> • 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. <p><u>Year 2:</u> (Resulting score = 75)</p> <ul style="list-style-type: none"> • 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. <p><u>Year 3:</u> (Resulting score ≥80)</p> <ul style="list-style-type: none"> • 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	<p><u>By Year 1-2018 PNA will:</u> 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.</p> <p><u>By Year 2-2019 PNA will:</u> 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.</p> <p><u>Year 3-2020, PNA will:</u> 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</p> <p><u>Year 4-2021, PNA will provide evidence that:</u> The PNA and/or WCPFC strategy evaluated to ensure that the strategy is meeting its objectives.</p>

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.
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Condition 6

UoAs	2:
Performance Indicator	2.3.2
Scoring Issue (SG80)	Slb: “ <i>There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species</i> ”
Score	75
Rationale	<p>Observer data indicate that the number interactions between the PNAFTF and <i>Manta</i> and devil rays has averaged 634 animals annually over the period 2011-2015 (PNAO, pers. comm.). It is not clear to what extent <i>Manta</i> and devil rays are retained in the PNAFTF, but retention generally seems unlikely. Croll <i>et al.</i> (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.</p> <p>At the 12th WCPFC Scientific Committee (SC) meeting (SC12), the designation of <i>Manta</i> and <i>Mobula</i> species as ‘key shark species’ was proposed, which would result in improved data collection and reporting of the <i>Manta</i> and <i>Mobula</i> 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 <i>Mobula</i> species as part of their curricula (WCPFC 2016b). SC12 also recommended that the WCPFC considers adopting guidelines for safe release of <i>Manta</i> and <i>Mobula</i> 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 <i>Manta</i> and <i>Mobula</i> species (Poisson <i>et al.</i> 2012). However, there is nothing in place for ray species consistent with the requirements to release silky shark, oceanic whitetip shark, or whale shark.</p> <p>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.</p>
Condition	Slb) 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 <i>Manta</i> and devil rays as ETP species.
Milestones	<p><u>Year 1:</u> (Resulting score = 75)</p> <ul style="list-style-type: none"> • 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 <i>Manta</i> and devil rays will be implemented. • The client will need to provide evidence that available information on <i>Manta</i> 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 <i>Manta</i> and devil rays taken in the PNAFTF will be needed.

	<p><u>Year 2: (Resulting score = 75)</u></p> <ul style="list-style-type: none"> • 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. <p><u>Year 3: (Resulting score ≥80)</u></p> <ul style="list-style-type: none"> • 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.
<p>Client action plan</p>	<p><u>By Year 1-2018 PNA will:</u></p> <p>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.</p> <p><u>By Year 2-2019 PNA will:</u></p> <p>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.</p> <p><u>Year 3-2020, PNA will:</u></p> <p>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</p> <p><u>Year 4-2021, PNA will provide evidence that:</u></p> <p>The PNA and/or WCPFC strategy evaluated to ensure that the strategy is meeting its objectives.</p>
<p>Consultation on condition</p>	<p>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.</p>

Appendix 3: Meeting notes and stakeholder submissions at site visit

The Producers' Association of Large Tuna Freezers (OPAGAC) – meeting record

Date: 8th September 2016

Time / Location: 16:15 (time in Brisbane)

Attendees:

Rob Blyth-Skyrme	Acoura Team Leader and P2 Specialist	In room
Kevin McLoughlin	Acoura P1 Specialist	In room
Dave Japp	Acoura P3 Specialist	In room
Guillermo Moreno	OPAGAC	On Skype
Miguel Herrera	OPAGAC	On Skype

Introductions:

- 1) All participants were introduced as above, with participation by phone as indicated.
- 2) RBS read out the Acoura Opening Statement, and described the PNA Tuna Fishery under assessment:

PNA WCPO unassociated / non-FAD skipjack and yellowfin tuna purse seine fishery
2 UoAs – skipjack tuna and yellowfin tuna.
- 3) RBS asked if there were any questions on the MSC process – none were asked as the OPOAGAC are familiar with the MSC, having contributed to several assessments and also now undertaking a FIP.

Stakeholder comments:

- 1) New paper was provided to the assessment team – Moreno, G., Herrera, M. & J. Morón (2016). To FAD or not to FAD: A challenge to the Marine Stewardship Council and its conformity assessment bodies on the use of units of assessment and units of certification for industrial purse seine tuna fisheries. Marine Policy, V.73, pp. 100-107.

The paper was pulled together because OPAGAC participated in other MSC assessments but they were of the view that no cognizance had been paid to their concerns.

Two key issues highlighted from the paper:

- a. With respect to the MSC Standard – how can a certified fishery (freeschool) and a fishery that wasn't certified (FAD-set) operate on the same trip?
- b. There is no way to split the fishery between free-school and FAD-fished because how can an observer tell if there is no FAD within 1nm of the vessel, and there is no way to reliably identify the set type (i.e., FAD or non-FAD) through the species catch profile.

The 1nm definition of free-school is not supported by the literature. 2 – 10 nm from a FAD can still be FAD-associated.

The MSC Echebstar tuna fishery definition of freeschool was 5 nm, most CABs choose 1 nm, now 1 nm for PNA – why does Acoura have no consistency?

But, in any case, FADs are designed not to be seen. There is no way to be sure that observers can tell the distance, and as the FAD sets commonly occur at dawn, the fishermen may move the FAD away from the school using another boat before fishing it – the observer would never know. Observers tend to rely on what the skipper says in terms of the set type.

The 1nm distance for the WCPFC – this is not a formal definition, only appears as a footnote in the resolution for the closure on the high seas – CMM 2009-02.

Also, there is no monitoring of the fish wells on the vessels at sea – the fishermen can call something a free-school set when it was set on a FAD. This appears to be happening because freeschool catches go up when FAD fishing goes up – these data don't make sense otherwise.

Separation of free-school sets from associated sets on the basis of species identification is not reliable.

A main objective of the certification should be to promote good practice, and you would expect to see a change from FAD-associated to unassociated fishing, But, there has been an increase in effort on FAD fishing in the PNA area. The certification is not achieving its purpose, so the entire fishery should be assessed, not just one bit of it.

On the unassociated definition, we are puzzled as to how Acoura can choose 1 nm for PNA but had 5 nm for Echebstar. We want to see the justification as to why 1 nm was chosen – it can't just be because of a footnote in a resolution?

Comment from RBS as Team Leader – Note that it is not the CAB's role to undertake research or provide a scientific justification for an approach being taken by the fishery, but we will confirm the definition to the stakeholders when we have clarified these points.

Question from Assessment Team:

- 1) Does OPAGAC have evidence that observers can't identify FAD sets versus non-FADs?

Response from OPAGAC:

We know that it doesn't work, and there is evidence from PNA themselves that they have to check the catch profile whether there are FAD-associated fish present in the catch. So, it can't work.

And it is only possible to assess what is visible on the surface – if a floating FAD, then yes, but if the FAD is submerged or semi-submerged, then no.

And there is a resolution in the WCPFC that you can't fish on whalesharks, but if you don't see the whaleshark then they count as freeschool, but these are associated.

Actions called for:

- 1) Assessment Team to provide OPAGAC with a definition of freeschool as applied to the PNA fishery under assessment.
- 2) OPAGAC to provide the Assessment Team with a revised version of the Moreno *et al.* 2016 paper once the correction has been made.

These notes were provided to G. Moreno by e-mail on 15th September 2016. Extensive track change comments were received back the same day. It was then requested that edits were made to the meeting note, or that the comments were provided to the Assessment Team either using the MSC's Template for Stakeholder Input or as an additional note, but these options were not taken up. It was highlighted by G. Moreno that OPAGAC's position was as described by Moreno *et al.* 2016 (see reference list, Section 6).

A response to the specific concerns of the OPAGAC on the process of setting the purse-seine nets as free-school or FAD-associated (in the form of reviewing the evidence and stating the facts as they are apparent to the Assessment Team) is provided through the report detailing the approach taken. Please see Section 3.6.1 and the scoring for PI 2.1.1 (with respect to bigeye tuna) for more details.

International Pole and Line Foundation (IPNLF) – meeting record

Date: 30th September 2016

Time / Location: 10:00 BST (all participants on Skype)

Attendees:

Rob Blyth-Skyrme	Acoura Team Leader and P2 Specialist	On Skype
Kevin McLoughlin	Acoura P1 Specialist	On Skype
Dave Japp	Acoura P3 Specialist	On Skype
Martin Purves	IPNLF	On Skype
John Burton	IPNLF	On Skype

Introductions:

- 1) All participants were introduced as above.
- 2) It was noted that the IPNLF representatives had provided a stakeholder submission to the Assessment Team by e-mail in the morning, a couple of hours prior to the conference call.
- 3) RBS read out the Acoura Opening Statement, and described the PNA Tuna Fishery under assessment:
 PNA WCPO unassociated / non-FAD skipjack and yellowfin tuna purse seine fishery
 2 UoAs – skipjack tuna and yellowfin tuna.
- 4) RBS asked if there were any questions on the MSC process – none were asked as the IPNLF representatives are familiar with the MSC, having contributed to several previous MSC assessments.

Stakeholder comments:

- 1) IPNLF representatives were asked to take the Assessment Team through the IPNLF paper (included in this report, below), highlighting key points. Briefly, these were as follows:
- 2) Overview:
 - a. IPNLF's focus is 'one-by-one' tuna fisheries (i.e., pole and line, handline and troll fisheries), working on the market and supply sides of the industry, creating demand for the fisheries.
 - b. IPNLF has clear links to communities, including in the developing world. There is an appreciation of the PNA fishery, and the way the PNA countries have taken control of their fishery.
 - c. IPLNF is at the forefront of the Indian Ocean tuna HCR adoption, with close links to Maldives fisheries, and is doing lots of work in Indonesia with pole and line and handline fisheries.
 - d. In terms of MSC fisheries, IPNLF is interested in consistency and interpretation between CABs. PNA Tuna isn't the only MSC tuna fishery that the IPNLF has an interest in – they are stakeholders in most MSC-certified tuna fisheries.
 - e. Generally, for the PNA fishery, while the stock aspects are recognized, the focus is on P2 and P3 issues.
- 3) Vessel Days Scheme (VDS):
 - a. While the advances in effort control made by the PNA are recognized, transparency in the VDS is a concern, in particular around compliance and monitoring
 - b. Pleased to see that the PNA commissioned a review of the VDS and published the findings. Most of the IPNLF concerns and points are derived from that review and

they recognize that many aspects of the recommendations from this report are being implemented or are in process of being implemented. Carrying out the recommendations would lead to greater transparency.

- c. Needs to be a better definition of what comprises a 'vessel day', and how technological improvement and effort creep is being addressed within the VDS.

4) Bigeye Tuna:

- a. Measures as applied to reduce fishing mortality on bigeye haven't had the desired effect.
- b. No FAD limits in the WCPFC – the status of bigeye tuna and WCPFC is comparable – suggested that PNA vessels are impacting bigeye tuna stock juveniles because of extent of FAD use.
- c. Number of FADs being deployed – note that the PNA countries are working on a project with Pew to track FADs, but this isn't happening in the WCPFC more generally.
- d. The FAD closure period in the PNA waters is different to having a limit on the number of FADs being used.
- e. It is universally accepted that FAD fishing is one of the main causes of the decline in bigeye.

5) FAD versus free school distinction

- a. There is a philosophical question about a sustainable fishery and a non-sustainable fishery operating together, with one being certified and the other not. This is the issue – IPNLF doesn't have concerns with the ability to keep catches apart for traceability / chain of custody factors.
- b. IPNLF – not aware of any other MSC certified fishery with a comparable level of separation between two parts of the same fishery.
- c. To take the situation to the extreme, it seems like it would be possible to have vessels engaged in IUU fishing for part of the day and be participating in an MSC-certified fishery for the rest of the day – would that be acceptable?
- d. Question posed to the IPNLF by the Assessment Team:
 - i. The MSC apparently considers it acceptable that only the free-school fishery is certified, and the Team is only applying the MSC Standard, so has the IPNLF challenged the MSC on this position?
 - ii. Answer – not yet directly, but the IPNLF was going to raise it soon. In any case, the MSC knows there is concern in this regard. For example, the MSC has been on a panel with OPAGAC representatives at a Seafood Summit meeting where this issue was raised.
- e. Tuna RFMOS are not consistent in how unassociated schools are defined – purse seines are supposed to declare unassociated versus FAD sets, but there's no clear interpretation.
- f. CABs also not consistent – 1nm in the first PNA assessment, but 5 nm in the Echebatar assessment, despite it being the same CAB.
- g. The available science indicates that the FAD-association of tunas may extend out to 10 km from the FAD, though. So saying something is free-school if it is only 1 nm from a FAD doesn't reflect the true biological association between the FAD and aggregating behaviour.

- h. Determining whether it's a free-school set depends on the observer – there's lots of pressure on the observer, possibly undue amounts, because free-school fish is worth \$150 per tonne more.
 - i. Point raised by the Assessment Team:
 - i. It is the skipper who makes the call on whether a set is FAD or free-school – the observer merely 'verifies'.
 - j. IPNLF would challenge the ability of any observer to confirm a free-school set at any point in time, particularly for example at dawn, dusk, in fog or choppy conditions.
 - k. One idea raised previously – to have all FADs monitored with pingers, and have them monitored by the WCPFC, so that fishing activity around FADs could be monitored in conjunction with the VMS.
 - l. Point raised by the Assessment Team:
 - i. This could help with normal FADs, but wouldn't work with logs, whale sharks or whales and would be extremely difficult to enforce.
- 6) Existing conditions:
- a. Question from IPNLF:
 - i. What is the situation with conditions from the previous assessment that have not been met? Can they be carried over?
 - ii. Ans: It is possible to do that. The Certification Requirements spell out what is involved in this happening. There is likely to be a further condition/s in relation to harvest control rules.
- 7) Ghost fishing:
- a. IPNLF is part of the global 'Ghost fishing Initiative.
 - b. One-by-one fisheries not a big issue, but the IPNLF does interact with fisheries that do lose gear.
 - c. Recent experience in the Seychelles, where lots of drifting FADs (dFADs) were washing up on reefs, something causing considerable problems to reef habitats. Spanish vessels using dFADs now working with a local NGO on a 'FAD watch' programme where they are notified if FADs get within 5km of the coastline.
 - d. But ghost fishing by lost gear is also a problem – one estimate was that 480,000 to 960,000 individual silky shark were entangled in FADs annually in the Indian Ocean. Given the scale of the Indian Ocean versus the WCPO, it is assumed the ghost fishing problem is greater in the WCPO.

Actions called for:

- 1) IPNLF to provide the Assessment Team with a revised version of the submission by the end of October at the latest, or earlier if any new points are made.

These notes were provided to M. Purves by e-mail on 6th October 2016, and no comments were provided back.

International Pole and Line Foundation (IPNLF) – submission (provided 30/09/2016)

IPNLF interest as a stakeholder

The **International Pole & Line Foundation (IPNLF)** works across science, policy and the seafood sector, using the influence of the market to develop and demonstrate the value of pole-and-line, handline and troll caught tuna (collectively referred to as 'one-by-one fisheries') to thriving coastal fisheries, and the people and seas they connect. We help to develop, support and promote socially and environmentally sustainable one-by-one tuna fisheries around the world by focusing on both the supply and demand side. We do this by initiating practical fishery improvement projects and by helping to facilitate stakeholder cooperation, to both support and improve existing one-by-one fisheries. On the market side we work with responsible buyers to create the demand for products from sustainable coastal tuna fisheries by demonstrating the environmental and social benefits of these fisheries. We also influence policy and advocate for improved management of all tuna fisheries by using the collective IPNLF voice and by actively participating at RFMO meetings and other key international fora.

We also recognise that all tuna fisheries are inter-connected due to the highly migratory nature of the stocks. In terms of MSC certification this issues was further highlighted when the MSC hosted their pilot harmonisation workshop in April 2016 in Hong Kong for overlapping stocks of fisheries managed by the Western and Central Pacific Fisheries Commission (WCPFC).

Our interest in the region stems primarily from our involvement in a Fisheries Improvement Project (FIP) with the pole-and-line and handline tuna fisheries in Indonesia. In 2014 IPNLF supported the formation of the Association of Indonesian Pole & Line and Hand-Line Fisheries (AP2HI) whose members represent the entire supply chain in Indonesia. In addition to working on improvements in the sustainability of these fisheries and promoting their benefits, we also work in collaboration with AP2HI to align them to international market requirements, with an eventual goal of obtaining MSC certification.

We recognise the MSC standard as a very good measure of the environmental sustainability of fisheries and actively promote this concept with our market partners. We are however also conscious of the important role that stakeholders play in maintaining the rigour and credibility of the certification process and the need to ensure that the standard is applied consistently by all Conformity Assessment Bodies (CABs). We therefore hope that our inputs as a stakeholder in the *PNA Western and Central Pacific Skipjack and Yellowfin, Unassociated / Non FAD Set, Tuna Purse Seine Fishery* will be seen in this light.

Benefits to the PNA through certification of the fishery

We feel that it is important to note that we fully recognise the substantial benefits that certification of the fishery has brought to the PNA countries. As an organisation we are primarily focused on working with fisheries in Developing World countries and helping them to compete on an equal footing in the global market place. Recent reports suggest that in real terms the region has experienced an eight-fold (848%) increase in the value of access fees from 1982-2014, largely in relation to introduction of the purse seine Vessel Day Scheme (VDS). Another important consideration is that the strengthening of rights and the VDS have generated independence from major donors that have historically had a direct role in the management of tropical tunas in the region.

Vessel Day Scheme

IPNLF further recognises the effectiveness of the VDS as a *de facto* Harvest Control Rule (HCR) in the absence of formalised HCRs for WCPFC stocks. We would also like to recognise the leadership role that the PNA has played in requesting that Pacific Community (SPC) to evaluate a number of candidate HCRs for the tropical purse seine fishery for skipjack. Although the VDS is not a perfect mechanism it has played an important part in curbing the unrestrained growth in fishing effort in the region. The PNA should also be applauded for their

willingness to embrace greater transparency in the VDS by commissioning a review of the scheme and making the report publicly available.

A number of recommendations came out of the *Review of the PNA Purse Seine Vessel Day Scheme* (Hagrannsoknir sf, July 2015). These included that in order for the VDS to function more effectively, it was recommended that the broader governance of the Palau Arrangement (PA), Nauru Agreement (NA) and the Federates States of Micronesia Arrangement (FSMA) should be clearly separated from the operational management of the VDS. It was also recommended that the VDS authority (the Board or annual meeting) adopt a clear, operational and preferably simple definition of vessel days. One such definition would simply be 'the day at sea in the EEZ of a VDS-Partner'. A further recommendation centred on the need to develop and implement the necessary system for compliance, including sanctions. The IPNLF supports all these recommendations and would urge that they be implemented as soon as possible to further control fishing effort in PNA waters.

Under VDS compliance we feel that the specific recommendations from the review report, as listed below, should be implemented as a matter of urgency:

Compliance with the rules

1. The VDS rules should be as clear and complete as possible to minimize the room for alternative interpretation and loopholes.
2. The rules and/or applicable legal instruments should have clear statements of the process of dealing with infringements as well as the type and level recompense for violations.
3. We further recommend the development of an adjudication process to assess whether in fact infringements have been committed and, if so, the appropriate recompense.

Transparency

1. It should be clearly stipulated (possibly in an amendment to the Palau Arrangement) that all applications of the VDS by individual Parties that may negatively affect the benefits received by other members shall be common knowledge to all VDS-partners.
2. The VDS Administrator, with the help of the PNAO should be required to report annually on the application of the VDS by the Parties. The areas of reporting might be stipulated in the VDS-agreement (e.g. as an amendment to the PA).
3. A rule interpretation/arbitration process needs to be established. This process would (i) receive and review the VDS Administrator's report and (ii) respond to requests from members for clarification of rules and complaints about the application of the VDS by individual members. Obviously, detailed rules for the operation and powers of this process need to be worked out.
4. A clear system of sanctions for deviations from VDS rules designed to make deviations unattractive should be set up to. This should preferably be adopted by unanimous agreement of all Parties.
5. A VD-registry should be run. This registry should provide information about the VD position of every VDS-partner and every fishing-company (or vessel) that is as up-to-date as possible. The PNAO is the natural place to house and run this registry and, in fact, already does.
6. The VD-registry should be up-dated by (i) trading information and (ii) unused VD information. Both should be as close to real time as possible.
7. The VD-registry should be accessible to all VDS-partners on a confidential basis.
8. Measures to preserve the confidentiality may need to be taken.
9. Information about VD trades should only be available to VDS-partners on a confidential basis and possibly with some time delay. Steps to preserve the confidentiality may need to be taken.
10. Information about prices in trades should also be collected by the VD-registry on a confidential basis. Attempts by buyers (or sellers) to stipulate in trading contracts that the registry cannot obtain such information cannot be accepted under the VDS.

11. Since information about prices in trades is potentially beneficial to VDS-partners, it may be made available to members with the permission of the VDS-partners involved in the trade or more generally on the basis of unanimous agreement to do so.
12. The VDS-registry and trading information will not be accessible to outside parties (including DWF-companies and governments). Some trading information may be made publicly available after the fact (e.g. one year later) in aggregate form if so decided by Parties to the PA.
13. It appears that information about the rules and procedures of the VDS, the principles guiding decisions on the TAE, information about penalties for violations and how vessel, company and Party noncompliance are dealt with could all be public knowledge and accessible through e.g. the PNA Office public webpage.

The issue of effort creep – defined as the rapid development of FAD technology in recent years including the development of sonar buoys and satellite tracking technology which has made it easier for companies and vessels to deploy and track drifting FADs, and importantly to know in advance the potential biomass of fish aggregated under each FAD – was also raised in relation to the VDS. It has been reported that this technology increases fleet/vessel profitability and leads to more targeted fishing, which in turn will influence stock assessment calculations in the future and potentially the long-term health of the fishery. The review of the VDS referred to the following issues related to effort creep:

- As long as an effort-based system is retained, it is vital to continue the efforts by the PNAO to address fishing effort creep by more closely relating individual vessel performance to its calculated use of a standard VD. This would help align the actual fishing mortality and harvest under the VDS to target reference points and reduce the incentives for fishing companies to find ways to bypass the effort constraints.
- We further suggest that the PA be amended or provision made in a new integrated legal instrument allowing for a range of appropriate mechanisms to be integrated into the VDS to manage effort creep.

The stock status of Bigeye tuna

There is no doubt that the reliance of the purse seine fishery in the Western and Central Pacific Ocean on Fish Aggregating Devices, or FADs, has contributed to the depletion of Pacific bigeye tuna and led to other negative effects on the ecosystem. Concern has also been raised over a number of years that the highly efficient practice of FAD fishing, if left unchecked, might exacerbate issues of overcapacity and ultimately lead to the unsustainable exploitation of tuna stocks globally (Fonteneau *et al.*, 2000 & 2013, Davies *et al.* 2014).

It was noted at the most recent WCPFC Scientific Committee meeting that bigeye remains overfished with overfishing occurring. It has been recommended that a 36% reduction in fishing mortality from the 2008-2011 average levels is required to return catch levels to MSY and allow the stock to rebuild above the limit reference point (20% unfished spawning biomass). The Scientific Committee was also tasked to determine a “biologically reasonable timeframe” for bigeye stock recovery. An analysis of five rebuilding scenarios over 30 years indicated only a full fishing closure would enable the stock to rebuild within the average generation time (2-4 years), while the status quo scenario (current management arrangements) could take 8-30 years depending on the acceptable level of risk adopted.

It was also noted at the Scientific Committee meeting that capacity in the purse seine fishery continues to expand since pre-2007 levels when the vessel day scheme was introduced – 279 purse seine vessels actively fished in 2015 vs. 228 in 2007; total gross registered tonnage was 440,000 mt in 2015 vs. 300,000 in 2007; total well capacity was 380,000 m³ in 2015 vs. 250,000 m³ in 2007.

Both silky shark and oceanic white tip shark stocks, heavily impacted by purse seine operations, remain in an overfished state, with overfishing occurring.

There is currently no limit in the number of dFADs that can be deployed in the WCPFC area. In the report of the *2nd Meeting of the FAD Management Options Intersessional Working Group*, held in Pohnpei, Federated States of Micronesia from 28-30 September 2016, it was noted that “anecdotal evidence indicates that the use of sonar buoys, which transmit information on the presence of fish associated with FADs, has rapidly increased in recent years. Preliminary data collected by the PNA suggests that around 80,000 dFADs with buoys are currently being monitored in WCPO of which 30-35% are sonar capable (M. Brownjohn, pers com). However, this must be taken in the context that in this fishery the industry sets about 15,000 sets on fish per year in total so many of the FADs deployed in the fishery are never set on (source M. Brownjohn, pers com)”.

Although it has been argued that the unassociated or non-FAD component of the PNA purse seine fishery, which has been certified since December 2011, has relatively low impacts on bigeye stocks, we feel that it is disingenuous to argue that the same vessels that are having a considerable environmental impacts, including hindering the recovery of bigeye stocks, can be considered to have relatively minor impacts when fishing in a particular way. What makes this separation of different components of a particular fishing voyage into supposedly ‘sustainable’ and ‘unsustainable’ components even more difficult to fathom is that the same fishing vessels that are part of the Unit of Certification (UoC) in this particular fishery are also the ones that are contributing to the current overfishing of bigeye stocks.

In a single voyage a vessel could therefore supposedly fish ‘sustainably’ when not setting fishing gear on FADs, while later in the same day the same fishing vessel could likely be fishing ‘unsustainably’ by deploying additional FADs and fishing on them, without any limitations.

Questioning the validity of rewarding one part of a fishing voyage through certification while largely ignoring the rest of the impacts of a particular voyage is not a new argument. In a recent paper by Moreno *et al.* (2016) they argue that “the division of associated and free schools refers to the way they are detected, as both school types are caught with the same gear (purse seine) by the same fleet (tuna purse seiners) and during the same fishing trip”. They argue that, “such a division is philosophically contradictory, difficult to implement, as well as having high risks of non-compliance”.

The MSC’s premise is that responsible behaviour by fishermen should be rewarded to incentivise further improvements and there is ample proof from other certified fisheries that this approach can be effective. In terms of bigeye conservation the question should however be asked whether the certification of the PNA unassociated /non-FAD fishery has made any meaningful contribution to the rebuilding of bigeye stocks and whether it has made any contribution to improved FAD management of the purse seine fleets which are included in the UoC. The argument around incentivising more responsible fishing techniques or behaviours would have held more water if voyages in the certified fishery were only conducted on free schools. Instead it has led to fishermen switching between ‘sustainable’ and ‘unsustainable’ techniques as it suits them and the markets that they supply.

For us it is not so much an issue of the separation of catch after it has been caught and assurances that the chain of custody certification remains rigorous. We believe that it is possible to put systems in place that will ensure effective segregation and identification of the certified tuna catch from non-certified catches. Our concern centres more on the philosophical issue of artificially separating one component of a particular fishing operation and declaring that ‘sustainable’ while ignoring the impacts that another component of fishing operations have on the ecosystem (on the same vessel, on the same trip, and often on the very same day).

Precautionary approach

International and customary law requires the use of the precautionary approach in fisheries management (MSC, 2014). The MSC uses as its baseline definition for the precautionary

approach the definitions included in the FAO International Code of Conduct for Responsible Fisheries (1995) and the UN Fish Stocks Agreement (1995), Article 6 of which states:

The precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures (The UN Fish Stocks Agreement, 1995).

In the MSC standard the application of the precautionary approach in fisheries management systems is explicitly scored in PIs 3.1.3 and 3.2.2. However, the MSC also intends the precautionary approach to be applied implicitly throughout the Certification Requirements.

When the Echebstar Indian Ocean purse seine tuna fishery was assessed against the MSC standard the UoCs were defined as ‘Purse Seine set on free-swimming schools (‘free sets’)’. The CAB, Acoura Marine, defined unassociated sets as those “that are not made on oceanic megafauna or within several nautical miles of natural or artificial floating objects”. In the section on *Robustness of management systems relating to traceability* (p. 113, Final PCDR v2) unassociated sets are defined as those taking place at a distance of 5nm or more from a FAD. Although not clearly specified it is likely that the CAB settled on the 5nm definition based on a higher level of precaution in the absence of clear scientific evidence.

In a study conducted by Moreno *et al.* in 2007 they interviewed purse seine captains to obtain local ecological knowledge (LEK) to assist in the planning of future *in situ* studies of fish behaviour around drifting fish aggregating devices (dFADs). They found that “most fishing masters agreed that the maximum attraction distance of a dFAD is approximately 10 km....” and that “...the majority of fishers (48%) believe that the attraction distance of tuna to FADs is between 2 and 5 nautical miles”. Studies have also shown that yellowfin tuna can detect anchored FADs from five to eight miles away (Holland *et al.* 1990; Dagorn *et al.* 2000) which seems to indicate that they have a high level of association with FADs at these distances.

Moreno *et al.* (2016) raised some concerns around the scientific rationale when defining a school as ‘unassociated’ when it >1nm from a dFAD. They argued that a number of studies have “attempted to characterize this association with varying results. The range of influence of dFADs on tuna schools may vary from two to ten nautical miles and will vary according to local conditions”. They further argue that “this suggests that tuna schools do not aggregate consistently with floating objects and that it is very difficult and subjective to assign a set distance to define association”.

In the WCPFC a distance of 1nm was adopted during the FAD closure period specified in CMM 2008-01, as “...no purse seine vessel shall conduct any part of a set within one nautical mile of a FAD. That is, at no time may the vessel or any of its fishing gear or tenders be located within one nautical mile of a FAD while a set is being conducted”. A FAD is defined as “any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with”. The 1nm definition seems to have been adopted as a compromise measure for compliance purposes rather than a measure underpinned by rigorous scientific studies.

In the PNA fishery, the UoAs were defined as “an unassociated set is defined as fishing on a free school, which may include a free school feeding on bait fish. There are no associations with objects (natural or man-made), with set distances from such objects of 1 nautical mile or greater”.

The “unassociated set” definition applied in the assessment of the fishery seems to have been based on the 1nm definition adopted by WCPFC for the FAD closure conservation measure rather than any additional scientific evidence of what might constitute a precautionary level of assuming that there was no association with FADs in the vicinity of a set.

It is also important to note that there is no consistent application of what constitutes an unassociated set across tuna-RFMOs. Moreno *et al.* (2016) also point out that the same CAB that was involved in the Echebstar and PNA assessments chose different definitions of what constitutes a free school or FAD-free.

The question should be asked whether in the absence of clear scientific evidence pointing to a 1nm definition as a credible classification of a free school, a 5nm classification would not be more in line with the precautionary approach and satisfy the MSC's own intent that "the precautionary approach be applied implicitly throughout the Certification Requirements (MSC, 2014).

A further issue that was raised by Moreno *et al.* (2016) is the difficulty observers might have in deciding whether any object is within the defined distance of what constitutes an unassociated set. If sea conditions are choppy or other situations where visibility is impaired such as foggy conditions or when sets are done at dusk or dawn, how would an observer be able to declare with certainty that no drifting object or another FAD was not within one or five nautical miles from a particular set? Even with clear skies and good visibility it might be impossible for an observer to determine whether a drifting object, log or FAD is within 1nm or 1.5 nm from a particular set, especially since dFADs are generally designed to have low detection levels and are unlikely to show up on the radar. For an observer to make such an important call - whether a set constitutes an unassociated set or not - in a high-pressure environment, with the paucity of data they have and the high degree of uncertainty of the actual distances involved and the presence or not of semi-submerged objects, can place an unfair burden on their shoulders. This is not so much a chain of custody issue as it is an issue of deciding whether a particular set conforms to the definition of what should be included in the UoC.

The precautionary approach would again dictate that additional measures be employed to ensure a higher level of certainty around might constitute fishing operations with supposedly lower levels of ecosystem impacts.

In our opinion, the lack of robust science, and following the precautionary approach, would dictate that the >5nm definition should prevail for unassociated sets. Additional measures, other than only relying on judgement calls made by observers, should be employed to ensure greater certainty that there is not another vessel's FAD or another floating object within 5nm of its set.

Ghost gear – FADs

The **MSC Principles and Criteria for Sustainable Fishing** include criteria that relate to ghost fishing and gear loss, including that the fishing operation shall:

- Make use of fishing gear and practices designed to avoid the capture of non-target species and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
- Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas; and
- Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.

These Criteria are operationalised in the MSC standard throughout Principle 2. For example, when determining the fishing operation's impact on primary, secondary and ETP species, assessment teams are required to consider unobserved, in addition to observed fishing mortality and impacts. The guidance associated with this clause stipulates that unobserved fishing mortality can include (but is not limited to) ghost fishing. In version 2.0 of the FCR, assessment teams are required to consider whether fisheries review measures to minimise

mortality of unwanted catch. This also includes consideration of unobserved mortality, such as that caused by ghost fishing.

The impacts of gear loss on habitats are considered under the Habitats components. In particular, there is Guidance on the Habitats Management PI (2.4.2) that indicates that in order for a fishery to score a 100, a management strategy should be in place even for gears that do not regularly contact benthic habitats since gear loss or unexpected seafloor impacts could occur. In addition, in the Ecosystem PIs, the team need to consider how the fishery impacts the wider ecosystem structure and function. Indirect effects of lost gear and other operational waste that are not considered directly under the primary, secondary and ETP PIs are considered here.

Although the PNA UoAs exclude fishing on FADs, the same vessels that fish on unassociated schools, are included in the UoAs and can have negative ecosystem impacts when their FADs are lost. Using the PNA's estimate of 80,000 dFADs deployed per year, and the fact that only 15,000 dFADs are actually set on, then up to 65,000 are abandoned, lost, or discarded with unknown impacts as ghost fishing gear and marine litter.

The FAO Technical Guidelines for Responsible Fisheries - Fishing Operations – 1, Annex III, includes the following proposed system for the marking of fishing gear: 6. Fish Aggregating Devices 6.1 The authorization to fish should also include conditions in relation to the deployment of fish aggregating devices and, in addition to carrying a mark to identify ownership of a FAD, the authorization should relate to the: a) type of FAD; b) location of the allocated datum geographical position; and, c) the fishing activities permitted at the FAD. 6.2 The responsibility for recovery of drifting FAD's should lie with the owner. 6.3 The loss of a FAD (drifting or anchored) should be treated in the same way as lost or abandoned fishing gear.

In the Indian and Atlantic Oceans, an estimated 10% of dFAD deployments result in a beaching event (Malfray *et al.* 2015). As to ghost fishing, dFADs also entangle vulnerable marine fauna, including sea turtles and sharks. In the Indian Ocean, it is estimated that entanglement mortality of silky sharks (480 000–960 000 silky sharks per year) was 5–10 times that of the known bycatch of this imperilled species from the region's purse-seine fleet. No such estimates are available for the WCPO, but there is evidence to suggest that dFADs deployed by the vessels participating in the MSC certified unassociated purse seine fishery contribute to the ghost fishing of endangered, threatened, and protected species, in particular sharks and sea turtles in the region.

Balderston and Martin (2015) have found that lost dFADs used by the purse seine fleet in the Indian Ocean can have major impacts when becoming beached on reefs and other sensitive habitats. FAD WATCH is a collaborative programme between several organisations with the aim of preventing and mitigating Fish Aggregating Device (FAD) beachings across islands in Seychelles where the Island Conservation Society (ICS) has a presence. A Memorandum of Understanding (MoU) was recently signed in July 2016 by the Spanish Purse Seining Fishing Fleet (OPAGAC/AGAC), Island Conservation Society (ICS), Islands Development Company (IDC) and Seychelles Fishing Authority. Under this system an automated alert system will be setup at ICS that will report whenever a FAD arrives within 5 nautical miles of any atoll where ICS has a permanent presence, and provide GPS co-ordinates, trajectory and estimated projected time of beaching. This will allow ICS staff time to plan and intercept these FADs before beaching occurs, damages reefs and/or impacts on key marine fauna.

The PNA, with support from Pew and the Gordon and Betty Moore Foundation, are already implementing FAD tracking in their waters. This tracking information will allow the PNA States to better monitor FAD fishing in their waters and implement similar systems as in the Seychelles to protect sensitive habitats from the impacts of lost dFADs. Ideally this is a system that should be implemented throughout the WCPFC area.

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Appendix 4: Client (PNA) submission following Client Review

NOTE ON PDR REFERENCE TO TAE TRANSPARENCY

Page 39 of the report says:

The procedures for reaching agreement on TAE and PAE, and their correspondence with scientific advice is not transparent but the TAE must take account of WCPFC-agreed measures such as effort and capacity limits set in CMM 2015-01.

In the PNAO view, this is not appropriate in respect of the PAEs and not correct in respect of the TAE.

On the PAEs, the process for determining PAEs is set out in detail in documentation for Parties to the Palau Arrangement, but is not made public. There is no apparent reason for it to be made public in terms of MSC considerations. The real issue for the certification relating to PAEs (and other detailed internal features of the VDS) is whether issues related to those features, such as for example disagreements over PAEs, have undermined the effectiveness of the VDS and the associated WCPFC effort limits – and the answer is that they have not. The best example of such a feature is the treatment of non-fishing days, where there was at one point clearly a problem with the potential to undermine the TAE, but where analysis showed that the weaknesses in NFD handling had not undermined the TAE.

It is the TAE that should be the focus of external transparency considerations. And in the PNAO view, the process for setting the TAE, and its relation to the scientific advice, is very transparent. The details are set out in Working papers on the PNA website, the latest being:

<http://pnatuna.com/sites/default/files/PS%20VDS%20TAE%20for%202017%20%26%202018.pdf>

This paper records the latest scientific advice on skipjack as follows:

“take action to avoid further increases in fishing mortality and keep the skipjack stock around the current levels, with tighter purse-seine control rules and advocates for the adoption of TRP and harvest control rules.”

The paper also notes the scientific advice that maintaining adult skipjack stock size at what is now the skipjack TRP is roughly equivalent to maintaining fishing effort on skipjack at around the 2012 level, so that there is no room to increase fishing mortality if the adult biomass is to be maintained at this level.

The TAE is then calculated using the level of effort in PNA EEZs in 2010 which was decided by the Commission in CMM 2013-01 and then confirmed in CMM 2014-01 in response to the scientific advice on skipjack following the 2014 skipjack assessment. The actual TAE is calculated by applying an adjustment factor to the estimated effort in PNA EEZs advised by SPC from logsheets (typically in the range of 2-3%) to calculate a VDS TAE in VDS days after allowing for the vessel length adjustment factors in the VDS

The discussion on these papers takes place at sessions of the annual meetings of the Parties to the Palau Arrangement and PNA Ministers that are open to observers and are regularly attended by observers, including NGO observers.

The process described above was established to respond to a previous certification condition for PI 3.2.2 to address the requirement that: *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.

On this basis, we propose that the text on page 39 of the report should be revised along the following lines:

The VDS TAE is determined annually in advance, currently for the next two years, based on the best available scientific, economic and management information and advice. The TAE is limited by the decisions of the WCPFC on the level of purse seine effort in PNA EEZs. The current provision in CMM 2015-01 limiting purse seine effort in PNA waters to the 2010 level was confirmed by the Commission following advice from the Scientific Committee based on the 2014 skipjack stock assessment that the Commission should “take action to avoid further increases in fishing mortality and keep the skipjack stock around the current levels.” The actual TAE is calculated by applying an adjustment factor to the estimated effort in PNA EEZs advised by SPC from logsheets (typically in the range of 2-3%) to calculate a VDS TAE in VDS days after allowing for the vessel length adjustment factors in the VDS. The analysis of the relevant scientific, economic and management information and advice on which the TAE is based is included in a Working Paper to the annual meeting of the Parties to the Palau Arrangement which is available on the PNA website. The discussion and decision-making among Parties on these papers takes place at sessions of the annual meetings of the Officials of the Parties to the Palau Arrangement that are open to observers and are regularly attended by observers, including NGO observers. Fishing days (PAE) are allocated to each PNA country and can be traded amongst the eight countries in a single licensing year under conditions designed to ensure that the TAE is not exceeded. At the 20th Annual PNA Meeting in the Federated States of Micronesia in March 2015, the PNA countries agreed to confirm the provisional 2015 TAE of 44,625 days. In addition, a TAE of 44,890 days was adopted for 2016 and set as the provisional PNA TAE for 2017. In addition, non-PNA Member Tokelau joined the VDS in 2015 and was allocated a TAE of 985 days for 2015, and 991 days for 2016; and 45,881 days for 2016 (<http://www.pnatuna.com/VDS>).

Appendix 5: Client submission on PNA draft assessment details, scoring issues and condition setting



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28/2/17

Response from PNAO on PNA Draft Assessment Details, Scoring Issues and Condition setting

Dear Jason

1.2.1a FOR SKIPJACK

The situation in respect of this issue is well set out in the PDR as follows (See Attachment 1):

Whilst the reassessment team considered that SG80 requirements were met by the PNA fishery, other CABs did not agree and indicated that there was insufficient new information to change the finding.

This outcome is unsatisfactory, and the PNAO considers that some form of adjudication process will be essential on the result for Scoring Issue 1.2.1a for skipjack to address the following factors:

- a) **Failure to harmonise the assessments on WCPO skipjack that followed the assessment of the PNA skipjack free school fishery with the PNA assessment**
- b) **Weaknesses in the Hong Kong harmonisation meeting and process**
- c) **Weaknesses in the follow up process to Hong Kong**
- d) **The need to take into account new information**

Failure to harmonise the assessments on WCPO skipjack with the PNA assessment

The failure to harmonise the Trimarine assessments scoring on PI 1.2.1 a) with the PNA assessment was partially based on the conclusion by the Trimarine assessment team that the PNA assessment was wrong in concluding that *"the Commission responded to the change in the results of the skipjack assessment and the more cautionary tone of the scientific advice in 2010 by deciding to address the management of skipjack explicitly in the preparation of a CMM to replace CMM 2008-01 beyond 2011."* because *"At the time of that assessment the specific measures to be contained in the CMM had not been agreed or adopted."*, and therefore should not be considered as a management action. This based upon Banks at al 2011 as a reference. This conclusion was already tested in adjudication on an objection to PI 1.2.1a being scored at 80, with the objectors (e.g. OPAGAC) arguing that this conclusion *"is based on a potential outcome (WCPFC will not decide on a replacement CMM until December, 2011), rather than on existing evidence, and therefore SG80 guidelines are not met at the present time."*

That same position was rejected by the Independent Adjudicator who noted in rejecting a broader objection against a score of 80 for scoring Issue 1.2.1a that *"I accept in particular on this basis that the decision to replace CMM 2008-01 to expressly deal with skipjack tuna is reasonably viewed as a management action in itself. While this decision of the Independent Adjudicator is not binding on other*

CABs, there is no basis for any change in interpretation on the status of the WCPFC decision by the Trimarine Assessment Team, and in this respect therefore the Trimarine Assessment was clearly wrong.

In addition to this point, the Trimarine assessment concluded that *“the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and 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.”* The conclusion of the Trimarine assessment that SG80 was not met on this basis was also wrong for 2 main reasons:

- a) The Trimarine assessment did not take into account the evolution of the WCPFC measures relating to skipjack and the development of the VDS in response to the state of the skipjack stock which are described more fully below which show that the harvest strategy in place has been responsive to the state of the stock and that the elements of the strategy work together towards achieving management objectives; and
- b) The Trimarine assessment misinterpreted the requirement for SG80. The assessment tested the effectiveness of the elements of the harvest strategy against the standard of whether these elements *“will work together when required to do so to achieve the management objectives.”* But that isn't the language of SG80, and in fact it is closer to the language of SG100. The appropriate standard for SG80 is whether the elements of the harvest strategy *“work together towards achieving management objectives reflected in the target and limit reference points.”* As discussed below, the elements of the harvest strategy for skipjack cannot at this point be said to work to achieve management objectives but they clearly work towards achieving management objectives. At the least, the Trimarine assessment clearly did not correctly assess the fishery against the appropriate SG80 standard.

It is also noted that Trimarine (and Trimarine UST), undertaking a similar purse seine assessment failed to undertake a formal harmonisation process with the PNA Assessment team.

The Solomon Islands assessment determined that the WCPO skipjack fishery did not meet SG80 for SI 1.2.1 a) because the team *“can therefore not conclude that the harvest strategy is responsive to the state of the skipjack stock.”* There is no specific comment in the rationale relating to whether the elements of the harvest strategy *“work together towards achieving management objectives”*. However, the assessment report notes in the conclusion to Section 3.1.1 that

“In conclusion, under the combination of monitoring, stock assessment, and management action (even in the absence of formal harvest control rules) which are in place now, the stock is estimated to be at 48% SBF=0, and is approaching twice the SBMSY level of 28%SBF=0, and fishing mortality is estimated at 0.61FMSY. Future projections made by the SC (WCPFC, 2014a) indicated that it is highly unlikely for the skipjack stock to become overfished (SB2032<20%SBF=0) or for the spawning biomass to fall below SBMSY, and it is highly unlikely for the stock to become subject to overfishing (F>FMSY).”

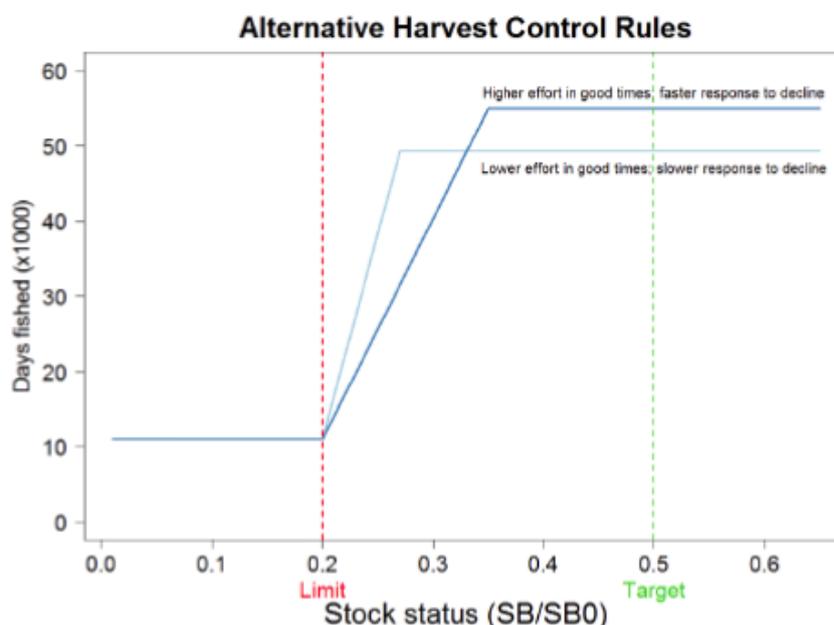
which might be taken as indicating that the elements of the current harvest strategy do work together and management objectives are being achieved, even without formal or fully specified arrangements to adjust fishing to stock status.

With respect to the responsiveness of the harvest strategy, the Solomon Islands assessment referred to:
Some weaknesses identified in the VDS, documented by Banks et al. (2011) included the lack of a clear link between the PAE and scientific advice on stock status. There is no clear linkage between potential catch and allocated effort. Absence on linkage is also confirmed by Kirchner et al. 2014

(Figure 12), who proposed alternative HCR that would establish linkage between stock status and days fished.

With respect to these points:

- a) **The reference to “the lack of a clear link between the PAE and scientific advice on stock status”** was correct at the time of the original PNA fishery assessment but it is no longer correct because it has been overtaken by events in two directions:
 - i) **The TAE and PAEs now cover all effort in PNA EEZs.** At the time of the original assessment, the effort of domestic vessels was not limited and foreign fleets with access agreements in place were entitled to fully take up any latent effort within those agreements both under the WCPFC Tropical Tuna CMM and the VDS. As a result there was no fixed TAE, and the TAE and PAEs rose as domestic fleets expanded and foreign fleets took up their agreed entitlements. In that sense there was no link of the TAE or PAEs to scientific advice on stock status, although the rationale for this open-ended TAE was that the stock was lightly exploited ($F/FMSY = 0.17$, $SB/SBMSY = 3.72$) so this arrangement was generally a response to the scientific advice on the stock status. As detailed below, the WCPFC CMMs and the VDS have been through a process of evolution as fishing mortality has increased which has resulted in a VDS TAE that is limited directly by a WCPFC-determined effort limit decided on following advice of the WCPFC Scientific Committee on stock status.
 - ii) **The PNA has improved explanations of the relationship of the TAE to the scientific advice on stock status.** This was required by a condition in the original assessment on PI 3.2.2 (Decision-making Processes) following the conclusion of that assessment that *“there is a lack of clarity in the links between decisions on the VDS and the requirements of WCPFC CMM 2008-01 and the best available scientific information”*, and advice that *“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.* This condition was met by the annual provision of papers that explain the link between the TAE, WCPFC requirements and the scientific advice which are available on the PNA website.
- b) The basis for the requirement that there should be “clear linkage between potential catch and allocated effort” is not clear. It is certainly possible to develop an HCR for skipjack that does not have a formal linkage between catch and allocated effort. For example, the form of HCR proposed by Kirchner et al. in the work referred to in the quote above involves a direct link between effort and stock status without any formal linkage between catch and allocated effort as illustrated in the figure below (see Figure 12 in the Solomon Islands assessment):



The more important issue here however, and perhaps the key reason for the differences on scoring of 1.2.1 a) overall is the extent to which there needs to be a clear/formal linkage between the VDS TAE/allocated effort and stock status for the purpose of SG100 of 1.2.1 a) compared to SG80. The Solomon Islands assessment appears to be based on the interpretation that the “responsiveness” requirement cannot be met without an agreed mechanism of some form in place that indicates how catch or effort would be adjusted in response to changes in stock status. By comparison, the original PNA assessment on this issue, tested in adjudication, and the PNA reassessment are based on the interpretation that a less formal process of adjustment within the harvest strategy is sufficient to demonstrate “responsiveness”.

Weaknesses in the Hong Kong harmonisation meeting and process

The Hong Kong pilot harmonisation process was clearly well-intentioned and valuable. However, the process was weakened by 4 factors;

- a) **Incomplete participation:** the basis for participation in the Hong Kong meeting and subsequent consultations is not clear. However, the result was that members of the assessment teams for the Trimarine and Solomon Islands assessment teams participated, but there was no participation from the PNA fishery assessment team. This was unfortunate since it should have been clear that the differences in the 1.2.1a scoring between these assessments would be one of the major issues for the process, and the Hong Kong process would likely have resolved that issue and avoided the ongoing difficulties if participation had been more inclusive
- b) **Inadequate Consultation with Stakeholders:** in the manner noted by the Peer Reviewer, the process was weakened by the low level of interaction with stakeholders over key issues
- c) **Incomplete Information:** the Hong Kong session report describes the report as “a working document prepared by all involved assessors to inform and guide CAB teams as they assess tuna fisheries in the WCPFC area. It is intended as a point of reference for multiple ongoing assessments as of April 2016. As mentioned above, if new information becomes available, harmonisation between assessment teams will still be required. New information of relevance

may come from fisheries under assessment, the WCPFC, other tuna fisheries under assessment in different regions, MSC interpretations, etc.”

However, it is not clear what information was used in the Hong Kong process, and therefore what might be considered as “new information”. For example there is no evidence that the Independent Adjudicator ruling on objections to the PNA assessment used, including in relation to PI 1.2.1 (though it is reported that an IA ruling was used in consideration of scoring of 1.2.2), nor that the information below on the evolution of the WCPFC tropical tuna CMMs and the VDS in relation to stock status was appropriately considered.

- d) **Inadequate reporting of Outcomes:** one of the results of the lack of inclusiveness of the Hong Kong process is that the process provides no information on the basis for the conclusion to score WCPO skipjack at 70 for PI 1.2.1. The report of the Hong Kong session simply says that there was good agreement between the participating CABS, Independent Experts and the peer reviewer, and that the differences between the PNA assessment and other assessment are due *“most importantly, to the considerations of a now larger set of IEs and its interpretation of the CR.”* There is no further information on the differences in interpretation. That differences in interpretation remain and need to be clarified is clearly indicated by the current PNA fishery reassessment team concluding that the skipjack fishery meets SG80. The issues involved in this interpretation are discussed below.

Weakness in the follow up process to Hong Kong: the PNA fishery reassessment team have advised that, consistent with the report of the Hong Kong process: *“Further harmonisation discussions took place in October and November 2016 with other CABS involved in the Hong Kong meeting and which had undertaken the MSC assessment of other WCPO skipjack fisheries for which scoring issue 1.2.1a had been found to meet SG60 requirements but not SG80. Whilst the reassessment team considered that SG80 requirements were met by the PNA fishery, other CABS did not agree and indicated that there was insufficient new information to change the findings of the Hong Kong meeting. In keeping with MSC requirements for harmonisation, scoring issue 1.2.1a is scored as having met SG60 requirements but not SG80.”*

It is clear that the process following Hong Kong has not been sufficiently robust to clarify the differences among CABS relating to SI 1.2.1 a). These differences are longstanding, since they appear to originate from differences between the original PNA assessment and subsequent assessments. However, the differences are apparently rather limited in scope, since they appear to revolve largely around the issue of level of formality required in terms of the responsiveness of the harvest strategies to stock status. But it is important to resolve the differences because of the implications of the issue for the terms of any condition. In the view of the PNAO, this process has also not been sufficiently transparent. In this circumstance, some additional process is necessary, preferably with some form of independent adjudication.

PNA View on Interpretation of the Scoring Guideposts for SI 1.2.1 a)

The scoring guideposts are:

- SG80: 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 reflected in PI 1.1.1 SG80.
- SG100: The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.

To meet SG80, evidence is needed that:

- the harvest strategy is responsive to the state of the stock

- the elements of the harvest strategy (defined by MSC to include monitoring, stock assessment, harvest control rules and management actions) work together towards achieving stock management objectives reflected in PI 1.1.1.

As discussed above, **what constitutes responsiveness is a key issue in the interpretation of SG80 for SI 1.2.1 a).** For PNA, evidence of responsiveness involves identifying changes in the elements of the management strategy – monitoring, stock assessment, HCRs and management actions - in response to the state of the stock. The table below sets out a timeline of responses of the elements of the harvest strategy including increased monitoring, more frequent assessments, progress towards harvest control rules and a series of management actions developing the WCPFC CMMs and the VDS as the skipjack stock status has moved from being *“exploited at a modest level”* to being still *“only moderately exploited”*, as indicated by the scientific advice. This approach to determining responsiveness has been tested and accepted in MSC adjudication.

This the approach that has been adopted by the PNA reassessment team as explained in the extract from the report in Attachment II. The PNA re-assessment team have also found additional evidence of responsiveness of the harvest strategy in the annual changes to the VDS TAE made in response to given changes in scientific advice on the effective effort level in 2010 (to which effort is capped) and changes in fleet structure.

The alternative approach is that responsiveness requires a formal/explicit mechanism (for this effort-managed fishery) relating effort, catch and stock status that sets out how catch or effort would be adjusted in response to changes in stock status. That approach essentially requires an SG100 level harvest control mechanism that *“is designed to achieve stock management objectives”* as evidence of responsiveness which would be an unreasonably narrow interpretation of the requirement for SG80.

The second key issue arising key issue in the interpretation of SG80 for SI 1.2.1 a) is what is meant by the elements of the harvest strategy **working together towards achieving** stock management objectives, and how this compares with the SG100 requirement that the harvest strategy **is designed to achieve** stock management objectives.

For PNA, this relates again largely to the formality/clarity, in this case, of the link between catch or effort and stock status. On this basis, as noted above, SG100 generally requires commitment to a mechanism that sets out how catch or effort would be adjusted in response to changes in stock status, being specifically designed to achieve management objectives. However, for SG80, a less well defined mechanism is required. In this case, the evidence of the elements of the harvest strategy working together to constrain fishing and of the management objectives being met should be sufficient to meet the requirements of SG80. That is broadly the conclusion of the reassessment team. That approach is also supported by the results of the adjudication on the initial PNA assessment, where the Independent Adjudicator ruled on this issue that *“The objectors criticisms are however essentially challenges to whether SG100, which concerns harvest strategy design, is made out.”*

For these reasons, the PNA supports the interpretation and scoring by the PNA fishery reassessment team of the Scoring Guideposts for SI 1.2.1 a) and is confident that independent adjudication would support the scoring by the reassessment team.

Stock Status	Scientific Committee Advice	Harvest Strategy Responses
2005: Assessment estimates $F/F_{MSY} = 0.17$,	2005: SC1 advises that <i>“skipjack is currently exploited at a modest level relative to its biological potential. Furthermore, the estimates of $F_{current}/F_{MSY}$ and $B_{current}/B_{MSY}$</i>	2005: WCPFC adopts CMM 2005-01: Conservation and Management Measures for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean – aimed at managing

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SB/SB _{MSY} = 3.72	<i>reveals that overfishing of skipjack is not occurring in the WCPO, nor is the stock in an overfished state (Figure S8). Recruitment variability, influenced by environmental conditions, will continue to be the primary influence on stock size and fishery performance."</i>	bigeye and yellowfin, not skipjack, limits purse seine effort to 2004 or average 2001-4 levels (para 8) with an exemption for domestic vessels (para 6) and provision for existing access agreement effort levels to be allowed for within the effort limits (footnote 1)
		2007: VDS comes into force with domestic vessels and US vessels not subject to limits. (see 2005 VDS text)
2008: Assessment estimates F/ F _{MSY} = 0.26, SB/SB _{MSY} = 3.82	<i>SC4 "acknowledged that skipjack catches in 2007 increased to a historical high of ~1.7 million t. These high recent catches are considered to be sustainable unless recruitment falls persistently below the long-term average. However, any increases in purse-seine catches of skipjack may result in a corresponding increase in fishing mortality for bigeye and yellowfin tunas."</i>	WCPFC5 adopts CMM 2008-01: Conservation and Management Measures for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean – also aimed at managing bigeye and yellowfin, not skipjack, maintaining the exemption for domestic vessels and the provision for existing access agreement effort to be allowed for. 100% observer coverage on purse seine vessels is introduced.
2010: Assessment estimates F/ F _{MSY} = 0.34, SB/SB _{MSY} = 2.67	<i>SC6 advises that "The assessment continues to show that the stock is currently only moderately exploited and fishing mortality levels are sustainable. Catch rate levels are likely to decline and catch should decrease as stock levels are fished down to MSY levels. Due to the rapid change of the fishing mortality and biomass indicators relative to MSY in recent years, increases of fishing effort should be monitored."</i>	WCPFC7 decides to extend the CMM to replace CMM 2008-01 to cover skipjack as well as bigeye and yellowfin (see Attachment V of the WCPFC7 Report)
2011: Assessment estimates F/ F _{MSY} = 0.37, SB/SB _{MSY} = 2.94	<i>SC7 advises that: "The assessment continues to show that the stock is currently only moderately exploited (F_{cur}/ F_{MSY} = 0.37) and fishing mortality levels are sustainable. If recent fishing patterns continue, catch rate levels are likely to decline and catch should decrease as stock levels are fished down to MSY levels. Due to the rapid change of the fishing mortality and biomass indicators relative to MSY in recent years, increases of fishing effort should be monitored. The Commission should consider developing limits on fishing for skipjack to limit the declines in catch rate associated with further declines in biomass."</i>	<ul style="list-style-type: none"> • Observer-adjusted catch estimates replace logsheet-based catch estimates in the reference case of the assessment • PNA advise the WCPFC that they will apply a hard limit to purse seine effort in their EEZs, limiting effort to the 2010 level (see CMM 2011-01), removing the exemptions for domestic vessels and US vessels and a range of other elements that allowed flexibility in the setting and use of PAEs. • 2011 on: PNA Members revise the VDS text to: <ol style="list-style-type: none"> a) Remove carryover of unused PAEs (see old¹ para 2.4) b) Bring the effort by domestic vessels and US vessels under a hard TAE (see old Article 3) c) Remove transfers of PAEs between years (see old Article 7) d) Remove provision for temporary increases in PAE (see old para 12.6)

¹ Refers to 2005 Text

		(For these changes see 2005 and 2016 VDS texts)
2012:		WCPFC10 adopts CMM 2012-01, as a measure for the conservation and management of skipjack as well as bigeye and yellowfin, including binding purse seine effort limits without exemptions for all EEZs, including limiting effort in PNA EEZs to the 2010 level (see paras 12-14 of the CMM), and extends the effort and capacity limits of other commercial fisheries to apply also to skipjack (see para 30).
2014: Assessment estimates $F/F_{MSY} = 0.61$, $SB/SB_{MSY} = 1.86$	SC10 advises: <i>"The assessment continues to show that the stock is currently only moderately exploited ($F_{current}/F_{MSY} = 0.61$) and fishing mortality levels are sustainable. However, the continuing increase in fishing mortality and decline in stock size are recognized. ... The spawning biomass is now around the mid-point of the range of candidate TRPs of 40%, 50% and 60% of unfished spawning stock biomass that WCPFC10 has asked SC10 to consider for skipjack tuna. SC10 recommends that the Commission take action to avoid further increases in fishing mortality and to keep the skipjack tuna stock around current levels, with tighter purse-seine control rules and advocates for the adoption of TRPs and harvest control rules.</i>	PNA and Tokelau propose adoption of a skipjack TRP at WCPFC11, referring to the SC10 advice based on the 2010 assessment (see WCPFC11-2014-DP12).
2015:	SC11 maintains the advice from SC10	<ul style="list-style-type: none"> • PNA adopts interim skipjack TRP • WCPFC12 adopts: <ol style="list-style-type: none"> a) an interim skipjack TRP as proposed at WCPFC11 by PNA based on an updated proposal by PNA and other FFA Members responding to the advice of SC 10 and SC11 (CMM 2015-06) ; and b) a harvest strategy workplan providing in respect of skipjack for recording of management objectives, agreeing on acceptable levels of risk, a monitoring strategy and performance indicators; and developing a HCR using MSE
2016: Assessment estimates $F/F_{MSY} = 0.45$, $SB/SB_{MSY} = 2.31$	SC12 advises that <i>"skipjack spawning biomass is now around the adopted TRP and SC12 recommends that the Commission take action to keep the spawning biomass near the TRP and also advocates for the adoption of harvest control rules based on the information provided."</i>	<ul style="list-style-type: none"> • WCPFC13: <ol style="list-style-type: none"> a) accepts a list of performance indicators for tropical purse seine fisheries for the purpose of the evaluation of HCRs b) adopts an approach to accounting for acceptable levels of risk of breaching the LRP for each stock; and c) adopts a revised harvest strategy workplan

2.3.1b and 2.3.2b - ETPs

Known direct effects of the UoA are highly likely to not hinder recovery of ETP species. The assessors have used an incorrect definition to define ETP species. The application of IUCN refers –out of scope species, which are defined as out of scope species (amphibians, reptiles, birds and mammals) (SA3.1.5.3). The assessors need to consider the categorization of manta and devil rays against either CITES Appendix 1, or Binding agreements concluded under the Convention on Migratory Species (CMS),

We note also that the conclusion by the assessors is that Overall, the known direct effects of the PNAFTF are highly likely to not hinder recovery of devil rays and Manta rays, and the fishery meets the SG80 level of performance for these species. In the absence of population data, though, the fishery can score no higher. The catch of devil rays (0.010%), giant manta rays (0.009% and unidentified manta rays (0.002%) represents a very small percentage of the PNAFTF catch.

It is with some concern then, that with this information, and interpretation, that the assessors have chosen to raise a Condition when 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 and the number interactions are minimal.

Were a condition to be set, and we do not agree that it should, the third scoring the current condition requirements are prescriptive and, and PNA considers that there is no justification to produce evidence that the strategy does not hinder recovery, when in the outcome scoring already meets the SG80.

We would suggest that the CAB considers a recommendation which is similar to the wording discussed at WCPFC.

Condition setting

PNA Is advised that the conditions, as specified are too prescriptive. We have reviewed other assessments. We have been advised that the nature of the Conditions should not be explicit, leaving the Client to decide on the most appropriate course of action. We have been provided with the following working example:

By the first surveillance audit, the fishery client must present evidence that a plan is in place to address this condition.

By the second surveillance the fishery client must present evidence that the plan has been implemented.

By the third surveillance audit the fishery client must demonstrate that this condition has been satisfied, at which time the fishery will be scored at least SG80.

Yours sincerely



Maurice Brownjohn OBE

ATTACHMENT 1

JUSTIFICATION FOR SCORING OF PI 1.2.1 a (see p 115 of the Draft PDR Jan 2017)

MSC guidance defines a harvest strategy as the combination of monitoring, stock assessment, harvest control rules and management actions. It is intended that these elements work together towards achieving management objectives. The current harvest strategy is not formalised but consists of the elements considered at PIs 1.2.2, 1.2.3, and 1.2.4.

The operational harvest strategy for WCPO skipjack tuna has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. CMM 2015-01 and its predecessors are fundamental in the current harvest strategy for skipjack tuna. The primary objective of CMM 2015-01 is that "Compatible measures for the high seas and exclusive economic zones (EEZs) are implemented so that bigeye, yellowfin and skipjack tuna stocks are, at a minimum, maintained at levels capable of producing their maximum sustainable yield as qualified by relevant environmental and economic factors including the special requirements of developing States in the WCPFC-CA as expressed by Article 5 of the Convention." CMM 2015-01 lays out catch controls, measures for FAD set managements, and capacity limitation measures. Tools adopted by WCPFC include effort limits in major purse seine fisheries, FAD closures, high seas closures, and a discard ban in purse seine fisheries. Additional FAD measures are also in place for 2016 and 2017. Purse seine effort controls are in place in coastal states EEZs.

Explicit LRPs have been adopted for biomass and the fishing mortality rate. In December 2015, the Commission adopted an explicit MSY-related biomass TRP. At this point, harvest control rules have not been adopted. There is an extensive information base from a wide range of biological studies and from a diverse range of fisheries. The information is sufficient to support a state-of-the-art stock assessment that provides probabilistic estimates of key parameters and their relationship to reference points. Advice from the stock assessment is provided by the Scientific Committee and additional work is carried out by the scientific provider, SPC, to the Commission. Annual decision-making is articulated through CMMs and is supported by good scientific decision-support systems. CMM 2014-06 spells out the future direction for strengthening the harvest strategy, including the development of harvest control rules, and a work plan has been agreed to implement this.

As indicated above, there are measures in place that are intended to control fishing mortality for purse seine fishing, including effort and capacity limits. A major measure is the PNA Vessel Day Scheme (VDS) which determines Total Allowable Effort (TAE) and Party Allocations of Effort (PAE).

*MSC CRv2.0 (PB3.1) states that "CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessments". As discussed earlier in the report (Section **Error! Reference source not found.**), a meeting was held in Hong Kong in April 2016 to consider harmonisation of the P1 components of tuna fisheries in the Pacific. An outcome of this was a review of the requirements for meeting SG80 requirements for PI 1.2.1a.*

The original PNA skipjack assessment (Banks et al. 2011) scored the fishery as meeting the SG80 level for 1.2.1a on the basis that "The elements of the harvest strategy work together in that the implementation of the purse seine effort limit systems is based on the FFA and WCPFC VMSs, the WCPFC management actions in respect of the purse seine fisheries are largely based on the PNA actions" and that "the Commission responded to the change in the results of the skipjack assessment and the more cautionary tone of the scientific advice in 2010 by deciding to address the management of skipjack explicitly in the preparation of a CMM to replace CMM 2008-01 beyond 2011." Overall, the original score for PI 1.2.1 for the PNA fishery was 80.

*Other skipjack fisheries considered at the Hong Kong meeting (**Error! Reference source not found.**) have considered that SG80 is not met for 1.2.1a and have awarded an overall score of 70 for PI 1.2.1 (**Error! Reference source not found.**), and suggest that the PNA score should align with this score. It was agreed that the 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, hence it was concluded that a score of 70 is warranted for PI 1.2.1 and a condition is required. The rationales for this conclusion are contained in relevant fishery reports which can be found on the MSC website.

*Section **Error! Reference source not found.** (Box 1) of this report outlines the assessment team's consideration of the information available at the time of the reassessment. The assessment team consider that there is a strong case for the PNA fishery meeting the SG80 scoring requirements for scoring issue 1.2.1a. The PNA has been pro-active in implementing measures to manage harvesting. Given that the PNA purse seine fishery accounts for almost 60% of the skipjack tuna catch from the WCPO, its actions have played a major role in the development of a WCPFC harvest strategy. In considering the current harvest strategy, developments through PNA and WCPFC include:*

- The PNA Vessel Day Scheme (VDS). This is a major component of the overall harvest strategy for skipjack tuna. It determines Total Allowable Effort (TAE) and Party Allocations of Effort (PAE) for PNA countries. An independent review of the VDS was undertaken in 2014 (PNA 2015b). The VDS has been progressively improved over time to address identified shortcomings (e.g. rollover of days between years and over-runs of some national PAEs). Initially, The TAE established a limit on the total number of fishing days that could be fished in PNA members' EEZs. The scope of the VDS has been expanded and now includes an allowance for Tokelau working with PNA. The US purse seine fleet also came under the VDS during 2013.*
- The developments of the VDS and CMM 2015-01 and its predecessors now mean that an effort cap for purse seine fishing has been adopted across the WCPO.*
- The harvest strategy for skipjack tuna includes appropriate monitoring and assessment, as well as target and limit reference points.*
- The current stock status provides evidence that the elements of the harvest strategy work together towards achieving stock management objectives.*

The "responsiveness" to the state of the stock is less obvious given the current status of the stock (i.e., $F_{2008-11}/F_{MSY}=0.61$, $SB_{2015}/SB_{MSY} = 2.56$), which has meant that effort reductions have not been required to date. However, the initiatives by the PNA to develop the VDS and the response of WCPFC in adopting updated CMMs for skipjack tuna indicate a level of responsiveness adequate to meet SG80 requirements. Importantly, the adoption of effort limits provides leverage to address the need for further strengthening of management when and if required through the implementation of harvest control rules.

In the interests of harmonisation, the assessment team undertook discussions in October and November 2016 with other CABs involved in the Hong Kong meeting and which had undertaken the MSC assessment of other WCPO skipjack fisheries where scoring issue 1.2.1a had been scored as meeting SG60 requirements but not SG80. Whilst the reassessment team considered that SG80 requirements were met by the PNA fishery, other CABs did not agree and indicated that there was insufficient new information to change the finding.

In keeping with MSC requirements for harmonisation, scoring issue 1.2.1a is scored as having met SG60 requirements but not SG80. A Condition of Certification (#1) is therefore set on UoA 1 of the PNAFTF.

ATTACHMENT II: PNA Reassessment Overview of harvest strategy for skipjack tuna and harmonisation of PI 1.2.1a scores

Box 1: Overview of harvest strategy for skipjack tuna and harmonisation of PI 1.2.1a scores

The operational harvest strategy for WCPO skipjack has several contributing components, with WCPFC, PNA and national and archipelagic waters management actions being supported by a robust stock assessment and extensive monitoring frameworks. CMM 2015-01 and its predecessors are fundamental in the current harvest strategy. The primary objective of CMM 2015-01 is that compatible measures for the high seas and EEZs are implemented "...so that bigeye, yellowfin and skipjack tuna stocks are, at a minimum, maintained at levels capable of producing their maximum sustainable yield as qualified by relevant environmental and economic factors including the special requirements of developing States in the Convention Area as expressed by Article 5 of the Convention."

To meet the SG80 score, evidence is needed that the harvest strategy is responsive to the state of the stock and the elements work together. The current harvest strategy is not yet formalised by the WCPFC but incorporates a range of elements considered at PIs 1.2.2, 1.2.3, and 1.2.4. Harvest control rules have not yet been formally adopted by WCPFC, however there is a process underway (CMM 2014-06 and its work plan) and there has been extensive preparatory work through several Management Objectives Workshops. The PNA has nevertheless been pro-active in implementing measures to manage harvesting. Given that the PNA purse seine fishery accounts for almost 60% of the skipjack tuna catch from the WCPO, its actions have played a major role in the development of a WCPFC harvest strategy. Developments through PNA and WCPFC include:

- The PNA Vessel Day Scheme (VDS), a major component of the overall harvest strategy for skipjack tuna. It determines Total Allowable Effort (TAE) and Party Allocations of Effort (PAE) for PNA countries. An independent review of the VDS was undertaken in 2014 (PNA 2015b). The VDS has been progressively improved over time to address identified shortcomings (e.g. rollover of days between years and over-runs of some national PAEs). Initially, The TAE established a limit on the total number of fishing days that could be fished in PNA members' EEZs. The scope of the VDS has been expanded and now includes an allowance for Tokelau working with PNA. The US purse seine fleet also came under the VDS during 2013. The developments of the VDS and CMM 2015-01 and its predecessors now mean that an effort cap for purse seine fishing has been adopted across the WCPO.
- The skipjack harvest strategy includes appropriate monitoring and assessment, as well as target and limit reference points, and current stock status provides evidence that the elements of the harvest strategy work together towards achieving stock management objectives.
- The "responsiveness" to the state of the stock is less obvious given the current status of the stock (i.e., $F_{2008-11}/F_{MSY}=0.61$, $SB_{2015}/SB_{MSY} = 2.56$) which has meant that effort reductions have not been required to date. However, the initiatives by the PNA to develop the VDS and the response of WCPFC in adopting updated CMMs for skipjack tuna indicate a level of responsiveness adequate to meet SG80 requirements. Importantly, the adoption of effort limits provides leverage to address the need for further strengthening of management when and if required through the implementation of harvest control rules.
- PNA (2016a), paragraphs 21 and 22, provides evidence that the PNA reviews the TAE annually, given changes in scientific advice on the effective effort level in 2010 (to which effort is capped) and changes in fleet structure. While the annual variations in TAE are small they do illustrate that PNA has the ability to respond to both scientific advice and fleet dynamics, and does so following annual review.

In addition, tools adopted by WCPFC include FAD closures; high seas closures; and a discard ban in purse seine fisheries. Given the above, the team concluded that the harvest strategy is responsive and the elements of the harvest strategy work together to achieve the stock management objectives, meeting SG80. The original PNA skipjack assessment (Banks et al. 2011) also scored the fishery as meeting the SG80 level, indicating that "the Commission responded to the change in the results of the skipjack assessment and the more cautionary tone of the scientific advice in 2010 by deciding to address the management of skipjack explicitly in the preparation of a CMM to replace CMM 2008-01 beyond 2011." Overall, the original score for PI 1.2.1 for the PNA fishery was 80. Other skipjack fisheries considered at the Hong Kong meeting (see Table 15) have considered that SG80 is not met for 1.2.1a and have awarded an overall score of 70 for PI 1.2.1, indicating that the PNA score should align with this score. The basis for this is predominantly that participants consider 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 via the Hong Kong harmonisation that for the WCPFC skipjack tuna fisheries, including those under the PNA's VDS, 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, hence it was concluded that a score of 70 is warranted for PI 1.2.1 and a condition is required. The rationales for this conclusion are contained in relevant fishery reports which can be found on the MSC website.

Further harmonisation discussions took place in October and November 2016 with other CABs involved in the Hong Kong meeting and which had undertaken the MSC assessment of other WCPO skipjack fisheries for which scoring issue 1.2.1a had been found to meet SG60 requirements but not SG80. Whilst the reassessment team considered that SG80 requirements were met by the PNA fishery, other CABs did not agree and indicated that there was insufficient new information to change the findings of the Hong Kong meeting. In keeping with MSC requirements for harmonisation, scoring issue 1.2.1a is scored as having met SG60 requirements but not SG80.

Appendix 6: Peer review reports

Peer Review Report 1

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	Yes	CAB Response
<p><u>Justification:</u></p> <p>Overall, the assessment team arrived at an appropriate conclusion in its assessment. The background is sufficient and the scores well supported by their rationales. It is a well-organized, articulated and comprehensive assessment. For all three principles, the PI scores are appropriate with only a small set of suggested edits.</p>		Noted, thank you.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	Yes	CAB Response
<p><u>Justification:</u></p> <p><i>Conditions 1 & 3 - PI 1.2.1 (skipjack & yellowfin):</i> The elements and timing of the milestones are well designed and should achieve closure of the conditions by the end of the re-assessment period.</p> <p><i>Conditions 2 & 4 - PI 1.2.2 (skipjack & yellowfin):</i> The elements and timing of the milestones are well designed and should achieve closure of the conditions by the end of the re-assessment period.</p> <p><i>Condition 5 – PI 2.3.2 (manta and devil rays):</i> The elements and timing of the milestones are well designed and should achieve closure of the condition by the end of the re-assessment period.</p>		Noted throughout, thank you.

If included:

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	Yes	CAB Response
<p><u>Justification:</u></p> <p><i>Conditions 1 & 3 - PI 1.2.1 (skipjack & yellowfin):</i> The CAPs are well thought out and designed to meet the requirements of the two conditions.</p> <p><i>Conditions 2 & 4 - PI 1.2.2 (skipjack & yellowfin):</i> The CAPs are well thought out and designed to meet the requirements of the two conditions.</p> <p><i>Condition 5 – PI 2.3.2 (manta and devil rays):</i> The CAPs are well thought out and designed to meet the requirements of the condition.</p>		Noted throughout, thank you.

Performance Indicator Review

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1 (skipjack)	Yes	Yes	NA	<p><i>Sl_a: The interpreted PRI is 20%SB_{F=0} as stipulated by the WCPFC, which is consistent with the MSC default (SA2.2.12). Recent biomass is well above this, ranging 48% - 56% of SB_{F=0}, depending upon model. The scoring rationale well supports SG100. However, in the reference point (RP) table, F_{MSY} is provided by association with Sl_a. This is more appropriately provided in relation to Sl_b.</i></p> <p><i>Sl_b: CR2 requires scoring of this SI in relation to B_{MSY}. Table 13 indicates that this is 1,626 kt or 23%SB_{F=0}. 50%SB_{F=0} is an interim target (page 40) of the harvest strategy, subject to review by 2019. This is good for the HCR as it is over twice the PRI RP but here, scoring is to be in relation to B_{MSY}. SB_{latest}/SB_{F=0} and SB_{recent}/SB_{F=0} are 2.56 and 2.31 (base case) respectively which should be provided in the RP table. The scoring text has much of this. Some edits which put the status and management RPs in context would be useful.</i></p> <p><i>PI scores 100 (agreed), consistent with the</i></p>	<p><i>Noted. This has been amended.</i></p> <p><i>Noted. Additions have been made.</i></p> <p><i>Noted, thank you.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				scores of the harmonized fisheries (Table 21).	
1.1.2 (skipjack)	NA	NA	NA	NA	Noted, thank you.
1.2.1 (skipjack)	Yes	Yes	Yes	<p><i>Sla: The responsiveness of the harvest strategy to the state of the stock is in question. It is the linkage amongst strategy components at the WCPFC level that appears to be the issue. Specifically, it is unclear how assessed fishing mortality on the total stock can/will respond to a limit on PNA purse seine fishing effort. Harmonization discussion amongst CABs on the scoring of this SI resulted in the 60 score, as per MSC policy (see General Comments below).</i></p> <p><i>No issues with the scoring of the other SIs.</i></p> <p><i>PI scores 70 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i></p>	Noted throughout, thank you.
1.2.2 (skipjack)	Yes	Yes	Yes	<p><i>No issues with the scoring of the other SIs.</i></p> <p><i>PI scores 60 (agreed). This is consistent with the scores of the harmonized fisheries (Table</i></p>	Noted, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				21).	
1.2.3 (skipjack)	Yes	Yes	NA	<p><i>S1b: It is not clear what the main indicators of stock abundance are. They appear to be tagging and fishery CPUE (maybe). Some edits would address this. Useful to add how many generations are being monitored.</i></p> <p><i>No issues with the scoring of the other SIs.</i></p> <p><i>PI scores 90 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i></p>	<p><i>Information has been added to the report to address this.</i></p> <p><i>Noted, thank you.</i></p>
1.2.4 (skipjack)	Yes	Yes	NA	<p><i>S1a and S1c: It is stated (S1a) that the assessment takes into account the major features of skipjack biology. A concern is that assessments are conducted about every 2-3 years, which is a significant period for such a fast growing species. Is this a recognized as a source of uncertainty by the management system (S1c)?</i></p> <p><i>No issues with the scoring of the other SIs.</i></p>	<p><i>Ideally there would be an annual assessment but this is not considered feasible. The assessment model accounts for several factors of the dynamics of the fish population. The model partitions the population into 5 spatial regions and 16 quarterly age-classes. Parameters for recruitment, growth, movement, natural mortality and sexual maturity are incorporated.</i></p> <p><i>Noted, thank you.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>PI scores 95 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i>	
1.1.1 (yellowfin)	Yes	Yes	NA	<p><i>Sl a: The interpreted PRI is 20%SB_{F=0} as stipulated by the WCPFC, which is consistent with the MSC default (SA2.2.12). Current biomass is well above this, ranging 34%-44% of SB_{F=0}, dependent on model. Given that the assessment was in 2014, the stochastic projections of Pilling et al (2014) support the 100 score. The two rows of the RP table appeared reversed.</i></p> <p><i>Sl b: As with skipjack, scoring of this SI is in relation to B_{MSY} which ranges 1.15 – 1.68 across four models. However, given the declining trend in biomass and increasing trend in F, the score of 80 is justified.</i></p> <p><i>PI scores 90 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i></p>	<p><i>Noted, thank you – we have changed the two rows around to properly reflect the PRI and TRP values.</i></p> <p><i>Noted, thank you.</i></p>
1.1.2 (yellowfin)	NA	NA	NA	NA	

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.1 (yellowfin)	Yes	Yes	Yes	<p><i>Sla: While the components of a harvest strategy are in place, there has been a lack of progress on some management measures. The non-purse seine fleet represents 40-50% of the total catch and the longline fleet has not yet agreed to effort limits. The effectiveness of these measures may be subject to similar issues as raised in PI 1.2.1 for skipjack. The 60 score is justified.</i></p> <p><i>No issues with the scoring of the other SIs.</i></p> <p><i>PI scores 70 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i></p>	Noted throughout, thank you.
1.2.2 (yellowfin)	Yes	Yes	Yes	<p><i>No issues with the scoring of the SIs.</i></p> <p><i>PI scores 60 (agreed). This is consistent with the scores of the harmonized fisheries (Table 21).</i></p>	Noted, thank you.
1.2.3 (yellowfin)	Yes	Yes	NA	<p><i>No issues with the scoring of the SIs.</i></p> <p><i>PI scores 90 (agreed). This is generally consistent with the scores of the harmonized fisheries (Table 22). The score of the Walker fishery (80) was due to Sla scoring 80, on the</i></p>	Noted throughout, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>basis that no fishery-independent indices of abundance are available. Here, the tagging data supports scoring of Sla at 100.</i>	
1.2.4 (yellowfin)	Yes	Yes	NA	<p><i>Slc As with skipjack, a concern is the frequency of stock assessment. The most recent assessment was conducted in 2014. As T_{GEN} is about 4 years ($2.5+1/0.7$), assessment frequency could be an issue. Is this a recognized as a source of uncertainty by the management system?</i></p> <p><i>No issues with the scoring of the other SlS.</i></p> <p><i>PI scores 95 (agreed). This is consistent with the scores of the harmonized fisheries (Table 22).</i></p>	<p><i>An updated assessment is in progress. The yellowfin tuna model also considers a number of factors in relation to the dynamics of the fish population. The model partitions the population into five spatial regions and 16 quarterly age classes. As for skipjack, parameters for recruitment, growth, movement, natural mortality and sexual maturity are incorporated.</i></p> <p><i>Noted, thank you.</i></p>
2.1.1	Maybe	Maybe	NA	<p><i>Each of the target species could be considered a main primary in their respective UoAs. This likely won't change the scoring but their categorization in P2 should be explained.</i></p>	<p><i>Noted, thank you.</i></p> <p><i>We agree that SA 3.1.3.1 (MSC 2014) requires that yellowfin tuna is considered as a P2 species in scoring UoA 1 (skipjack tuna), and that skipjack tuna is considered as a P2 species in scoring UoA 2 (yellowfin tuna); in</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				No issues with the scoring of the SIs. PI scores 100 (agreed). This is on the high side of other harmonized fisheries but all recognized a 80 or above score (Table 23).	both cases, these are now assessed as main primary species. Adding yellowfin tuna and skipjack tuna in as main primary species has not changed the scoring of PI 2.1.1 – 2.1.3.
2.1.2	Maybe	Maybe	NA	Each of the target species could be considered a main primary in their respective UoAs. This likely won't change the scoring but their categorization in P2 should be explained PI scores 100 (agreed). This is on the high side of other harmonized fisheries but there is a good rationale for this (Table 23).	Noted, thank you. Please see the comment on scoring yellowfin tuna and skipjack tuna as retained species in the response to PI 2.1.1.
2.1.3	Maybe	Maybe	NA	Each of the target species could be considered a main primary in their respective UoAs. This likely won't change the scoring but their categorization in P2 should be explained No issues with the scoring of the SIs. PI scores 100 (agreed). This is on the high side of other harmonized fisheries but all recognized a 80 or above score (Table 23).	Noted, thank you. Please see the comment on scoring yellowfin tuna and skipjack tuna as retained species in the response to PI 2.1.1.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.2.1	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 100 (agreed). This is on the high side of other harmonized fisheries but all recognized an 85 or above score (Table 23)	Noted, thank you.
2.2.2	Yes	No	NA	Sla: The score is indicated as both No (top bar) and 100 (text). A strategy requires monitoring, management response and measures. For the two minor species, there appears to be measures in place but it is not evident if these are due to a considered management response which includes their effectiveness, which would suggest an 80 score. If this is not the case, this should be added to the rationale and the 100 score confirmed. No issues with the scoring of the other SIs. PI scores 85 (agreed conditional on checking Sla). This is comparable to other harmonized fisheries (Table 23)	Noted, thank you. The text has been revised to better reflect the score given (i.e., the text has been modified, not the score). Noted, thank you.
2.2.3	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 90 (agreed). This is comparable to	Noted, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>other harmonized fisheries (Table 23)</i>	
2.3.1	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 85 (agreed). This is comparable to other harmonized fisheries (Table 23)	Noted, thank you.
2.3.2	Yes	Yes	Yes	SIb: the rationale to not score the mantas and rays at 80, in comparison to the other ETP species is comprehensive, supporting the condition. PI scores 75 (agreed). There a range of scores in other harmonized fisheries but these are justified by their circumstances (Table 23)	Noted throughout, thank you.
2.3.3	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 85 (agreed). There a range of scores in other harmonized fisheries but these are justified by their circumstances (Table 23)	Noted, thank you.
2.4.1	Yes	Yes	NA	No issues with the scoring of the SIs.	Noted, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>PI scores 100 (agreed). This is comparable to other harmonized fisheries (Table 23)</i>	
2.4.2	Yes	Yes	NA	No issues with the scoring of the SIs. <i>PI scores 100 (agreed). This is comparable to other harmonized fisheries (Table 23)</i>	Noted, thank you.
2.4.3	Yes	Yes	NA	No issues with the scoring of the SIs. <i>PI scores 100 (agreed). This is comparable to other harmonized fisheries (Table 23)</i>	Noted, thank you.
2.5.1	Yes	Yes	NA	No issues with the scoring of the SIs. <i>PI scores 100 (agreed). This is comparable to other harmonized fisheries (Table 23)</i>	Noted, thank you.
2.5.2	Yes	Yes	NA	No issues with the scoring of the SIs. <i>PI scores 90 (agreed). This is comparable to other harmonized fisheries (Table 23)</i>	Noted, thank you.
2.5.3	Yes	Yes	NA	No issues with the scoring of the SIs. <i>PI scores 100 (agreed). This is comparable to</i>	Noted, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>other harmonized fisheries (Table 23)</i>	
3.1.1	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 85 (agreed). This is comparable to other harmonized fisheries (Table 24)	Noted, thank you.
3.1.2	Yes	Yes	NA	No issues with the scoring of the SIs. PI scores 85 (agreed). This is low compared to other harmonized fisheries although the score is well justified (Table 24)	Noted, thank you.
3.1.3	Yes	Yes	NA	The scoring of the sole SI correctly considers the broader policy context of the PNAFTF i.e. the WCPFC, with a recommendation made to establish precautionary policies both within the PNA and the individual parties. Comment on this recommendation is provided below. PI scores 90 (agreed). This is comparable to other harmonized fisheries (Table 24)	Noted throughout, thank you.
3.2.1	Yes	Yes	NA	The scoring of the sole SI would benefit explanation of how the PNA effort limits link to those of the WCPFC and ultimately to the	We agree this needed clarity and have strengthened the scoring rationale.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>stock assessment. There appears to be some process but it is open to interpretation.</i> <i>PI scores 80 (agreed). This is comparable to other harmonized fisheries (Table 24)</i>	<i>Noted, thank you.</i>
3.2.2	Yes	Yes	NA	<i>No issues with the scoring of the SIs.</i> <i>PI scores 85 (agreed). This is comparable to other harmonized fisheries (Table 24)</i>	<i>Noted, thank you.</i>
3.2.3	Yes	Yes	NA	<i>No issues with the scoring of the SIs.</i> <i>PI scores 85 (agreed). This is comparable to other harmonized fisheries (Table 24)</i>	<i>Noted, thank you.</i>
3.2.4	Yes	Yes	NA	<i>No issues with the scoring of the SIs.</i> <i>PI scores 90 (agreed). This is higher than other harmonized fisheries but is justified by the higher scoring of S1a in this assessment (Table 24)</i>	<i>Noted, thank you.</i>

General Comments

The report provides substantial information to support the scoring of the two UoAs. The scoring rationales are particularly complete. A very useful feature of the report is inclusion in the text of MSC interpretations pertinent to the issue at hand. Notwithstanding this, the principle one background is light in some areas (e.g. discussion on abundance indicators, sampling design etc). Also, while the assessment sections note the analyses of uncertainties, it is not clearly stated what these are considered to be. Perhaps this information is in the initial assessment. If so, this should be referenced. On the other hand, the discussion on the harvest strategy and control rule is relatively complete except that it is unclear how PNA effort limits link to these (if any) at the stock (WCPFC) level. Much of the principle two discussion on management and information is in the scoring tables, rather than the background section, similar to Principle one. Again, if this information is more completely provided in the initial assessment, this should be referenced in the background section. There are only a few issues with the background and scoring on principle 3 (the scoring rationale text is particularly informative). Again, it was not obvious how the PNA effort limits administratively link back to those of the WCPFC. Some clarity on this would be useful. Overall, the report is well written and the scoring well justified. [Assessment Team response](#): Specific responses to the comments against the three Principles are provided below. The Assessment team does note, though, that this is a reassessment of the fishery, and readers are encouraged to review the original certification report for the fishery for additional details. There is also a wide range of material available on the fishery, the stocks, and the management approach, which have been referenced in the report; readers are also encouraged to review these documents if even more detail is required.

Principle 1

In Table 2 on page 13, condition 4 has the PI incorrectly indicated as 1.2.3 (should be 1.2.2). A similar edit is required in section 6.3.

[Assessment Team response](#): Thank you – corrections have been made.

The recommendation in Table 3 refers to PI 3.1.3, the scoring of which correctly relates to the broader policy context of the PNAFTF i.e. the WCPFC, and notes that, specifically in the PNA, long-term objectives that reference the precautionary approach are explicitly adopted. It would be useful to add to the recommendation the text that is in the scoring rationale which states that these objectives should acknowledge the link of objectives between the WCPFC, the PNA and the individual Parties.

[Assessment Team response](#): Noted, thank you – this change has been made.

On page 25, it is noted that the recent UoC skipjack catch has been 51% of the PNA catch (52% for yellowfin). Given that the UoCs are of the PNA purse seine fishery, presumably this percent is for the unassociated sets. If so, clarification text would be useful.

[Assessment Team response](#): Noted, thank you. A change has been made to the report to reflect that remainder of the PNA catch is from non-UoC, FAD-associated sets.

On pages 28- 29 on skipjack biology, it would be useful to include an estimate of generation time (age of 50% maturity +1/natural mortality) as this is a good metric to judge adequacy of assessment frequency and data set length. The same is true for yellowfin.

[Assessment Team response](#): Noted, thanks. Information on the generation time has been added.

On page 31, it is stated that the SPC considers that the reporting of transit days “does not have a large effect as the penalties on these fisheries in the model are low, i.e. the relationship between fishing mortality and effort for purse-seine fisheries is not overly influential in the model”. This implies that the relationship between fishing mortality and purse seine effort is weak. Is this correct? If so, it would be useful to add comment on whether or not the management system recognizes this as an issue.

Assessment Team response: Noted, thanks - further explanation has been added.

Sections 3.5.1.3 (skipjack) and 3.5.2.3 (yellowfin) provide background on stock status. While the Kobe plots indicate current status, it would be useful to provide figures on the temporal trends of key indicators (recruitment, spawning stock biomass, and fishing mortality) of the two species. These are available in the assessment reports.

Assessment Team response: It is beyond the scope of this report to repeat all information provided in the stock assessments. Nevertheless, the assessments are available on the WCPFC website, and we encourage interested readers to review them for further information.

On page 32, it is noted that the tagging data are a key input to the skipjack assessment. The same is true of the yellowfin assessment (page 47). Presumably, these data are important in informing age-specific estimates of fishing and natural mortality in both models. The importance of the catch and effort data to these models is less clear. In the case of skipjack, there is no mention of catch rate standardization to provide a fishery – dependent indices of abundance, which is the case for yellowfin (pages 45-46). It is important for the background sections to be clear on what the primary indices of abundance in the two assessments are. It is also helpful to note these in relation to how many generations are monitored. In long-lived species, this is a very useful indicator and perhaps less so in this situation but still useful to report.

Assessment Team response: Noted, thank you. Additional background information has been provided.

A considerable amount of information on reference points for both species is provided in sections 3.5.1 (skipjack) and 3.5.2 (yellowfin). While CR 2 no longer requires scoring of reference points, it is still useful to have a section in the background on these. This would explicitly state those used to score stock status as opposed to those used in management, as well as their derivation. If these are in the initial report, this should be referenced.

Assessment Team response: A wide range values of potential reference points have been examined in the assessments and have been an important input to the management objectives process to develop the WCPFC harvest strategy. As indicated by the conditions raised, this is still a work in progress. Tables 12, 13 and 14 provide a number of these values.

Section 3.5.1.5 provides a comprehensive discussion on the harvest strategy and control rules in the skipjack fishery (3.5.2.4 is a similar section for yellowfin) with further detail in section 4 and a client submission (Appendix 5). A credible case is made that the current harvest strategy is responsive to scientific advice on stock status through multiple adjustments to management initiatives since at least 2010 (e.g. establishment of B_{LIM} in 2012 and F_{TARGET} and B_{TARGET} in 2015). Further, the WCPFC has committed to the development of full harvest strategies for its tuna resources, with implementation by 2018 and beyond. One of the primary management actions to control harvesting in the PNA area has been the imposition of effort limits (TAE) on PNA purse seiners through establishment of the Vessel Day Scheme (VDS) in 2005 (operational in 2006). The TAE is determined in advance for a two-year period, based upon available scientific, economic and management information and advice. Since 2011, this effort limit has been fixed at the 2010 level, confirmed most recently by the findings of the 2014 stock assessment. It is acknowledged that the VDS is not without issues (page 40). It is designed to limit the aggregate purse seine effort on three tuna species, not just skipjack. Effort creep can occur in which a day of fishing can have different implications for fishing mortality over time (page 40). Also, the TAEs only apply to the PNA purse seine fleet which averaged 64% of the total WCPFC skipjack catch during 2010 – 2014. During the same period, total stock adult skipjack fishing mortality (McKechnie et al, 2016) declined while the TAEs have been relatively constant. Thus, it is legitimate to question how responsive overall harvest pressure on the total stock to the PNA TAEs can be. It is acknowledged that, given current stock health, the major function of the PNA effort limits have been to improve economic returns rather than address the sustainability of skipjack tuna (page 39) and that the responsiveness

to stock status is less obvious, which is perhaps why different assessment teams have scored PI 1.2.1 differently (section 4.1). PI 1.2.1 scores the linkage amongst management components rather than considering each of these. In contrast, PI 1.2.2 calls for a well-defined harvest control rule at SG80 which is a separate issue. In other words, PI 1.2.1 evaluates if the management system considers the scientific advice, set management actions in response to this and ensures that these actions are followed, all at the stock level. It is noteworthy that after two CAB harmonization exercises (April and Oct – Nov 2016) that disagreement amongst the CAB teams remains, with the current team following MSC policy and scoring PI 1.2.1 consistent with those of the other teams, notwithstanding its disagreement with this. A case is made in Appendix 5 to continue inter-team discussion, bringing to this the required expertise and new information as available, which this reviewer encourages.

Assessment Team response: Thank you – we agree with the reviewer’s comments.

On page 38, there was an alternate view of stock status based on the range of uncertainty from the sensitivity analysis. It is not clear in the report how this concern was addressed by the management system.

Assessment Team response: Noted, thank you. The alternative points of view are presented in the report of the Scientific Committee to the Commission for its consideration.

Principle 2

Page 53 provides an important explanation on how free school sets are determined. Appendix 3 describes issues on the determination of FAD-free and FAD sets by the OPAGAC. It is not clear what the assessment team’s response to these concerns was. This should be commented on in the report.

Assessment Team response: A brief response is provided on the OPAGAC submission during the site visit at the end of the meeting note (Appendix 3).

Table 15 indicates primary, secondary and ETP species considered in the assessment. It’s not clear how the two target species are scored when considered a non-target species (in the skipjack UoA, yellowfin would be a principle 2 species). This requires clarification with potential changes to the scoring tables.

Assessment Team response: Thank you – the scoring tables for PI 2.1.1 – 2.1.3 have been modified to reflect that yellowfin tuna is considered as a main primary species in UoA 1, and skipjack tuna is considered as a main primary species in UoA 2. There is no change to scoring.

The sections on the primary and secondary species primarily address their stock status with little mention of their management and information, which is provided in the scoring rationales. This approach to the provision of the information should be indicated in the background sections.

Assessment Team response: Thank you. For brevity, and because it is required to provide a clear rationale in the scoring texts, some information is not repeated. Readers are encouraged to read the report in detail to gain a full understanding of the fishery.

In Table 17 (page 59), the different shading needs to be explained.

Assessment Team response: Noted, thank you – a key has now been provided.

The scoring of PI 2.3.1 (S1a) calls for evaluating the cumulative impacts on ETPs species for which national and/or international requirements have set limits. It should be clearly stated in section 3.6.2 why there are no such ETP species in this assessment.

Assessment Team response: The Assessment Team looked closely and determined simply that there are no national or international requirements that have set limits for ETP species for these ETP stocks. Therefore, S1a is not scored. This is now detailed in Section 3.6.2.

Principle 3

The link on page 72 needs to be updated.

[Assessment Team response](#): Thank you – this has now updated.

Section 3.7.6 on the VDS is one of the most important under principle 3. It would be useful to include information (table and/or figure) which illustrates the change in the annual TAEs (however small) versus the observed effort days since the program's initiation. Also, it is unclear how effort limits at the WCPFC level relate to the PNA limits. The latter are no doubt lower than the former, which could be added to this information. Figure 5 and tables 7 and 9 may provide some of this information but consolidation in this section would be informative. The stock status sections currently do not provide temporal trends in fishing mortality but it would be interesting to compare the respective effort and fishing mortality trends.

[Assessment Team response](#): Noted, thank you. The cross reference and linkages on the discussion relating to the VDS has been more clearly described in both the P1 and P3 text.

Appendix 4 calls for inclusion of text to describe the link between the VDS TAE and the scientific advice. This is provided in section 3.5.1.5. This section should also be referenced in section 3.7.6.

[Assessment Team response](#): Noted, thank you. A link to Section 3.5.1.5 has been added in Section 3.7.6, but Appendix 4 is a client submission and cannot be edited by the Assessment Team.

How is a trip's catch verified (section 3.7.7)? Are the data collected by the observers assumed to report 100% of the catch or is there dockside verification and if so, how complete is this? There is mention of this in the scoring rationale of PI 3.2.3.

[Assessment Team response](#): The catch is verified at different levels – skippers' logs (which are captured in the electronic data system), observer information / reports, and through monitoring of catches discharged in designated ports – this provides a progressive filter and cross checks on catches and declarations.

Peer Review Report 2

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	Yes	CAB Response
<p><u>Justification:</u></p> <p>This assessment report presents sufficient information to justify the conclusions that have been drawn. The scoring is appropriate (apart from some minor issues that would not affect the overall assessment outcome), and re-certification of the fishery is justified.</p>		Noted, thank you.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	Yes	CAB Response
<p><u>Justification:</u></p> <p>The conditions are written in accordance with the FCR and set out appropriate milestones for progress.</p> <p>My only (pedantic) concern is that it is not appropriate to have one condition that applies to two UoAs (Condition 5) and that it should be duplicated, so that there are separate conditions for each UoA about ETP management.</p>		<p>Noted, thank you.</p> <p>In response to this comment, a change has been made such that Condition 5 now only applies to UoA 1, and a new Condition 6 has been created which applies only to UoA 2.</p>

If included:

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	Yes	CAB Response
<p><u>Justification:</u></p> <p>The client action plan is compatible with the milestones and the requirements of the relevant PIs.</p>		Noted, thank you.

Table A For reports using one of the default assessment trees:

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
<i>UoA 1: Skipjack Tuna</i>					
1.1.1	No	Yes	NA	<p><i>The scoring is appropriate and harmonised with other relevant assessments.</i></p> <p><i>While the scoring is justified, it would be appropriate to explain the data shown in Figure 13 of the report which shows that F is presently much closer to F_{msy} than the stock assessment outputs (Table 13) indicate.</i></p>	<p><i>Noted, thank you.</i></p> <p><i>The fishing mortality and spawning biomass values in Table 13 are consistent with the stock not being overfished or subject to overfishing. The MSY value in Figure 13 is also consistent with the assessment outcomes. It is acknowledged that current catches are approaching MSY and that the spawning biomass is close to the target level. The outcomes indicate that a large increase in fishing mortality would result in a relatively small increase in catch.</i></p> <p><i>The ration of SB_{MSY} and $SB_{F=0}$ is not presented as part of the stock status relative to reference points.</i></p> <p><i>A range of potential reference points have been under consideration for the</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>Stock status relative to reference points</i></p> <p><i>There seems to be some confusion with respect to the reference points. The figures stated don't seem to correspond to the data shown in Table 13. SBmsy is reported in Table 13 at 1,626,000t, which is 22.5% of SB_{F=0}. Perhaps these figures need to be double-checked.</i></p> <p><i>The new CR does not test the appropriateness of reference points. I have to raise a query about why Fmsy is considered to be the level of F that is likely to be compatible with a biomass of 28% of unfished biomass; and yet the value of Bmsy is reported at 50% of unfished biomass here (and 22.5% in Table 13). There is something here that doesn't make a great deal of sense to me, but it doesn't affect the scoring. Perhaps this could be clarified elsewhere in the document.</i></p> <p><i>I wonder if during the scoring the value of the target reference point (TRP) has been confused with the MSY values for biomass and fishing mortality? This PI</i></p>	<p><i>fishery. The stock assessment presents the latest values for a number of these and the results are presented in the report. The value of B_{MSY} is not reported at 50% of unfished biomass</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>addresses PRI and MSY rather than LRP and TRP.</i>	
1.1.2	NA	NA	NA	<i>The stock is not reduced to the point where a rebuilding strategy is required, so it is not necessary to score this PI.</i>	Noted, thank you.
1.2.1	No	No	Yes	<p><i>The scoring of SIa and the corresponding condition are appropriate for the fishery.</i></p> <p><i>The two negative comments relate to SI(f). The only justification presented is that CMM 2015-01 states that all catches should be retained and that discards should be reported. The existence of a regulation does not, by itself, demonstrate that discarding is not happening.</i></p> <p><i>Given that there is 100% observer coverage in the PNA fleet, there should be information available to demonstrate compliance with these requirements. Such information would justify the scoring approach, but is not presented in</i></p>	<p><i>Noted, thank you.</i></p> <p><i>The report indicates that discarded catches of skipjack are estimated to be minor and are ignored in the stock assessment (Rice et al. 2014). This text has been added to the scoring justification.</i></p> <p><i>Data provided to the assessment team indicates discards of skipjack tuna of approximately 2% over the period 2011 to 2015. Although any non-compliance is undesirable, this demonstrates a satisfactory level of compliance, and it is noted that such discarding is estimated</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>the report and should be. The condition and associated action plan are both appropriate for the issues identified.</i>	<i>to be minor and are ignored in the stock assessment (Rice et al. 2014)</i>
1.2.2	Yes	Yes	Yes	<i>The scoring is well reasoned and appropriate. For SI(a), and SI(c) the scoring rationale carefully considers all relevant MSC CR criteria to justify the score of 60. The condition and associated action plan are both appropriate for the issues identified.</i>	<i>Noted, thank you.</i>
1.2.3	No	Yes	NA	<i>The scoring is well reasoned and appropriate. The only information that is missing here is any reference to the level of IUU fishing in SI (c). IUU fishing is mentioned in section 3.7.9 of the report. The level of IUU fishing of skipjack tuna is reported to be around 5.1% of the total skipjack tuna catch. This is a fairly significant</i>	<i>Noted, thank you. The report from which these IUU figures come (MRAG 2016) indicates that much of this is driven by misreporting and non-compliance with licence conditions but that this "may result in little unaccounted for catch". The stock assessment</i>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>fishery removal, and some consideration should be given to this here for completeness.</i>	<i>indicates that the purse seine catch history used in the assessment has been corrected for the over-reporting of skipjack and under-reporting of yellowfin and bigeye on logsheets, addressing an important component of the reported IUU fishing.</i>
1.2.4	No	No	NA	<p><i>The rationale and scoring for SI(a) and SI(b) is well reasoned and appropriate.</i></p> <p><i>The rationale presented for SI(c) (uncertainty in the assessment) does not explain the uncertainties in the assessment and how they are addressed.</i></p> <p><i>For instance, in the Principle 3 narrative text, it is reported that there is a degree of IUU fishing in the UoA, but no indication is given as to how this source of uncertainty is addressed in the model.</i></p> <p><i>Other uncertainties, such as inter-annual variations in recruitment, could affect the fishery and again there is no indication in the rationale whether (or</i></p>	<p><i>Noted, thank you.</i></p> <p><i>The uncertainty in the assessment is discussed in the body of the report and detailed in the stock assessment (McKechnie et al., 2016). However, further mention of the treatment of uncertainty has been added to the scoring table.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>how) such variation is considered.</i></p> <p><i>It is possible that these uncertainties are considered in the "grid of model runs". If so, this should be explicitly mentioned here.</i></p>	
<i>UoA2: Yellowfin Tuna</i>					
1.1.1	Yes	Yes	NA	<p><i>The scoring is justified by the evidence presented and is harmonious with other assessments.</i></p> <p><i>The scoring comments for SIb note that there is a degree of uncertainty about stock status relative to Bmsy. Given this uncertainty and the comments in SIa about projections made in 2014 that suggested the stock was unlikely to fall below Bmsy, it would seem prudent to make a strong recommendation to the client fishery that the status of this species' stock relative to Bmsy is examined in the next stock assessment as a matter of some urgency.</i></p>	<p><i>Noted, thank you.</i></p> <p><i>SPC routinely assesses the WCPFC tuna stocks. There have been four yellowfin tuna assessments since 2007. An updated yellowfin assessment is in progress for discussion in 2017. In years when an updated assessment is not available a number of indicators from the fishery is examined by the SC.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>Stock status relative to Reference Points</i> <i>Unlike UoA 1, the correct Bmsy value has been taken from the stock assessment (Table 14); however the PRI and MSY values are the wrong way round, and this should be corrected.</i>	<i>Noted, thank you – this has now been corrected.</i>
1.1.2	NA	NA	NA	<i>The stock is not reduced to the point where a rebuilding strategy is required, so it is not necessary to score this PI.</i>	<i>Noted, thank you.</i>
1.2.1	No	No	Yes	<i>The scoring of Sla and the corresponding condition are appropriate for the fishery.</i> <i>The two negative comments relate to SI(f). The only justification presented is that CMM 2015-01 states that all catches should be retained and that discards should be reported. The existence of a regulation does not, by itself, demonstrate that discarding is not happening.</i>	<i>Noted, thank you.</i> <i>Data provided to the assessment team indicates discards of yellowfin tuna of approximately 1.4% over the period 2011 to 2015. Although any non-compliance is undesirable, this demonstrates a satisfactory level of compliance, and it is noted that such discarding is estimated to be minor and are ignored in the stock assessment (Rice et al. 2014)</i>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>Given that there is 100% observer coverage in the PNA fleet, there should be information available to demonstrate compliance with these requirements. Such information would justify the scoring approach, but is not presented in the report and should be.</i></p> <p><i>The condition and associated action plan are both appropriate for the issues identified.</i></p>	
1.2.2	Yes	Yes	Yes	<p><i>The scoring is well reasoned and appropriate.</i></p> <p><i>For SI(a), and SI(c) the scoring rationale carefully considers all relevant MSC CR criteria to justify the score of 60.</i></p> <p><i>The proposed condition will address concerns that I had about the HS & HCRs responding to the status of the skipjack stock while ignoring the status of the yellowfin stock. The condition and associated action plan are both appropriate for the issues identified.</i></p>	Noted throughout, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.3	No	No	NA	<p><i>The scoring is well reasoned and appropriate for SI(a) and (b).</i></p> <p><i>The information that is missing here is any reference to the level of IUU fishing in SI (c). IUU fishing is mentioned in section 3.7.9 of the report. The level of IUU fishing of yellowfin tuna is reported to be around 15.8% of the total yellowfin tuna catch. This is a significant fishery removal, and some consideration should be given to this here and whether the SG80 level is met in the light of this level of IUU fishing on this stock.</i></p>	<p><i>Noted, thank you.</i></p> <p><i>As indicated for skipjack above, the 2017 pre-assessment workshop recognizes the uncertainty in catch indicated by the MRAG report and has recommended an examination of this in upcoming assessments for bigeye and yellowfin tuna (Pilling & Brouer 2017).</i></p>
1.2.4	No	No	NA	<p><i>The rationale and scoring for SI(a) and SI(b) is well reasoned and appropriate.</i></p> <p><i>The rationale presented for SI(c) (uncertainty in the assessment) does not explain the uncertainties in the assessment and how they are addressed.</i></p> <p><i>For instance, in the Principle 3 narrative text, it is reported that there is a degree of IUU fishing in the UoA, but no</i></p>	<p><i>Noted, thank you.</i></p> <p><i>The uncertainty in the assessment is discussed in the body of the report and detailed in the stock assessment (Davies et al., 2014). However, further mention of the treatment of uncertainty has been added to the scoring table.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>indication is given as to how this source of uncertainty is addressed in the model.</i></p> <p><i>Other uncertainties, such as inter-annual variations in recruitment, could affect the fishery and again there is no indication in the rationale whether (or how) such variation is considered.</i></p> <p><i>It is possible that these uncertainties are considered in the "grid of model runs". If so, this should be explicitly mentioned here.</i></p>	
<i>Both UoAs assessed together</i>					
2.1.1	Yes	Yes	NA	<p><i>The scoring is justified and appropriate.</i></p> <p><i>It would be helpful to explain how the management tools in place for bigeye tuna are implemented in the UoA area to support the conclusion that this is a primary species (presumably this is through the WCPFC?).</i></p>	<p><i>Noted, thank you.</i></p> <p><i>In Section 3.6.1, the report states the MSC requirements for designating a species as a primary species (ie., where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points). In Section 3.6.1.3, the report then</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					<i>highlights that bigeye tuna is managed and assessed against reference points. This appears to provide an adequate rationale for identifying bigeye tuna as a primary species. No changes have been made to the report.</i>
2.1.2	Yes	Yes	NA	<i>The scoring is well justified and appropriate.</i> <i>The robustness of the scoring here could be improved by explicit reference to the MSC definition of a "strategy" (Table SA8 of CRv2.0).</i>	Noted, thank you. Noted, thank you – reference to Table SA8 has now been included in the scoring rationale.
2.1.3	Yes	Yesq	NA	<i>The scoring is well justified and appropriate.</i>	Noted, thank you.
2.2.1	Yes	Yes	NA	<i>The scoring is well justified and appropriate.</i>	Noted, thank you.
2.2.2	No	No	NA	<i>I am not entirely convinced that the approach to scoring SI(d) relating to shark finning is appropriate.</i>	Noted, thank you. The Assessment Team disagrees with the Peer Reviewer's interpretation of the MSC

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>The team refer to the MSC interpretaions long on this issue. A sentence is missing from quote of what the MSC have said:-</i></p> <p><i>“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.”</i></p> <p><i>It would appear from the report that the actual number of instances of shark finning was 14 in 2015 (down from 191 in 2013); and that in 2015 silky sharks (retention of which is an offence) made up 96.9% of the instances of finning and retention of sharks (Table 16). Silky shark are an ETP species.</i></p> <p><i>Whilst it is clear that the client fishery and the management organisation are taking actions to address this issue it is</i></p>	<p><i>interpretations log, here.</i></p> <p><i>Essentially, one of the key elements of the PNA management system is the implementaton of a robust and all but comprehensive observer and dockside monitoring programe. As the MSC Interpretation notes, “Fisheries should not be perversely penalised for example, for putting in place very good surveillance and enfocement system that are providng effective and still detecting and resolving the odd rare case.”</i></p> <p><i>In this case, the PNAFTF is extrmely wellmontioered and the number of sharks in question represents a tiny proportion of the total catch. Any cases of finning are then being dealt with through the enforcement and compliance system.</i></p> <p><i>We feel that penalising the fishery for the small numebr of finning cases would be perverse, and so continue to contend that 80 is the aporprate score for this SI.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>equally clear that shark finning is taking place (albeit at a very low level).</i></p> <p><i>It is therefore hard to justify the SG80 score ("It is highly likely that shark finning is not taking place") when clearly shark finning is taking place at a low level, but one which is higher than the MSC interpretation suggests is compatible with the "highly likely" level.</i></p> <p><i>A score of 60 would seem to be better aligned with the MSC interpretation of shark finning, while still remaining a pragmatic response to a fishery that is clearly making great progress to address this issue.</i></p> <p><i>The irony here is of course that if the 14 sharks that were finned in 2015 had been retained and landed whole, a score of 100 could be awarded and the sharks would be no less dead. I fear that the intent of this PI may have been lost somewhere in its interpretation. (Naturally it would be inappropriate for the CAB to respond to this observation!).</i></p>	<p><i>Indeed.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>(A minor pedantic note here – since neither blue marlin and black marlin are sharks, the scoring calculation table is in error. This is not the team's fault; it's a fundamental problem with the PI that is simply highlighted by this table; perhaps something for the MSC rather than the team to worry about).</i>	<i>Noted, thank you. We agree that the table was not correctly completed, and an edit has been made to show that blue marlin and black marlin are scored N/A for shark finning. No change to the overall score of the PI was made.</i>
2.2.3	Yes	Yes	NA	<i>The scoring is well justified and appropriate.</i>	<i>Noted, thank you.</i>
2.3.1	Yes	Yes	NA	<i>The scoring is well justified and appropriate.</i>	<i>Noted, thank you.</i>
2.3.2	Yes	Yes	Yes	<i>The scoring is well justified and appropriate.</i> <i>The condition and associated action plan are both appropriate to address the issues identified with respect to having a strategy in place for ETP species.</i> <i>I would suggest, however, that the team consider whether it is appropriate under</i>	<i>Noted, thank you.</i> <i>Noted, thank you. In response to this comment, Condition 5 has now been made specific to UoA 1, and a new</i>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<i>FCR v2.0 to have one condition spanning two UoAs, or whether there should be separate (identical) conditions for each UoA.</i>	<i>Condition 6 has been created, replicating Condition 5 but applying to UoA 2.</i>
2.3.3	Yes	Yes	NA	<i>The scoring is well justified and appropriate.</i>	<i>Noted, thank you.</i>
2.4.1	No	Yes	NA	<p><i>It would be appropriate to mention here the depth/height of the fishing gear as well as the depth of water where most fishing takes place to fully explain why interactions with benthic habitats.</i></p> <p><i>The justification for interactions with pelagic habitats is badly worded (SI(a)). It states that "There is no evidence that there is any potential for significant interaction with pelagic habitats." Strictly speaking there is a great deal of interaction with pelagic habitats (i.e. it is significant); however this does not cause "serious or irreversible harm".</i></p>	<p><i>Noted, thank you. The depth of the gear is now listed as being no more than 250m, in comparison to a water depth in the fishing area that is typically in excess of 2,000m.</i></p> <p><i>Noted, thank you – a revision to the wording has been made to reflect that there is no potential for significant adverse interaction with pelagic habitats.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.2	No	No	NA	<p><i>To fully justify the score of 100 at SI(a) it is necessary to identify that the "managed area" (sensu SA3.13.5) determines the scope of the assessment with regard to MSC and non-MSC UoAs. This distinction is important because it is not impossible that other métiers within territorial and archipelagic waters could impact habitats.</i></p> <p><i>To fully justify the score of 80 at SI(b) it would be necessary to show that there is a level of awareness of the location of VMEs (whether pelagic or benthic) within the managed area. If there aren't any VMEs, then it would be appropriate to report this.</i></p>	<p><i>Noted, thank you. The managed area is the EEZs of the PNA + Tokelau (i.e., not including the archipelagic waters and areas within 12 nm), but it is not possible to state definitively that there is a strategy in place for all fisheries that might occur in the area. As such, the score for SIa is now dropped to 80, and the overall score for PI2,4,2 is dropped to 95.</i></p> <p><i>We note that we stated we are not aware of any relevant protection measures afforded to VMEs by other MSC UoAs. No change has been made to the report.</i></p>
2.4.3	No	No	NA	<p><i>While common sense tells us that this gear is unlikely to have any impact on pelagic habitats and that interactions with benthic habitats are exceedingly rare, it does not follow that a score of 100 is consistent with the PI requirements. A score of 80 seems more appropriate.</i></p> <p><i>SI(a) requires that "The distribution of all</i></p>	<p><i>Noted, thank you. The Assessment Team believes that scoring the fishery at 100 is consistent with the scoring of other pelagic fisheries for which there is an extremely low possibility of the gear coming in to contact with semersal habitats.</i></p> <p><i>Nevertheless, the point is taken that the</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>habitats is known over their range...". The justification indicates that the distribution of habitats is not actually known. A score of 80 is appropriate, but not 100.</i></p> <p><i>SI(b) Asks that "The physical impacts of the gear on all habitats have been quantified fully." It is clear from the justification that the impacts of the gear have not been quantified on any habitats, let alone all habitats. This is unsurprising, it would be a pointless piece of research, but nevertheless SG100 is not met.</i></p> <p><i>SI(c) at SG100 asks that "Changes in habitat distributions over time are measured." Given that SI(a) indicates that their distribution is not known, it is hard to see how changes in distributions can be measured. SG80 is justified, but not SG100.</i></p>	<p><i>data are not available to score the fishery at 100. All SIs are therefore rescored at 80.</i></p>
2.5.1	Yes	Yes	NA	<p><i>The rationale would be strengthened by an explicit explanation why yellowfin tuna is not considered to be a "key</i></p>	<p><i>Noted, thank you. We point to the work undertaken by Allain et al. (2007), that is referenced in the report, that indicates</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>ecosystem element" (i.e. because modelling shows that it is not).</i></p> <p><i>The scoring at SG100 is nevertheless justified and appropriate.</i></p>	<p><i>that skipjack tuna occupies a central position in the system as a key predator and prey species. Yellowfin tuna simply doesn't occupy that central position. No changes have been made to the report.</i></p>
2.5.2	Yes	Yes	NA	<p><i>A thorough approach to scoring these two different elements. The scoring is justified & appropriate.</i></p>	<p><i>Noted, thank you.</i></p>
2.5.3	Yes	Yes	NA	<p><i>The scoring is justified and appropriate.</i></p>	<p><i>Noted, thank you.</i></p>
3.1.1	Yes	No	NA	<p><i>The scoring of SI(a) is not justified adequately. The crux of this justification is the second paragraph which examines how the legal system delivers management outcomes consistent with MSC Principles 1 and 2 (my emphasis).</i></p> <p><i>Although it is clear that the legal system is aligned to Principle 1 outcomes, there is no evidence presented here to show how the legal system delivers Principle 2 outcomes.</i></p>	<p><i>Noted, thank you. Text has been added to the scoring rationale outlining and justifying the scores related to P2</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>It is clear from the Principle 2 narrative text and justifications that there are some legal mechanisms in place that deliver Principle 2 outcomes; and although it is not mentioned in Principle 2, UNCLOS and the Straddling Stocks Agreement are relevant here; likewise WCPFC may have CMMs in place relating to Principle 2.</i></p> <p><i>In order to justify a score of SG60 or more, the justification must demonstrate how the legal system effectively delivers Principle 2 management outcomes.</i></p> <p><i>The scoring of SI(b) and (c) is appropriate and justified.</i></p>	
3.1.2	Yes	Yes	NA	<i>The scoring is appropriate and justified.</i>	<i>Noted, thank you.</i>
3.1.3	Yes	No	NA	<p><i>The scoring justification presented evidence that seems to indicate that the WCPFC has established clear long-term objectives and consistent with the precautionary approach, and that by and large national legislation within the PNA</i></p>	<p><i>Noted, thank you. We agree with the reviewer and so a score for this PI has now been reduced to 80. The score overall for Principle 3 has also been adjusted to 84.2.</i></p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				<p><i>membership does the same.</i></p> <p><i>The difference between SG80 and SG100 is not whether clear long term objectives are <u>required</u> by management policy (my emphasis).</i></p> <p><i>No information is presented here or in the narrative text to demonstrate that any management policies are in place at any level which require long term objectives to be established.</i></p> <p><i>A score of 80 would seem more appropriate here.</i></p>	
3.2.1	Yes	Yes	NA	<p><i>The scoring is appropriate and justified, notwithstanding the species-specific comments about harvest strategy and harvest control rules & tools above.</i></p>	Noted, thank you.
3.2.2	Yes	Yes	NA	<p><i>The scoring is appropriate & justified.</i></p>	Noted, thank you.
3.2.3	Yes	Yes	NA	<p><i>The scoring is appropriate & justified.</i></p>	Noted, thank you.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.4	Yes	Yes	NA	<i>The scoring is appropriate & justified.</i>	<i>Noted, thank you.</i>

Overall comments

- This is a thorough assessment, and the outcome is justified.

[Assessment Team Response:](#) Noted, thank you.

- The assessment report is a little bit jumbled. All of the relevant information is in here, but not necessarily in the right order. This makes the report harder to read & understand than it should be. For instance:-
 - There are several references to Tokelau as a place of some significance before it becomes clear that Tokelau has a different relationship with the PNA to the other Pacific islands.

[Assessment Team Response:](#) Noted, thank you. It has now been highlighted earlier in the report that Tokelau is not a member of the PNA, but is a signatory to the PNA vessel day scheme (and that the two PNAFTF UoAs include fishing within the Tokelau EEZ).

- In many instances acronyms are introduced with no explanation of what they mean, and this only becomes apparent later.

[Assessment Team Response:](#) We have tried to identify as many instances of this as possible, but it is possible that some have slipped through. In the absence of specific details we can do no more.

- In the stock assessment sections, some information in tables is reproduced with no explanation in the text.

[Assessment Team Response:](#) We have tried to cover as much detail as possible and necessary whilst keeping the report to a sensible length. In the absence of specific details of the concern we are not able to address any particular situations.

- Effort control is not well explained in the report. The relationship between inputs (days at sea / TAE) and outputs (catch) is not clearly explained, nor how the outputs from the stock assessment is used to inform decisions on the TAE that is appropriate for the current stock status.

[Assessment Team Response:](#) It is noted that catch and effort in relation to the vessel day scheme (VDS) and total allowable effort (TAE) is dealt with specifically in Section 3.4.4, while Section 3.5.1.5, covering harvest strategy and control rules, also goes in to the VDS and TAE in detail. We believe we have covered this extensively and have therefore made no changes to the report.

- Multi-species stock management is not presently a problem for the fishery and its management, but is a potential weak area in the management regime. The two species seem to be unavoidably caught together, and one species (yellowfin) is both less abundant, closer to Bmsy and fished at a level closer to Fmsy than skipjack tuna. It would seem appropriate for managers to start thinking very soon about managing the fishery in order to protect this, weaker, species rather than focussing on skipjack tuna which form the bulk of landings. This issue will be brought to the fore by the team's wording of Condition 3, which serves both to demonstrate the thoroughness of the assessment and the team's proactive approach.

[Assessment Team Response:](#) Thank you. We note that consideration is being given to aspects of multi-species management in the development of the WCPFC harvest strategy.

Executive Summary

This is very clearly set out. Some minor suggestions:-

- **Weaknesses** – the summary doesn't include a list of weaknesses (those this can be inferred from the list of conditions). The MSC reporting template indicates that fishery weaknesses should be listed in the Executive Summary, and it would be appropriate to include these.

[Assessment Team Response](#): Noted, thank you. Identified weaknesses have now been linked to the Conditions that have been set.

- **Conditions**
 - Condition 4 - there is a typographic error (it should relate to PI 1.2.2, not 1.2.3)

[Assessment Team Response](#): Noted, thank you – this has been corrected.

- Condition 5 – this should be split in two, one condition relating to each UoA.

[Assessment Team Response](#): Noted, thank you. An additional Condition (#6) has now been created, replicating Condition 5 (that is now applied only to UoA 1) for UoA 2. There is no change to scoring.

- Recommendation
 - The team has generated a recommendation, which ought to be reported here.
- [Assessment Team Response](#): We presume the Peer Reviewer missed that the Recommendation was already included in the Exec. Summary.

Description of the Fishery

3.3.1 Total WCPFC catch etc

- Tables 4 & 5 –
 - It is not clear whether the first row in each table is the TAC for the corresponding year. Please amend to make this clear.

[Assessment Team Response](#): The rows are clearly labelled as 'Catch', so it is not understood why there is any confusion over this issue. No changes have been made.

- It is also not clear from the remainder of the document whether a TAC is agreed for the fishery each year as a management tool, or whether management of fishing effort is by TAE.

[Assessment Team Response](#): There is no TAC in the PNAFTF, and the exploitation rate in the PNA fishery (and the wider WCPFC fishery) is managed through effort. A note has been added to the introduction to clarify this point.

3.4 Overview of the fishery

This provides an interesting overview.

Some minor suggestions / queries below:-

- **Figure 1** –
 - Why is Tokelau highlighted in green? It is not clear from the legend or the text why this location is significant at this point (we have to wait for later in the report to find out why).

[Assessment Team Response](#): As above, we have now provided more detail on the status of Tokelau at an earlier point in the report.

- Which is the PNA geographical area? The sea area in white, yellow or blue?

[Assessment Team Response](#): The figure legend has also been edited to provide more detail.

- **WCPFC Convention** – this appears unannounced on page 21. Both this and the UNFSA could be better introduced to set the context for the PNA.

[Assessment Team Response](#): Noted, thank you. The WCPFC Convention is now described as the regional fisheries management agreement covering the WCPFC convention area (WCPFC-CA), and UNFSA has now been described as the agreement requiring management

of straddling/highly migratory fish stocks on a sub-region by sub-region basis through Regional Fisheries Management Organisations (RFMOs).

- **Figure 3** – and now we have WCPFC-CA. Not explained. How does this geographic area relate to / compare with the PNA area? Is one within the other / do they overlap? (we're about to find out, but don't know any of this yet)

Assessment Team Response: Noted, thank you – please see the response above.

- **Figure 4** – this should probably come before Figure 3. I can roughly compare this with Figure 1 to see that the PNA is within the WCPFC-CA. But still no indication of stock boundaries.

Assessment Team Response: Noted, thank you. We believe this is a comment on style and no changes have been made to the report as a result.

- **VDS** – acronym introduced with no explanation on page 22. Please explain here and cross-refer to later text.

Assessment Team Response: We note that the VDS is introduced and described on Page 20. No changes have been made to the report.

- **Tables 10 & 11 vs Tables 4 & 5** – the figures for catches in 2014 don't match in these tables; they should (since the UoA and UoC are identical).
 - Table 4 shows UoC skipjack landings of 625, 258t in 2014; Table 10 says 617,870t for the UoA.
 - Table 5 shows UoC yellowfin landings of 131,601t in 2014; Table 11 says 131,250t for the UoA.

Assessment Team Response: These small differences result from the different information sources used, with the Table 4 and 5 figures (including for 2015) having been provided direct by the client, while the Table 10 and 11 data were required to extend further back in time, although data from 2015 were not available. There is no particular issue or concern associated with having small differences in the numbers presented when catch accounting may not be complete between data sources.

- **VDS & TAE** (pages 25 et seq)
 - It is stated that the TAE for PNA waters has been set at 2010 levels by the WCPFC, a management objective that seems to apply both within and outside the PNA area. I can't find a clear statement of what the TAE was in 2010. However in the final paragraph on page 27 the report presents TAE figures that show an increase in TAE over the period 2014-2016 (TAE in 2014 & 15 including Tokelau was 45,610d; in 2016 it was 45,881d).

Assessment Team Response: Noted, thank you. A comment has been included to indicate that more information on the origin and allocation of the TAE is available in Sections 3.5.1.5 and 3.7.6.

- Tokelau TAE – where does this come from? Is it determined by the PNA / WCPFC or is it awarded by Tokelau to itself?

Assessment Team Response: Noted, thank you. Please see the response above.

- Archipelagic waters of the Solomon Islands and Papua New Guinea – please explain why the VDS not apply here, and the consequences of this (if any), since the waters around the Solomon Islands and PNG seem to be among the most important fishing areas of the entire PNA area, judging by Figures 6 & 7.

Assessment Team Response: Thank you. We note that coastal states which are parties to WCPFC are expected to adopt measures commensurate in their own nearshore waters, e.g.

paragraph 12 from CMM 2016-01: “Coastal States are encouraged to take measures to reduce fishing mortality on juvenile bigeye and yellowfin tuna in archipelagic waters and territorial seas and to notify/inform the WCPFC Secretariat of the relevant measures that they will apply in these waters including longline bigeye catch limits and expected number of FAD sets or bigeye catches from purse seining.”

3.5 Principle One: Target species background

Overall – according to section 3.4.4, yellowfin and skipjack tuna are not separately targeted; they are caught simultaneously (perhaps unavoidably so). The stock of yellowfin is smaller than, and closer to Bmsy than the stock of skipjack tuna. Fishing mortality is also closer to Fmsy for yellowfin tuna than for the more abundant skipjack tuna.

It is not at all clear from the text here nor in Principle 3 how (or whether) the harvest strategy, harvest control rules, or management objectives have taken account of the possibility that at some point in the future the yellowfin tuna stock may fall below MSY while skipjack tuna remain above MSY.

The WCPFC are quoted in the report (see page 39) as stating in 2010 that skipjack tuna depletion at that time required a decision should be taken “*in the near future...as to the acceptable level of depletion and future harvest strategies for this stock*”. The management system has been silent, it would seem, with respect to yellowfin tuna, which would also seem to be more urgent candidates for action.

[Note: I see that this issue has been anticipated by the team and addressed by Condition 3, and leave the comments above in to demonstrate consideration of this issue during the course of this review of the report.]

Assessment Team Response: Noted, thank you. Although the stock remains not overfished and not subject to overfishing, the Assessment Team recognize the importance of the adoption of an appropriate harvest strategy.

3.5.1 Skipjack tuna

Table 12 – legend & table are cryptic. The terms “h” and “Mix_2qtr” need explanation. They are not explained in the relevant text for skipjack tuna (although they are later in the report for yellowfin).

Assessment Team Response: Noted, thank you. Additional annotation has been included.

3.5.1.3 & 3.5.1.4 – Stock assessments

- **Confusion** - while appreciating that the December 2016 stock assessment would have been released while the assessment was being carried out, it is a bit confusing to include all of the (now superseded) information from the 2014 assessment. A restructuring / summary of this information would be appropriate/ less confusing.

Assessment Team Response: The aim of including the earlier information was to indicate that there is a significant level of confidence that the latest results are reliable. No changes have been made to the report.

- **Figure 13 vs Table 13**

- It is hard to reconcile Figure 13 with the assessment outputs in Table 13. The graph seems to show that catches are at the level of MSY at present, and not 45% of Fmsy as the table suggests. This is a fundamental issue that requires clarification.

Assessment Team Response: The fishing mortality and spawning biomass values in Table 13 are consistent with the stock not being overfished or subject to overfishing. The MSY value in Figure 13 is also consistent with the assessment outcomes. It is acknowledged that current

catches are approaching MSY and that the spawning biomass is close to the target level. The outcomes indicate that a large increase in fishing mortality would result in a relatively small increase in catch.

- **Projections**

- A notable omission from this stock assessment is the absence of any predictive element and / or consideration of likely stock status under different management scenarios. The assessment appears to be entirely retrospective. Is this the case, or is stock status under different management scenarios examined in the assessment?

[Assessment Team Response](#): Thanks you. We note there is a limit to how much of the stock assessment can be reproduced in the report. However, there is discussion of stock projections in the stock status section for both skipjack and yellowfin. Additional information is presented by Pilling *et al.* (2014).

- In the scoring of PI1.1.1 and in the reference list I note that projections have been produced for several tuna species (Pilling *et al.*, 2014). It would be helpful to see the findings reported here.

- [Assessment Team Response](#): Please see response above.

3.5.1.5 Harvest strategy and control rules (skipjack tuna)

- **page 41, para commencing “The VDS TAE is determined annually in advance...”**

- It is implicit from this text that the TAE is determined purely on the basis of attaining the 2010 TAE “target” by assuming annual effort creep of around 2-3%pa, and taking into account how overall fleet vessel length has changed.
- It is not at all clear how information from the stock assessment informs the decision on VDS TAE, if at all. It would be very helpful if the report spelt out whether the VDS TAE takes account of stock assessment information, and how this is considered in the process.

[Assessment Team Response](#): Thank you. We note that this is an important consideration in discussion as to whether scoring issue 1.2.1a is met for skipjack. It is discussed in Box 1 in Section 4 of the report.

- **Is there an annual TAC?**

- Earlier in the report (Tables 4 & 5), it seems to be suggested that there is an annual TAC (though this is not totally clear). There is no mention of this anywhere in this section.
- Please could you clarify in Tables 4 & 5 and their supporting text whether or not there is an annual TAC or whether the value shown in them is the predicted harvest associated with the permitted level of fishing effort under the VDS TAE system.

[Assessment Team Response](#): Tables 4 and 5 are part of a standard template covering a range of fisheries. There is no TAC in place.

3.5.2.4 Harvest strategy and control rules (yellowfin tuna)

- Further to the comments above, it is not at all clear that appropriate HCRs are in place for yellowfin tuna. The HCRs that are in place for the more plentiful skipjack tuna are not appropriate HCRs for this species; nor is it appropriate to consider that purse seining for yellowfin requires less consideration than other fishing methods because it only accounts for 40-50% of total annual catches.

[Assessment Team Response](#): Thank you. We note that Condition 4 requires the development of HCRs for yellowfin.

- Projections

- As noted for skipjack tuna above, the omission of any projections of stock status is significant, particularly for yellowfin tuna which are both less numerous and closer to Bmsy levels than skipjack tuna. Some reporting of the findings in the Pilling *et al* 2014 report would be helpful here.

[Assessment Team Response](#): As noted above for skipjack tuna, there is mention of the stock projections for yellowfin tuna in the stock status section (Section 3.5.2).

3.6 Principle Two: Ecosystem background

3.6.1 Primary & secondary species

- Table 15 & supporting text
 - If it is the case that skipjack & yellowfin are unavoidably caught together, then the presentation of information in this table is appropriate. If not, then it would seem more appropriate to show the catch composition from fishing activities targeting (or catching) each species separately.
 - (N.B., if the two species are unavoidably caught together, then the implications for the harvest strategy and HCRs are significant and require attention, as noted above).

[Assessment Team Response](#): It is considered that the two tuna species are taken together, and so the catch table is appropriate. However, please see the comments against Principle 1.

- 3.6.1.1 Bigeye tuna & 3.6.1.2 Blue marlin
 - It is not clear from the description of the species why bigeye tuna is a primary species and blue marlin is a secondary species. The determination should be based on whether or not management tools or measures are in place, so these (or their absence) should be mentioned in the text.

[Assessment Team Response](#): It is highlighted that while bigeye tuna is managed according to reference points (and is therefore a primary species), the introductory text states that “No target or limit reference points have been established for the Pacific blue marlin stock under the auspices of the WCPFC”. As such, blue marlin is a secondary species because it does not meet the test for primary species, as these are species “where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points”. Nevertheless, it is noted that an assessment is conducted that provides information on status relative to reference points. Therefore, it is a secondary species that clearly does not need to be assessed with the RBF. No changes have been made to the report.

3.6.2 ETP species

- This text is very thorough and the comparisons to other MSC-certified fisheries in the geographic area is to be commended. The overall approach here is excellent.

[Assessment Team Response](#): Noted, thank you.

Habitats?

- There is no mention of the potential risk of habitat interactions. It would perhaps be helpful to include some text which explains why habitat interactions are not considered to be relevant (i.e. because of the nature of the gear, its dimensions, and the depth of water where the fishery operates). Nevertheless, the pelagic realm is a habitat which needs to be mentioned; although I fully accept that impacts of purse seine gear on sea water are infinitesimal. This is a technical rather than a practical omission from the report.

[Assessment Team Response](#): It is noted that Section 3.6.3 provides a brief summary of the risk to habitats, and highlights the depth of water fished in relation to the type of gear being used (i.e., a surface to near-surface purse seine nets). No changes have been made to the report.

3.7 Principle Three: Management system background

3.7.1 Fishery specific management system

- Acronyms – please cxh.
- Hierarchical management system – it would seem more appropriate to list this as global – regional – national, in line with Figure 30 in the report.

[Assessment Team Response](#): Noted and agreed, thank you – this has been done

3.7.3 Regional organisations

- 3.7.3.1 – explain what the OFP part of SPC-OFP is.

[Assessment Team Response](#): Noted, thank you. Oceanic Fisheries Programme (OFP) has been added to the text.

3.7.5 National legislation

- Nice summary – please define what is an NPOA.

[Assessment Team Response](#): Noted, thank you. ‘National plan of action’ (NPOA) has been added to the list of acronyms.

3.7.6 Vessel Day Scheme & Effort Limitation

- **Overall** – this section provides a description of the system that lies at the heart of managing this fishery. There are some items here that need attention in order to fully explain the operation and effectiveness of the management arrangements. Key points are:-
 - **Effort allocation** – is there an allocation key for sharing the TAE between PNA signatories? Is this formally agreed, what was it based on, and is it subject to review?

[Assessment Team Response](#): We agree that this is not clearly outlined in the text, and corrections have been applied. Yes, there is a procedure for allocation of effort between parties – this is provided in Article 12 of the Palau Arrangement (2015 amendment)

- **Tokelau** – when was the 1000d VDS for Tokelau established? On what basis has this been reduced to 985d (2014) and 991d (2015). Was this in response to advice on stock status or was it in response to effort creep?

[Assessment Team Response](#): Thank you. We note that Tokelau joined the VDS scheme in 2014. The VDS administrator report provides detail on how Tokelau has been incorporated “Tokelau - is now part of the VDS although it is not part of the PNA TAE. It has its own TAE of 1,000 days that it brings to the VDS which is transferrable with PNA members, so the VDS TAE, in effect, becomes 45,623 days. With annual adjustments of the TAE the days for each contributing party is adjusted accordingly – hence 1000 days is the Tokelau baseline which is adjusted proportionately in line with the proportions allocated to other parties.”

- **What are the controls?** Earlier in the report (page 25) we are told that the TAE has been set at 2010 levels by WCPFC. Here there is no mention of that, but the number of vessels is said to be fixed at 2010 levels (item 1, page 77). Please make it clear whether it is the TAE or the number of vessels that is meant to be fixed at 2010 levels, at present it is not clear.

[Assessment Team Response](#): The text is clear that the TAE refers to the number of days. The references and tables related to vessels (size and number) is used for added information only particularly related to possible effort creep where a formula related to vessel size has been applied. As an example in the 2016 VDS administrators report on effort limits it is stated “The TAE is determined as the number of purse seiner days viz. a) the 2010 level of purse seine effort in PNA EEZs applied as the collective limit for PNA EEZs - for 2015 in accordance with paragraph 20 of CMM 2014-01 was 44,033 days (from WCPFC10: Table 1 of Paper

"WCPFC10-2013-12- Data Summaries in Support of Discussions on the CMM on Tropical Tunas" or Table1 of Paper "WCPFC10-2013-12 CMM tropical tunas data summary (v25-11-2013)); and b) the latest data provided by SPC shows that the level of purse seine effort in PNA EEZs for 2015 is estimated at 31,443 days.

- **Are the controls working?** If the VDS and / or TAE is meant to fix effort at 2010 levels (whether by number of boats or days at sea) then this section should cross-refer to Table 6 & 7 with a commentary on whether or not management controls are working.

Assessment Team Response: Thank you. We have added text to improve both the understanding of the VDS and benchmarking based on 2010 levels.

- **Effort creep** – if the VDS is meant to manage effort and address effort creep (item (d), page 77), then the observation that per day catches have increased from 30t per fishing day to 34t per fishing day (item 4, page 77) requires explanation. Is this CPUE increase a reflection of stock abundance or is it effort creep?

Assessment Team Response: Noted, thank you. We agree and have added text to clarify how effort creep has been addressed.

- **Age of information:** the VDS and effort limitation are clearly at the core of the fishery management approach. However the information presented here is all 3 or more years out of date. While appreciating that the assessment period started in 2016, it seems a significant omission that no data are presented on the performance of the VDS / TAE management arrangements in more recent times (and the availability of such information would support any conclusions that the management system is indeed "...integrated and includes near-real time estimates through the PNA Fishery Information Management System...." (page 78).

Assessment Team Response: Thank you. We agree regarding the age of the data. We have incorporated reference to the PNA 2014-2016 recommendation by members regarding TAE levels.

- **Table 19** – the key information (I think) here is that the PNA countries area allocated a PAE, that they can trade PAW and that in 2014 the overall balance was in credit (i.e. the TAE was not fully utilised). There are several columns in the table that aren't explained and which seem to add nothing to the report – they should either be explained or removed.

Assessment Team Response: We agree that the table would seem unnecessarily technical – we have consolidated the table for simplicity although not all the adjustments in the final PAE balance are now reflected fully in the different columns.

3.7.9 Compliance

- **IUU fishing** – it is noted here that IUU fish landings are estimated at around 5.1% of the total skipjack tuna catch and 15.8% of the yellowfin tuna catch in the WCP-CA. It appears that these landings result from vessels outside the PNA UoA. For both species, it would be appropriate to explain in the stock assessment part of the report whether and how these IUU removals are taken into account as an uncertainty.

Assessment Team Response: Noted, thank you. We consider that this comment has been addressed in response to the comments on performance indicators, above.

4.1 Harmonised Fishery Assessment

The team seems to have done a very thorough job here, particularly with regard to harvest control rules and assessment of cumulative Principle 2 impacts.

Assessment Team Response: Noted, thank you.

4.5 Evaluation processes and techniques

The team is to be commended on a very clear and succinct explanation of its approach to scoring multiple elements against PIs with several SIs.

[Assessment Team Response: Noted, thank you.](#)

Principle 1 Scoring – General comment

- **Reference points vs PRI / MSY** – for skipjack in particular the TRP seems to have been used to determine the assessment outcome rather than MSY. This doesn't affect the outcome (in fact the TRP is at a higher level than MSY), but is nevertheless incorrect and should be addressed.

[Assessment Team Response: Noted, thank you. Information on MSY-related reference points has been added. It should be noted that the MSC v2.0 guidelines allow for the use of proxy indicators.](#)

- **Managing mixed species catches** – as previously noted, it would be appropriate to consider whether (if, as seems the case, both species are unavoidably caught together) the harvest strategy and the harvest control rules & tools that are in place for skipjack tuna are appropriate for the weaker, yellowfin tuna, stock.

[Assessment Team Response: Consideration is being given to aspects of multi-species management in the development of the WCPFC harvest strategy.](#)

Principle 2 Scoring – General comment

- The summary tables for showing the calculation of scoring for individual elements are excellent and very helpful for evaluating the scores awarded. This approach could (and should) be more widely adopted [MSC please note].

[Assessment Team Response: Noted, thank you.](#)

Principle 3 scoring – General comment

- It is appropriate to assess both species together and assign the same scores, by and large. However for PI3.2.1 it would be appropriate to consider whether the fishery-specific management objectives are well matched to each UoA (i.e. both species).

[Assessment Team Response: Thank you. We note that the objectives of the fishery specific management system apply to both UoAs. Text has been added to the rationale for clarification.](#)

Appendix 7: Stakeholder submissions at the PCDR

MSC Technical Oversight

Main ID	Sub ID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
22316	27125	18, 24, 54	Major	FCR-SA3.4.2 v2.0	<p>Throughout the report, the team presents catch information from the UoA that are quite different and come from a variety of sources. For example, Table 4 and 5 are based off a personal communication and give 2014 UoA catches for skipjack and yellowfin as 625,258t and 131,610t, respectively. Later in the report, Table 10 and 11 give 2014 UoA catches as 617,870t and 131,250t, respectively, and are based on SPC data contained in a previous PNA surveillance report.</p> <p>However, the information presented in Table 15 to designate 'main' species in Principle 2 comes from observer data. Within this table the 2014 UoA catches for skipjack and yellowfin as 389,403.2t and 79,822.5t, respectively. These are significantly lower than the values of Table 4, 5, 10 and 11.</p> <p>As the report states that observer coverage of the UoA is 100%, it is currently not clear why such a large discrepancy exists. The reliance on three different data sources further adds to the confusion and brings into question the validity of the species designations used in scoring Principle 2, that were based off the catch data within Table 15.</p>		<p>Thank you for the comment.</p> <p>The catch data as presented are as the MSC TO has explained. Tables 4 and 5 showed updated information provided by the client to ensure the most recent data were presented for readers of the report. The catch data in Tables 10 and 11 provide a longer time series of information from the WCPFC, but the 2014 data have not been updated with the latest information. Noting that the data show only a 1.2 % difference for skipjack tuna, and a 0.3% difference for yellowfin tuna, the fact that data can be updated over time, such that small differences may appear between earlier (as presented in Tables 10 and 11) and later (as presented in Tables 4 and 5) versions is not a feature that is peculiar to the PNA fishery and presents no undue concern to the Assessment Team. Nevertheless, for consistency, the data for 2014 in Tables 4 and 5 have been replaced with those from the Tables 10 and 11.</p> <p>The data as presented in the Table 15 are from the SPC and comprise the confirmed observed catch data for the 2014 and 2015 years. The discrepancy between the totals presented for skipjack tuna and yellowfin tuna in this table as compared with the totals presented in Tables 4 and 5 is caused by a number of reasons, including that there are delays in receiving some observer data, some observer data have yet to be processed, and there are queries over other data such that they remain unconfirmed. Nevertheless, the data are high quality and comprise</p>

Main ID	Sub ID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
							more than 60% of the tuna catch; they are clearly appropriate for understanding and assessing the PNAFTF catch profile overall. A note has been added to Section 3.6.1 to this effect, and to the header of Table 15.
22316	27131	171-172	Minor	FCR-7.10.6 v2.0	PI 2.4.2 scoring issue (a): The assessment team states in the scoring rationale that "the PNAFTF scores 100 for this SI", the rationale however, does not reference a 'strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats' and scoring of this PI, however reflects the SG80 level.	2.4.2	Thank you for the comment. The score for PI 2.4.2 SIa was reduced to 80 in response to a Peer Review comment, but the SG100 level was left marked as being 'met' by mistake. The rationale has been edited to better reflect the original change.
22316	27133	188	Major	FCR-7.10.6.1 v2.0	PI 3.1.2 Scoring Issue (b): The rationale presented does not provide evidence of the regularity that management seeks relevant information. This is required at the SG80 level.	3.1.2	Thank you for the comment. The rationale used has been strengthened to provide evidence of the regularity with which management seeks information.
22316	27135	195	Major	FCR-7.10.6.1 v2.0	<p>PI 3.2.2 Scoring Issue (a): The rationale presented does not provide evidence of what the decision-making processes trigger for fisheries-related issues, if they have been triggered in the past or if they are recognised by stakeholders. It is also unclear as to what the decision-making processes entail for Flag States and how these processes feed into the WCPFC and PNA processes in achieving the fishery-specific objectives.</p> <p>The MSC has recently clarified its intent to scoring flag states in P3 through an interpretation on the following link: http://msc-info.accreditation-services.com/questions/flag-states-in-principle-3/</p>	3.2.2	<p>Thank you for the comment.</p> <p>We have strengthened the rationale particularly related to the concerns about the expansion of the purse seine fishery and arrangements between flag states which include the licensing of foreign flag vessels. The development of the Palau Arrangement in 1992 and the Federated States of Micronesia Arrangement for Regional Fisheries Access (FSMA) in 1994 are administered by the Parties to the Nauru Agreement. Meetings of the PNA and the decision-making processes related to these two arrangements feed into the WCPFC through, for example, the VDS capping of effort at 2010 levels. The FMSA in particular is a mechanism for domestic vessels of the PNA to access the fishing resources of other parties and the PNA.</p> <p>Further Under Article 5 of the Nauru Agreement para 9. The decision of the Parties shall be by consensus.</p>

Main ID	Sub ID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
							If consensus is not possible each Party shall have one vote, and the decision shall be taken by a vote of 5 members.
22316	27138	199	Major	FCR-7.10.6.1 v2.0	PI 3.2.3 Scoring Issue (a): The rationale provided doesn't describe the evidence of how the MCS system has demonstrated an ability to enforce management measures, strategies and/or rules in regard to Flag State vessels.	3.2.3	Thank you. The scoring rationale has been adjusted and rationale strengthened, but the score for SIa has also been lowered from 100 to 80 in response to this comment and those provided by the IPNLF.
22316	27159	118	Major	FCR-PB3.2.2 v2.0	<p>PI 1.2.1 Scoring issue (a). The team scored this scoring issue at the SG60 level. However, the rationale presented ends with comments that the team believes the score should meet SG80 but have scored SG60 "In keeping with MSC requirements for harmonisation". However, as per FCR-PB3.2.2., the evaluation of the team is required to be consistent among teams, as well as the scoring and conditions.</p> <p>The MSC further clarified this notion through the interpretation published here: http://msc-info.accreditation-services.com/questions/what-are-the-msc-requirements-on-harmonisation-multiple-questions/</p>	1.2.1	<p>The justification PI 1.2.1 scoring issue (a) for skipjack has been amended.</p> <p>The team notes that the scoring of this issue has been the subject of discussion amongst CABs. Although the team accepts the harmonized outcome, we point to the interpretation highlighted by MSC.</p> <p>One aspect of this interpretation relates to dispute resolution, stating that "There is currently no explicit dispute resolution process to cover cases where teams are unable to achieve harmonized positions". The interpretation goes on to say that "in cases where harmonization is proving difficult and teams are in dispute, MSC suggests the following actions:</p> <ul style="list-style-type: none"> • If any part of the FCR process or default tree (fisheries standard) is not clear to either of the teams, they should request MSC to provide an interpretation, by giving details of the clauses in dispute and any specific uncertainties; • If the MSC requirements are clear to the teams, but the application to the specific fisheries is in dispute, they should request MSC to assign an independent expert to work with the teams to: • facilitate an agreement (i.e. assist in the understanding of the issues and their implications, with the final decision still being left to the CABs to agree); and,

Main ID	Sub ID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
							<ul style="list-style-type: none"> if no agreement can be reached, to provide a binding arbitration (i.e. a decision that both CABs must accept)." <p>As mentioned in the justification for 1.2.1a, Acoura has undertaken discussions with other CABs on this scoring issue for skipjack. Despite accepting the harmonized outcome, the assessment team continue to believe there is some justification of a score of 80 for this scoring issue. The assessment team conclude that the scoring for 1.2.1 (a) has reached a stage where MSC could consider appointing an independent expert to evaluate the arguments and provide a binding arbitration if required.</p>
22316	27181	95	Guidance	FCR-7.6.1 v2.0	The eligibility date can either be the date of (re) certification of the fishery, or the publication date of the PCDR (FCR 7.6.1.1-7.6.1.2). The report currently states 20 June 2017, which does not correspond to either of the two options. Please select an eligibility date that is consistent with FCR 7.6.1.1 or 7.6.1.2.		Noted, thank you. The eligibility date has been corrected to read June 15 th 2017.
22316	27182	96	Minor	FCR-7.12.1.3 v2.0	In Table 29 on page 96, the report does not identify the main traceability risk in the fishery, which is that certified and non-certified product of the same species is often/ always on-board on the same time due to FAD sets which are outside the UoC. The report must clearly document this risk, and relate it to the mitigation - which is that CoC is required to start on-board.		Thank you, we have modified the text to provide more details on the process undertaken to determine MSC eligibility. We believe we have now more clearly identified how risks are mitigated. The traceability systems in place on board the vessel are rigorous. CoC starts at the point at which product is delivered to identified factories ashore.
22316	27183	97	Minor	FCR-7.12.2.1 v2.0	The report states "only tuna supplied from organisations included within the scope of PNA's CoC certification and agreements can be claimed to have originated from the PNAFTF." If these are the parties eligible to use the certificate, the		Thank you for the comment. A current list of relevant organisations is now included. This is subject to change over time, and the PNA Office should be contacted for an up-to-date list if required.

Main ID	Sub ID	Page Reference	Grade	Requirement Version	Oversight Description	PI	CAB Comment
					<p>CAB must determine and document these parties according to FCR 7.12.2.1.</p> <p>The report also states MSC CoC is required from the point of delivery to factories. The report must clarify that CoC is required to begin on-board the vessels.</p>		<p>As noted above, the traceability systems in place on board the vessel are considered to be rigorous. CoC starts at the point at which product is delivered to identified factories ashore.</p>
22316	27184	97-98	Guidance	FCR_7.12.1.5.b v2.0	<p>Please state the point of intended change of ownership of product, and clarify that CoC starts on-board as per FCR 7.12.1.5c.</p>		<p>Thank you for the comment. Change of ownership is now shown as being the point at which the product is delivered to the factory.</p> <p>As noted above, the traceability systems in place on board the vessel are rigorous, but CoC starts at the point at which product is delivered to identified factories ashore.</p>

American Bird Conservancy - David A. Wiedenfeld, Ph.D.

“American Bird Conservancy (ABC) is a non-profit organization whose mission is to conserve native birds and their habitats throughout the Americas.”

PI	Nature of Comment	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB response
PI 2.2.3	4 Report deficiency	<p><i>Although as many as 57 species of seabirds occur in the area of the fishery, seabirds as bycatch are almost entirely ignored in the report. This makes it impossible to determine whether seabird bycatch exists in this fishery, and if so, whether seabird bycatch would require changes in the scoring of the performance indicators (PI) or could even require Conditions for certification to be placed on the fishery. The report indicates that observer coverage is 100% in the PNAFTF, and that CMM 2015-03 requires recording seabird bycatch. However, no data are presented to indicate whether seabirds were detected during the periods of observation. There is simply no mention of seabirds and bycatch risk in the report beyond references to the MSC certification requirements or the CMMs. No information is provided whether there is any seabird bycatch or not.</i></p> <p><i>It is known that seabirds can be at risk from purse seine gear. At least 28 species of seabirds have been recorded as having been caught in purse seines, and purse seines appear to be a significant risk to some seabirds such as brown pelicans <i>Pelecanus occidentalis</i> in the Gulf of California (see the MSC certification report for the Small Pelagics Fishery in Sonora, Gulf of California, April 2017). Therefore, it cannot be assumed that this PNA tuna purse seine fishery poses no risk to seabirds.</i></p> <p><i>In addition, MSC requires consideration of mortality of non-target and out-of-scope species that may not be related to gear interactions, such as collisions caused by attraction of the birds to vessel lighting at night, or fouling by fish during scavenging. Many of the species in this area are considered “tuna birds,” and are highly dependent upon the predatory tuna to drive their prey to the surface (Au, D. W. K, and R. L. Pitman,</i></p>	<p><i>Thank you for the comment.</i></p> <p>The PNAFTF occurs in the tropical waters of the WCPO, between 20° N and 20° S (Figure 9) with the majority of effort occurring between 5° N and 10° S; the report has been revised to reflect that seabird abundance in this area is relatively low (Waugh et al. 2012 and Figure 28).</p> <p>Malony (2005) reported that a single seabird (unidentified) was taken in 28,751 observed purse seine sets between 1994 and 2004. That report stated that the low incidence of bird captures by purse-seine operations in the WCPO indicates that the risk to the sustainability of tropical bird populations in the WCPO is negligible. More recently, WCPFC (2016g) reported that there were 0 interactions with seabirds in 1,065 observed purse seine trips in 2015, WCPFC (2016d) reported that in 845 purse seine trips in 2015 there were three interactions with seabirds, which resulted in one bird not being landed and two being released ‘alive and healthy’, while WCPFC (2014d) reported that there were no interactions with seabirds in purse seine trips in 2013, other than instances when birds were sighted or landed on deck, and in all instances the birds were described as ‘healthy and flew away in good condition’.</p> <p>A study on bycatch in purse seine fisheries in the WCPFC area has been undertaken recently (Peatman et al. 2017) but their report was published in July 2017, after the PNAFTF PCDR was published. It is noted that the requirements for observer coverage are detailed in Section 3.7.7 of this report, and that there has been a 100% observer coverage requirement in the fishery since 1st January 2010.</p>

PI	Nature of Comment	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB response
		<p><i>1986, Seabird interactions with dolphins and tuna in the Eastern Tropical Pacific, Condor 88: 304-317). For example, the Sooty Tern (Onychoprion (=Sterna) fuscatus) is an obligate commensal on tuna. Boobies, especially the red-footed and masked species (Sula sula and Sula dactylactra) are the most abundant of birds in tropical waters north of the equator, and are characteristic of flocks that feed with yellowfin tuna (Au, D. W. K., 1986, Seabird-tuna relationships, Southwest Fisheries Science Center publication). Potential disruption of this bird-prey-tuna interaction through the reduction of biomass of tuna is another potential impact to be considered by this assessment.</i></p> <p><i>Finally, because the fishermen are not setting nets on FADs nor on dolphins, are they setting on bird aggregations? This should be made clear in the report as well.</i></p> <p><i>This information gap in the PNA tuna purse seine fishery report—giving no information on direct seabird bycatch or mortality or indirect impacts—can be easily resolved. If there is no seabird bycatch or mortality, it can be demonstrated very quickly by summarizing and citing observer reports showing no seabird bycatch. If some seabird bycatch or mortality does exist, this should be reported and analysed, and subsequently scored. It is not acceptable to provide no information, positive or negative about seabird bycatch. Similarly, indirect impacts to the tuna-bird interactions should be addressed in this assessment, and it should be clearly stated whether there is evidence or lack of information regarding this impact.</i></p> <p><i>If there is seabird bycatch or mortality in the PNA tuna purse seine fishery under consideration for certification, scoring of that bycatch should be taken into account as appropriate in the scoring of the fishery.</i></p>	<p>The Assessment Team has taken the approach of assessing all seabirds within the ETP species Performance Indicators. However, after an extensive review of the literature, and having been unable to identify any information or data suggesting that the PNAFTF poses a risk to seabird populations, and instead noting that the Malony (2005) report and other more recent observer data from 2013-2015 (WCPFC 2014d, WCPFC 2016d, WCPFC 2016g) that indicate negligible risk to seabirds, we have not changed the scoring of PIs 2.3.1 – 2.3.3.</p>
PI 2.3.3	4 Report	See the comment immediately above with respect to a lack of information in the certification report regarding seabirds.	<p>Thank you for the comment.</p> <p>Please see our response to the comment above, highlighting that the</p>

PI	Nature of Comment	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB response
	deficiency	<p><i>However, not only is no report made on seabird bycatch or mortality in general, nor evidence provided for lack thereof, the report does not provide any information on bycatch or mortality of ETP (Endangered, Threatened, or Protected) seabird species. The previous comment applies to this PI as well.</i></p> <p><i>Determining which ETP species occur in the PNAFTF can be facilitated through the use of tools such as the Seabird Maps and Information for Fisheries map tool (http://fisheryandseabird.info). Use of that map tool quickly provides a list of 57 seabird species in the area. The map tool and reports produced from it provide information that can be used to determine the status of the seabird species and therefore whether they should be considered under this PI.</i></p> <p><i>There are at least 13 species of seabirds that occur in the PNAFTF that meet the MSC criteria for being considered as ETP seabird species (see attachment – data from Seabird Maps and Information for Fisheries). Some of these are:</i></p> <p><i>Beck’s Petrel Pseudobulweria becki (IUCN Critically Endangered) This species’ range occurs entirely within this fishery.</i></p> <p><i>Polynesian Storm Petrel Nesofregatta fuliginosa (IUCN Endangered) Also protected in Kiribati (Laws of the Gilbert Islands: Revised Edition 1977, Chapter 100, Wildlife Conservation).</i></p> <p><i>Phoenix Petrel Pterodroma alba (IUCN Endangered) Also protected in Kiribati (Laws of the Gilbert Islands: Revised Edition 1977, Chapter 100, Wildlife Conservation).</i></p> <p><i>Heinroth’s Shearwater Puffinus heinrothi (IUCN Vulnerable) This species is also protected under USA Endangered Species Act.</i></p> <p><i>9 other species are also listed as IUCN Vulnerable.</i></p>	<p><i>observer data indicate that the risk to seabird populations is negligible.</i></p> <p><i>We note that the impact on seabirds is considered intrinsically within the scoring of the ecosystem PIs (PI 2.5.1 – 2.5.3), where the key ecosystem element is assessed as being skipjack tuna as a key predator and prey species within the warm pool foodweb. In this regard, it is noted that skipjack tuna stock in the WCPO is well above the level that will support MSY ($SB_{2015}/SB_{MSY} = 2.56$ for the base case and range 1.81–2.93 across the sensitivity models explored), and current fishing mortality is only approximately half the MSY level ($F_{2011-14}/F_{MSY}=0.45$ for and range 0.40–0.59 across the sensitivities for the reference case) (WCPFC 2016b).</i></p> <p><i>No changes have been made to the report.</i></p>

PI	Nature of Comment	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	CAB response
		<p><i>This information gap in the PNA tuna purse seine fishery report—giving no information on ETP seabird bycatch—can be easily resolved. If there is no ETP seabird bycatch, it can be demonstrated very quickly by summarizing and citing observer reports showing no ETP seabird bycatch. If some ETP seabird bycatch does exist, this should be reported and analysed, and subsequently scored. It is not acceptable to provide no information, positive or negative about ETP seabird bycatch.</i></p> <p><i>If there is ETP seabird bycatch in the PNA tuna purse seine fishery under consideration for certification, scoring of that bycatch should be taken into account as appropriate in the scoring of the fishery.</i></p> <p><i>Similarly, ecosystem impacts of target and removal of tuna-bird associated schools should be addressed under PI 2.5.</i></p>	

Table below shows data as presented by the American Bird Conservancy

SOURCE: Seabird Maps and Information for Fisheries (<http://fisheryandseabird.info>) for area approximating the PNA fishery area.

English Common Name	Scientific Name	IUCN Status	Min. Population	Documented Bycatch	Range Area (sq. km)	Intersection Area (sq. km)	Fishery %	Range %
Beck's Petrel	<i>Pseudobulweria becki</i>	Critically Endangered (CR)	70	Undocumented	602,788	602,788	7	100
Polynesian Storm Petrel	<i>Nesofregetta fuliginosa</i>	Endangered (EN)	1,500	Undocumented	36,649,717	3,887,862	47	11
Phoenix Petrel	<i>Pterodroma alba</i>	Endangered (EN)	30,000	Undocumented	21,403,827	894,624	11	4
Providence Petrel	<i>Pterodroma solandri</i>	Vulnerable (VU)	100,000	Yes	35,116,871	4,452,234	54	13
Heinroth's Shearwater	<i>Puffinus heinrothi</i>	Vulnerable (VU)	350	Undocumented	483,680	483,680	6	100
White-necked Petrel	<i>Pterodroma cervicalis</i>	Vulnerable (VU)	150,000	Undocumented	66,331,481	4,842,137	58	7
Buller's Shearwater	<i>Ardenna bulleri</i>	Vulnerable (VU)	1,500,000	Yes	116,369,194	5,811,996	70	5
Gould's Petrel	<i>Pterodroma leucoptera</i>	Vulnerable (VU)	3,000	Undocumented	48,684,362	5,991,268	72	12
Collared Petrel	<i>Pterodroma brevipes</i>	Vulnerable (VU)	670	Undocumented	23,654,464	5,116,987	62	22

English Common Name	Scientific Name	IUCN Status	Min. Population	Documented Bycatch	Range Area (sq. km)	Intersection Area (sq. km)	Fishery %	Range %
Cook's Petrel	<i>Pterodroma cookii</i>	Vulnerable (VU)	670,000	Undocumented	97,472,646	3,634,523	44	4
Stejneger's Petrel	<i>Pterodroma longirostris</i>	Vulnerable (VU)	400,000	Yes	64,388,965	351,381	4	1
Pycroft's Petrel	<i>Pterodroma pycrofti</i>	Vulnerable (VU)	30,000	Undocumented	31,090,795	2,617,665	32	8
Matsudaira's Storm Petrel	<i>Oceanodroma matsudairae</i>	Vulnerable (VU)	20,000	Undocumented	19,496,335	491,253	6	3
Tahiti Petrel	<i>Pseudobulweria rostrata</i>	Near Threatened (NT)	20,000	Undocumented	37,151,691	6,857,764	83	18
Sooty Shearwater	<i>Ardenna grisea</i>	Near Threatened (NT)	20,000,000	Yes	253,391,361	5,382,828	65	2
Mottled Petrel	<i>Pterodroma inexpectata</i>	Near Threatened (NT)	60,000	Yes	140,847,756	6,063,148	73	4
Black-winged Petrel	<i>Pterodroma nigripennis</i>	Least Concern(LC)	8,000,000	Undocumented	91,718,535	6,052,736	73	7
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	Least Concern(LC)	500,000	Yes	9,427,149	1,907,467	23	20
Short-tailed Shearwater	<i>Ardenna tenuirostris</i>	Least Concern(LC)	23,000,000	Yes	114,793,170	5,831,609	70	5
Flesh-footed Shearwater	<i>Ardenna carneipes</i>	Least Concern(LC)	650,000	Yes	109,177,013	5,552,025	67	5
Christmas Shearwater	<i>Puffinus nativitatis</i>	Least Concern(LC)	150,000	Undocumented	61,682,621	3,026,715	36	5
Tropical Shearwater	<i>Puffinus bailloni</i>	Least Concern(LC)	28,000	Yes	36,023,672	6,930,478	84	19
Wedge-tailed Shearwater	<i>Ardenna pacifica</i>	Least Concern(LC)	5,200,000	Yes	82,738,764	7,893,851	95	10
Bulwer's Petrel	<i>Bulweria bulwerii</i>	Least Concern(LC)	500,000	Undocumented	87,856,188	1,738,794	21	2
Wilson's Storm Petrel	<i>Oceanites oceanicus</i>	Least Concern(LC)	12,000,000	Yes	227,880,122	6,374,161	77	3
White-faced Storm Petrel	<i>Pelagodroma marina</i>	Least Concern(LC)	4,000,000	Yes	89,150,398	503,575	6	1
White-bellied Storm Petrel	<i>Fregetta grallaria</i>	Least Concern(LC)	300,000	Undocumented	34,563,943	516,357	6	1
Black-bellied Storm Petrel	<i>Fregetta tropica</i>	Least Concern(LC)	unknown	Yes	328,750,707	5,297,797	64	2
Kermadec Petrel	<i>Pterodroma neglecta</i>	Least Concern(LC)	150,000	Undocumented	91,065,958	6,161,913	74	7
Leach's Storm Petrel	<i>Oceanodroma leucorhoa</i>	Least Concern(LC)	20,000,000	Yes	59,187,125	61,841	1	0
Herald Petrel	<i>Pterodroma heraldica</i>	Least Concern(LC)	150,000	Undocumented	35,232,845	2,201,669	27	6
Red-tailed Tropicbird	<i>Phaethon rubricauda</i>	Least Concern(LC)	32,000	Yes	102,731,588	8,289,995	100	8
White-tailed Tropicbird	<i>Phaethon lepturus</i>	Least Concern(LC)	50,000	Yes	79,553,280	8,289,995	100	10
Australian Pelican	<i>Pelecanus conspicillatus</i>	Least Concern(LC)	unknown	Yes	5,493,309	1,489,928	18	27
Great Frigatebird	<i>Fregata minor</i>	Least Concern(LC)	unknown	Yes	103,814,285	8,289,995	100	8
Streaked Shearwater	<i>Calonectris leucomelas</i>	Least Concern(LC)	3,000,000	Yes	40,429,645	5,527,609	67	14
Masked Booby	<i>Sula dactylatra</i>	Least Concern(LC)	unknown	Yes	96,170,996	8,289,995	100	9
Red-footed Booby	<i>Sula sula</i>	Least Concern(LC)	1,000,000	Undocumented	103,540,285	8,289,995	100	8
Brown Booby	<i>Sula leucogaster</i>	Least Concern(LC)	200,000	Yes	94,375,774	8,289,995	100	9
Little Pied Cormorant	<i>Microcarbo melanoleucos</i>	Least Concern(LC)	10,000	Yes	4,448,934	1,442,638	17	32
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Least Concern(LC)	3,600,000	Yes	3,556,759	544,505	7	15
Brown Noddy	<i>Anous stolidus</i>	Least Concern(LC)	180,000	Undocumented	140,143,207	7,888,790	95	6

English Common Name	Scientific Name	IUCN Status	Min. Population	Documented Bycatch	Range Area (sq. km)	Intersection Area (sq. km)	Fishery %	Range %
Black Noddy	<i>Anous minutus</i>	Least Concern(LC)	400,000	Undocumented	63,073,373	7,888,790	95	13
Blue Noddy	<i>Procelsterna cerulea</i>	Least Concern(LC)	60,000	Undocumented	33,043,204	4,981,346	60	15
White Tern	<i>Gygis alba</i>	Least Concern(LC)	200,000	Undocumented	54,815,659	7,178,131	87	13
Gull-billed Tern	<i>Gelochelidon nilotica</i>	Least Concern(LC)	150,000	Undocumented	4,339,174	86,479	1	2
Greater Crested Tern	<i>Thalasseus bergii</i>	Least Concern(LC)	150,000	Yes	32,366,055	6,439,320	78	20
Lesser Crested Tern	<i>Thalasseus bengalensis</i>	Least Concern(LC)	225,000	Undocumented	25,343,221	1,448,605	17	6
Little Tern	<i>Sternula albifrons</i>	Least Concern(LC)	190,000	Undocumented	7,174,214	1,143,930	14	16
Spectacled Tern	<i>Onychoprion lunatus</i>	Least Concern(LC)	unknown	Undocumented	35,534,763	5,907,894	71	17
Bridled Tern	<i>Onychoprion anaethetus</i>	Least Concern(LC)	610,000	Undocumented	22,865,033	4,722,049	57	21
Sooty Tern	<i>Onychoprion fuscatus</i>	Least Concern(LC)	21,000,000	Undocumented	142,453,135	7,888,790	95	6
Roseate Tern	<i>Sterna dougallii</i>	Least Concern(LC)	70,000	Yes	20,199,852	4,138,517	50	20
Black-naped Tern	<i>Sterna sumatrana</i>	Least Concern(LC)	unknown	Undocumented	25,073,884	6,728,399	81	27
Common Tern	<i>Sterna hirundo</i>	Least Concern(LC)	1,600,000	Yes	11,351,422	2,420,843	29	21
Pomarine Skua	<i>Stercorarius pomarinus</i>	Least Concern(LC)	250,000	Yes	19,632,371	2,983,600	36	15
Lesser Frigatebird	<i>Fregata ariel</i>	Least Concern(LC)	unknown	Undocumented	89,200,364	8,289,995	100	9

International Pole and Line Foundation (IPNLF).

IPNLF's broader policy position and rationale

The bulk of our response to the PCDR consists of our technical response to the CAB's proposed scorings. However, that technical response is without prejudice to our broader policy position, as set out here, on the PNA unassociated / non FAD set unit of certification (hereafter, 'the UoC') (and, in the context of the current reassessment, the PNA unassociated / non FAD set unit of assessment).

During the site visit stakeholder consultation phase of the fishery we raised the issue of artificially separating one component of a particular fishing operation and declaring that 'sustainable' while ignoring the impacts that another, major component of the PNA purse seine fishing operations have on the ecosystem. In the case of the certified PNA fishery the same vessels, on the same trip fish in the same areas, targeting the same species and switch between free school (FAD-free) and associated (FAD) sets (often on a daily basis). None of the impacts of their fishing operations when fishing on FADs have been taken into consideration under the current assessment and in our view this undermines the notion of rewarding sustainable fishing practices and driving improvements on the water.

In catch-and-effort data collected by tuna RFMOs, purse seine fishing, associated with FADs and those on free swimming schools (FAD-free), are not regarded as distinct fishing gears, but are rather seen as examples of changes in fishing operation mode. This is also supported by the International Standard Statistical Classification of Fishing Gear (ISSCFG) and the Western Central Pacific Fisheries Commission (WCPFC) List of Fishing Gears (based on the FAO ISSCFG). Both lists recognise 30 different types of fishing gears, but **unassociated (FAD-free) purse seines is not one of them.**

The question should be asked whether the MSC should allow Units of Assessment/Units of Certification to include some parts of a trip, while ignoring major environmental impacts that are caused by the same fishermen, on the same vessels, targeting the same species, using the same fishing gear during the rest of their trip. It is debateable whether it was ever the original intent, or within the spirit of what was envisaged when MSC was established, to recognise smaller components of a particular fishing trip as 'sustainable' while completely ignoring the impacts of the rest of that particular trip when it is unlikely to meet the standard.

This philosophical paradox of a 'compartmentalised' sustainable 'fishery' raises serious concerns about the level of inequality that is created when the vast majority of certified fisheries are expected to make concerted efforts to meet the standard for all their fishing operations as a whole. There is also a definite possibility that certified free school tuna fisheries could in fact be sustaining unsustainable practices by subsidising these type of activities through their so-called 'sustainable' operations. If this were to be the case, it would be in total contradiction with the MSC's theory of change of contributing to the health of the world's oceans by recognising and rewarding sustainable fishing practices.

The view expressed below in a recently released technical report¹³, authored by ISSF scientists Ana Justel-Rubio and Dr. Victor Restrepo (current MSC TAB member), summarises the opinion held by most scientists about tuna purse seine fisheries: "*Recently, there has been a tendency by people involved in sustainability discussions to talk about associated and unassociated (free school) sets in the tropical tuna purse seine fishery as if they were two different fisheries. For example, several government or industry groups have sought*

¹³ ISSF 2017-01: Computing a Global Rate of Non-Target Species Catch (Bycatch) in Tropical Tuna Purse Seine Fisheries, February 7, 2017, ISSF Technical Report.

certification by the Marine Stewardship Council only for the tuna products caught in unassociated sets, which do have a lower rate of bycatch [...]. However, most purse seine vessels make both types of sets during a typical fishing trip. With the exception of some seasonal prohibitions set by RFMOs and natural seasonal changes in free school availability, the two set types do not make up two different 'fisheries' [...]

Our view is that the CAB should consider all the environmental impacts of the vessels involved in the PNA fishery whether they fish on free schools or on FADs. If this is not an option that the PNA are willing to consider, we recommend that the process for reassessment of the UoC should be suspended forthwith and that the existing certification should be extended on a short-term basis whilst various issues relating to the UoC are under review by the MSC Board (duly informed by, amongst others, the TAB). Those issues were aired at the MSC UoA consultation workshop held in London on 6–7 June 2017. Depending on the MSC Board's recommendation in due course, *either* the existing certification of the UoC, together with the process for reassessment, should then be terminated *or* the process for reassessment of the UoC can continue.

Our rationale for this position is as follows. We would add that we are not alone in having concerns. There is a significant amount of concern amongst many MSC stakeholders, including a number of retailers, regarding the UoC. This concern was voiced both prior to and during the workshop on 6–7 June 2017.

Assessment Team Response to “IPNLF’s broader policy position and rationale”

Thank you for your comments. We note that the section above is identified as a policy position, and that while the IPNLF considers the assessment to be inappropriate, the PNA free school fishery (PNAFTF) has already been certified for a full certification period, and was considered to meet the scope criteria allowing it to enter this new assessment process. We were aware of the June workshop, and note that Acoura (the CAB for the PNAFTF reassessment) was represented at the meeting. The Assessment Team and Acoura will certainly consider the outcome of any TAB discussions when required to do so.

Inconsistency in defining FAD-free

Moreno et al. (2016)¹⁴ also raised some concerns about the scientific rationale when defining a school as ‘unassociated’ when it is >1nm from a dFAD. They argued that a number of studies have “attempted to characterize this association with varying results. The range of influence of dFADs on tuna schools may vary from two to ten nautical miles and will vary according to local conditions”. They further argue that “this suggests that tuna schools do not aggregate consistently with floating objects and that it is very difficult and subjective to assign a set distance to define association”.

There is also no consistency in how FAD-free fisheries have been defined in MSC assessments. The Echebatar Indian Ocean purse seine tuna fishery, which ultimately was not successful in obtaining certification, unassociated sets were defined as those “taking place at a distance of 5nm or more from a FAD”. Although not clearly specified in their rational, it is likely that the CAB, Acoura Marine, wanted to ensure a higher level of precaution in the absence of clear scientific evidence of what the minimum distance of association is. Incidentally, Acoura Marine is also the CAB for the current assessment of the PNA fishery.

¹⁴ Moreno, G., M. Herrera and J. Morón. 2016. To FAD or not to FAD: A challenge to the marine stewardship council and its conformity assessment bodies on the use of units of assessment and units of certification for industrial purse seine tuna fisheries. *Marine Policy* 73: 100-107.

The certified PNA FAD-free fisheries in the Pacific uses the 1nm definition of unassociated based on this being the distance specified in a management measure to regulate FAD closures. The 1nm definition was adopted as a compromise measure for compliance purposes rather than a measure underpinned by rigorous scientific studies. In the absence of clear scientific evidence pointing to a 1nm definition as a credible classification of a free school, the *precautionary approach* would dictate that rigorous scientific studies be conducted to determine the ideal distance to fish from a FAD in order to minimise unwanted catches and other environmental impacts. This would be in line with the MSC's own intent that "the precautionary approach be applied implicitly throughout the Certification Requirements".

Assessment Team Response to "Inconsistency in defining FAD-free"

- Thank you for your comments. The definition of a FAD used in the PNAFTF assessment is as defined by the WCPFC, (i.e., "*any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with*"), and that 'free school' is only applicable when setting occurs ≥ 1 nm from such objects, consistent with the WCPFC definition. The Assessment Team considers that to use any other definition for the MSC assessment would be inappropriate and/or unmanageable given the WCPFC definition, and that enforceability is a key concern for any fisheries management measure, generally. It is also apparent that there are benefits of fishing on free schools of tuna at this distance, irrespective of whether tuna are moving between FADs or are in some way distantly associated with FADs at the time they are caught, as the bycatch profile for free school sets is cleaner than the profile for FAD sets, in particular with regard to juvenile bigeye tuna (Rice et al. 2014) and silky sharks (Rice & Harley 2013), which are key concerns. We note that PNA also reviews the catch composition to determine MSC eligibility, as sets which include FAD-associated indicator species (e.g., oceanic puffer fish, ocean triggerfish and drummer) are deemed to have come from a FAD set, and are therefore ineligible to go forward to carry the MSC logo.

Problems when making a determination on FAD-free

A further issue to consider is whether it is even possible for an observer or captain to determine the distance of the vessel from a FAD as these structures are designed to be difficult to detect with radar and a visual estimate of distance is almost impossible. Added to that is potential intimidation, undue pressure and maybe even bribery of an observer to make a determination that a particular school is unassociated instead of object-associated.

Assessment Team Response to "Problems when making a determination on FAD-free"

Thank you for your comment. We note that purse seine vessels are equipped with forward looking sonar which allows distance to objects underwater to be determined, which gives a second method of distance measurement over visual observations. In any case, the fact that the data for the 'free school' sets includes those sets in which cryptic FADs (e.g., submerged logs or netting, and whalesharks) and/or FAD-associated fish species are captured (even if no cryptic FAD is discovered in the catch) allows for a precautionary MSC assessment of the fishery, and is evidence that the system for identifying such events is working. Such sets are, of course, not eligible under PNA rules to carry the MSC logo. We note that observers are debriefed upon returning to port, which in part is intended to offer PNAFTF observers an opportunity to provide information on the MSC-eligibility of any catches.

Following the precautionary approach

The precautionary approach would again dictate that additional measures be employed to ensure a higher level of certainty around might constitute fishing operations with supposedly lower levels of ecosystem impacts.

The lack of robust science, and following the precautionary approach, would dictate that: Rigorous scientific studies are conducted to underpin the definition of what constitutes FAD-free.

Stringent measures be implemented to ensure that FAD-free hauls can be determined without putting the onus on observers to make such an important call without the necessary tools at their disposal. Independent verification through electronic monitoring should be implemented as a basic requirement.

The full suite of fishing activities of a purse seiner be subjected to an assessment, whether fishing on FADs or on free schools, to ensure that all its environmental impacts is fully understood and assessed, before they can be certified.

We hope through this submission that we can help to improve the rigour and credibility of MSC assessments and drive improvements in the regional management of tuna fisheries in the Pacific and other oceans.

We recognise the MSC standard as a very good measure of the environmental sustainability of fisheries and actively promote this concept with our market partners. We are however also conscious of the important role that stakeholders play in maintaining the rigour and credibility of the certification process and the need to ensure that the standard is applied consistently by all Conformity Assessment Bodies (CABs). We therefore hope that our inputs as a stakeholder in the PNA Western and Central Pacific Skipjack and Yellowfin, Unassociated / Non FAD Set, Tuna Purse Seine Fishery will be seen in this light.

Assessment Team Response to “Following the precautionary approach”

Thank you for your comment. Currently, the PNAFTF is MSC certified, and this reassessment has been conducted on the same basis as the previous assessment. The benefits in terms of reduced bycatch from fishing at ≥ 1 nm from FADs appear clear (e.g., for bycatch of juvenile bigeye tuna and silky shark), and traceability measures are in place to identify when the initial set determination was incorrect (i.e., when the set, in fact, contains a FAD, or when the catch includes fish that are FAD-associated even if no FAD was found in the net). The traceability systems are robust, and the assessment considers these extra data (i.e., the catches taken with cryptic FADs and those where FAD-associated species were found) as part of the free school fishery to ensure the full impact is assessed on a precautionary basis. As such, until MSC policy changes, such that the PNAFTF cannot be assessed independently, Acoura is able to undertake the assessment as presented.

IPNLF 2 – MSC Stakeholder Submission Template

Contact Information Make sure you submit your full contact details at the first phase you participate in within a specific assessment process. Subsequent participation will only require your name unless these details change.			
Contact Name	<i>Martin</i>		<i>Purves</i>
On behalf of (organisation, company, government agency, etc.) – if applicable			
Organisation	<i>International Pole & Line Foundation (IPNLF)</i>		
Position	<i>Managing Director</i>		
Description	<i>IPNLF promotes the environmental and social benefits of one-by-one tuna fisheries by working on improvements with the fisheries and promoting these benefits to market partners. IPNLF also works closely with other organisations and market partners to promote improved regional management of tuna fisheries at the RFMO level.</i>		
Mailing Address, Country	<i>1 London Street, Reading, Berkshire RG1 4QW, United Kingdom</i>		
Phone	Tel	<i>+</i>	Mob <i>+ 27833245828</i>
Email	martin.purves@ipnlf.org		Web <i>www.ipnlf.org</i>

Assessment Details	
Fishery	<i>PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery</i>
CAB	<i>Acoura Marine</i>

I wish to comment on the evaluation of the fishery against specific Performance Indicators. A table with these indicators and the scores and rationales provided by CABs can be found in Appendix 1 of the draft assessment report.

Nature of comment (Please insert one or more of these codes in the second column of the table below for each PI.)

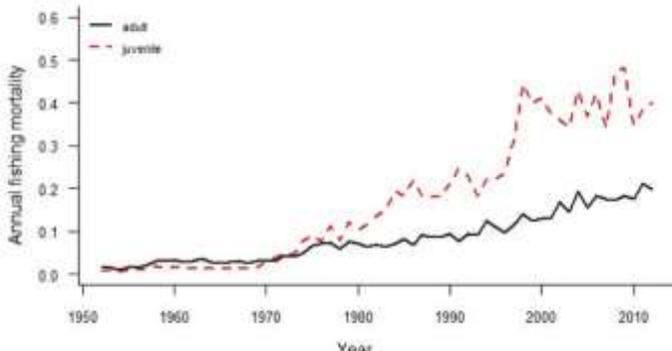
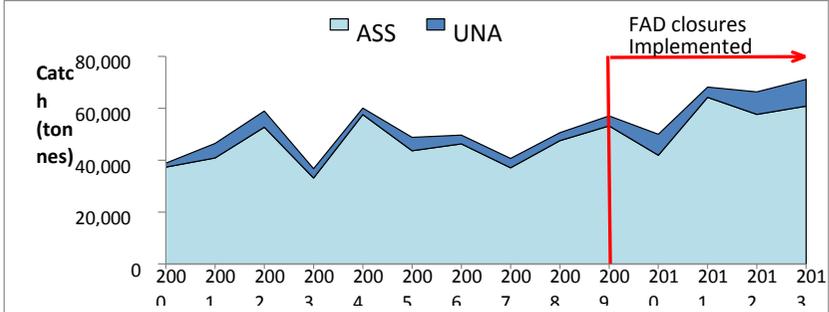
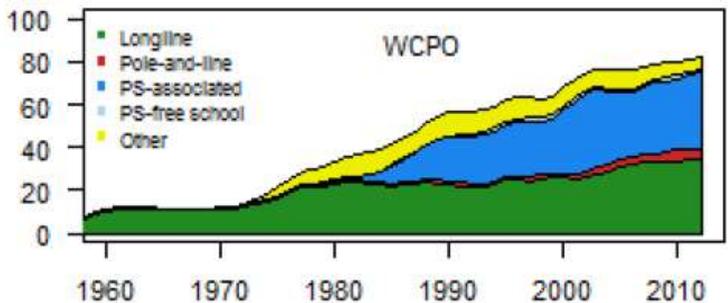
1. I do not believe all the relevant information¹⁵ available has been used to score this performance indicator (please provide details and rationale).
2. I do not believe the information and/or rationale used to score this performance indicator is adequate to support the given score¹⁶ (please provide details and rationale).
3. I do not believe the condition set for this performance indicator is adequate to improve the fishery's performance to the SG80 level¹⁷ (please provide details and rationale).
4. Other (please specify)

¹⁵ [MSC Fisheries Certification Requirements, v2.0 section 7.10](#)

¹⁶ [MSC Fisheries Certification Requirements, v2.0 section 7.10](#)

¹⁷ [MSC Fisheries Certification Requirements, v2.0 section 7.11](#)

PI	Nature of Comment	Justification	Assessment Team Response
<p>PI 2.1.1 b</p> <p>Minor primary species stock status</p>	<p>1</p>	<p><i>The most recent bigeye tuna assessment indicated that the $S_{Blatest}/S_{BF=0}=0.16$ for the reference case, which is below the limit where recruitment will be impaired. The $F_{current}/F_{MSY}=1.57$, which is means that overfishing is severely high (Harley et al. 2014). The BET stock is overfished and overfishing is taking place.</i></p> <p><i>Whilst, the impact of the PNAFTF in isolation might be minimal, it cannot be ignored that the UoA is intrinsically linked to the impact that FAD fishing has on the bigeye stock. According to experts in the tuna fishery, it is not economically feasible for the purse seine fishery to only fish on unassociated sets; catch from FAD sets are needed for industrial purse seiners to be cost-effective (Moreno et al., 2016; PNA tuna, 2016; Blaha, 2016). In MRAG 2017 it was quoted: “A purse seine industry representative stated that “no fleet would consider stopping dFAD fishing if it wanted to be cost effective as they are an absolute requirement for the fishery to be profitable”.</i></p> <p><i>It can be argued that just like the pole-and-line fishery is not cost effective without the bait fishery, the free school “fishery” could not exist without the FAD “fishery”.</i></p> <p><i>It would be reasonable to evaluate the impact of the entire purse seine fishery as that would be in line with the precautionary platform that MSC standards were developed on. The purse seine fishery lands 50% by weight of the total BET catch. However, the catch is mainly made up of juvenile fish, which means that the purse seine catches many more individual fish than the longline fishery. The increase in juvenile fishing mortality is illustrated in the Figure below (Harley, et al., 2014).</i></p>	<p><i>Thank you for your comment. As noted above, the MSC process allows for the PNAFTF to be assessed independently. The Assessment Team agrees with the IPNLF in determining that the impact of the PNAFTF on bigeye tuna is minimal.</i></p> <p><i>We are not in a position to discuss the comment regarding economic feasibility other than to note that it is apparently a subjective opinion, the economic situation of a particular vessel or fishing company is dependent on many varied factors (e.g., fishing skill, markets, price, weather, costs, etc), and that the free school tuna fishery does operate without the use of FADs for the four month FAD-closure period that now occurs annually from 1st July to 31st October.</i></p> <p><i>No change has been made to the report.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		 <p>Figure 1: Estimated annual juvenile and adult fishing mortality for the WCPO for the reference case. (After Harley et al. 2014)</p>	
<p>PI 2.1.1 b</p> <p>Minor primary species stock status</p> <p>continued</p>	<p>1</p>	 <p>Source: John Hampton</p> <p>In the figure above it can be seen that the catches of bigeye tuna by purse seine vessels has not decreased. Other than in 2010, it has in fact increased. The FAD closures did not have the expected effects of lower BET catches. The number of FAD sets have stayed relatively stable since 2009 (Summary report of WCPFC BET workshop, 2015).</p>	<p>Thank you for the comment.</p> <p>We do not rely heavily on the data presented in Table 15 to score bigeye tuna at 100 for PI 2.1.1 Slb. Instead, we rely on Harley et al. (2014), which indicates clearly that the the impact of free school purse seine fishing on the spawning potential of bigeye in the WCPO is essentially negligible relative to that of other fishing gears (see below, from Harley et al. 2014).</p> 

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>The BET is below the PRI for the reference case (Harley et al. 2014) and there is evidence that the existence of the UoA does hinder the recovery and rebuilding of minor primary species.</i></p> <p><i>The PCDR, on p.143, states that ‘there is evidence that the PNAFTF does not hinder the recovery and rebuilding of bigeye tuna as a minor primary species’ (and so scores the UoC at SG100 for P.I. 2.1.1). It is not clear how the CAB justifies this conclusion. The CAB seems to rely heavily on the unpublished Table 15 in the PCDR. Surely in the absence of any meaningful analysis on whether or not the 1.159% figure alone constitutes credible ‘evidence’, and without any further analysis of the data on a year-on-year basis, and in view of the very poor state of the stock, would dictate a score of no more than 80.</i></p> <p><i>The MSC clearly states that the precautionary approach should be applied implicitly throughout their Certification Requirements. According to the UN Fish Stocks Agreement (1995) the precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.</i></p> <p><i>Without any clear justification, supported by rigorous scientific analysis, the CAB cannot justify a score of 100 for this PI when following the precautionary approach.</i></p> <p><i>It is also our opinion that the contrived nature of the UoC (where the FAD fishing activities of the same vessels that belong to the UoC have been completely ignored during the assessment) and, in turn, the CAB’s scoring under SI 2.1.1b (and under various other SIs, as we’ve already pointed out) makes a mockery of the initiative within the MSC Standard to address cumulative impacts under Principle 2 (see GSA3.1.9 (MSC 2014)). Although the said initiative just relates to overlapping UoAs, it is clearly aimed at dealing with cumulative impacts and so to ignore the impacts of the FAD part of the PNA fishery would completely swamp the kind of impact that GSA3.1.9 is seeking to address.</i></p>	<p><i>With respect to the UoA, we note that the PNAFTF as defined is currently certified and this new assessment is consistent with the previous one.</i></p> <p><i>No change has been made to the report.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>IPNLF recommends that this PI be scored at SG80 or lower.</i></p> <p><i>References:</i></p> <p><i>Blaha F. 2016. To FAD or not to FAD. Retrieved from: http://www.franciscoblaha.info/blog/2016/9/22/fad-or-not-to-fad</i></p> <p><i>Harley, S., Davies, N., Hampton, J. and McKenchie, S. 2014. Stock assessment of Bigeye tuna in the Western and Central Pacific Ocean. WCPFC-SC10-2014/SA-WP-01. Majuro, Republic of the Marshal Islands 6-14 August 2014.</i></p> <p><i>Moreno, G., M. Herrera and J. Morón. 2016. To FAD or not to FAD: A challenge to the marine stewardship council and its conformity assessment bodies on the use of units of assessment and units of certification for industrial purse seine tuna fisheries. Marine Policy 73: 100-107.</i></p> <p><i>MRAG (2017) An analysis of the uses, impacts and benefits of fish aggregating devices (FADs) in the global tuna industry. A report produced for WWF-UK by MRAG Ltd. London, UK. pp. 51.</i></p> <p><i>PNA tuna. 2016. Retrieved from: http://www.pnatuna.com/marketintel46</i></p> <p><i>Summary report of the Western and Central Pacific Ocean Purse Seine Bigeye Management Workshop. Honolulu, Hawaii. 8-10 April, 2015.</i></p> <p><i>UN Fish Stocks Agreement (1995)</i></p>	
PI 2.1.2	1 & 2	<p><i>Regarding PI 2.1.2 (rather than the individual SIs), this PI states that:</i></p> <p><i>“There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch” [italics added].</i></p> <p><i>The italicised text is about minimising the mortality of unwanted catch. The CAB presents no evidence that the UoC is doing that for Bigeye.</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>We note that the requirement about minimising the mortality of unwanted catch is essentially addressed under S1e (Review of alternative measures). However, the issue here is specific to ‘unwanted catch’, and that the MSC defines ‘unwanted catch’ as the part of the catch that a fisher “did not intend to catch but could not avoid, and did not want or chose not to use.” (Box GSA8, MSC 2014).</i></p>

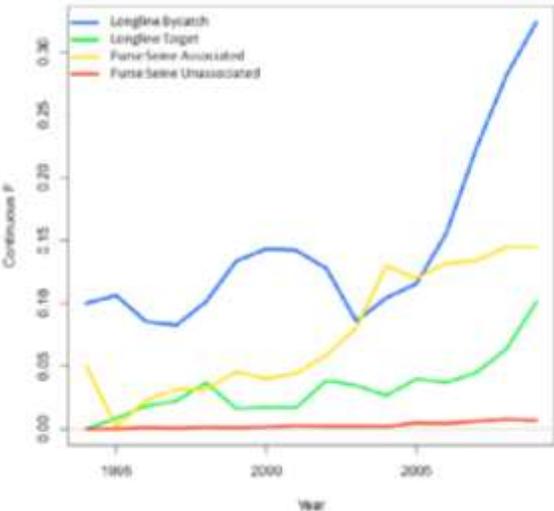
PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Therefore, based on the wording of the PI itself, which presumably is fundamental and cannot be ignored, the score for PI 2.1.2 cannot, self-evidently, be 100 (cf. the score of 100 at p.147).</i></p>	<p><i>We note that while bigeye tuna is not a key target species, the fish are retained and used. As such, they do not qualify as 'unwanted'. Also, at SG80, it is only 'main' primary species that are considered, which does not include bigeye tuna.</i></p> <p><i>Nevertheless, as detailed throughout PI 2.1.2, measures are clearly taken within the WCPFC to reduce the potential for catching bigeye tuna, including through the use of the FAD closure period which is aimed specifically at reducing juvenile bigeye tuna mortality, but also specifically within the PNAFTF through the requirement to not fish within 1nm of a FAD).</i></p>
PI 2.1.2(a)	1	<p><i>The PCDR, at p.145, states that:</i></p> <p><i>'Any sets that include a whale shark or other object acting as a FAD, as well as sets which include FAD-associated indicator species (e.g., oceanic puffer fish, ocean triggerfish and drummer) even if no FAD or objects that act as FADs are observed in the net, are deemed to have come from a FAD set. As sets such as these are ineligible to go forward to carry the MSC logo according to PNA rules, this minimizes incentives to target FADs and objects that act as FADs, helping to keep the bigeye tuna catches in the UoA to around 1%.'</i></p> <p><i>From this it seems like a set is deemed to be a FAD set if there is any doubt. This is in direct contradiction to what the PCDR states later on the very same page (in relation to SI 2.1.2b) (and at p.53 in the paragraph starting 'It is important'):</i></p> <p><i>'it is important to note that observers are specifically instructed not to change the set designation once made (i.e., observers are instructed not to mark the set type in the observer report as 'free school' upon setting, but then change it to 'FAD-set' if, for example, a whale shark, semi-submerged log or other debris is found in the catch). This allows for a precautionary assessment of the impact of the PNAFTF, in that it means this MSC assessment is able to consider all catches that were designated as free school upon setting, not just a subset that were</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>The comment has usefully identified that a clarification was needed in the text, noting that whilst observers are instructed not to change the set designation, they are instructed to note separately where FADs (as defined previously) are taken in a set. Thus, the catch data collected for the 'free school' fishery allow for a precautionary assessment of the total impact of the PNAFTF, but sets with FADs of FAD-associated species included are ineligible for proceeding to the MSC line.</i></p> <p><i>There is no 'confusion', but a revision has been made to the report in Section PI 2.1.2 Sla to better describe the approach taken.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>confirmed as being 'free school' at some point after hauling was completed.'</i></p> <p><i>This seems to indicate that contrary to the assertion of the CAB, there is not 'a strategy' in place. Instead, there is confusion. Furthermore, at p.152 in relation to SI 2.2.2a, the PCDR refers to the same system that it calls a 'strategy' for SI 2.1.2a as only a 'partial strategy' for SI 2.2.2a. So, at best, it can only be said that there is 'a partial strategy' in place, meriting a score of only 80 for SI 2.1.2a (instead of the score of 100 assigned to this SI on p.145 of the PCDR).</i></p> <p><i>More generally, it is hard to believe that after more than 5 years of operation of the UoC, there is still a lack of clarity about how sets are to be designated by observers. If the CAB is confused, as seems to be the case, we would expect that observers would be confused too. This does not bode well for the credibility of the separation of MSC-certified tuna from non-certified tuna.</i></p>	<p><i>With regard to the difference between the strategy for PI 2.1.2 and the partial strategy for PI 2.2.2, it is noted that the MSC indicates that a 'strategy' "should be designed to manage impact on that component specifically", whereas a partial strategy "may not have been designed to manage the impact on that component specifically." In this regard, the Assessment Team is content that the measures in place comprising a strategy are focused on primary species rather than secondary species, thus justifying the difference in score.</i></p>
PI 2.1.2(c)	2	<p><i>The PCDR, at p.146, states that:</i></p> <p><i>'Observer coverage in the PNAFTF is maintained at 100% (requirement is for 100% coverage, but some data are yet to be processed), and observers are trained and required to monitor the type of set undertaken on each occasion to a high level of detail (e.g., FAD, log, other floating object, whale shark).'</i></p> <p><i>This, and several similar references within the PCDR (see, amongst others, pp.144, 152 and 153), suggest confusion about how a FAD is defined in the UoC. Indeed, the PCDR seems to contain no definition of 'FAD' for the purposes of the UoC. It is true that the WCPFC has a definition (set out at pp.82–83 of the PCDR) but this is not expressly adopted for the purposes of the UoC. The CAB needs to introduce a definition of 'FAD' and then apply it systematically throughout the PCDR's successor documents. The apparent absence of a clear definition of 'FAD' for the purposes of the UoC means that a score of</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>The key issue for the UoA is that only tuna that are confirmed as being free school are eligible to carry the MSC logo. In this regard, it has been clarified in the text that the definition of a FAD used in the PNAFTF assessment is as defined by the WCPFC (2009b), (i.e., "any object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs and whale sharks floating on or near the surface of the water that fish may associate with"), and that 'free school' is only applicable when setting occurs ≥1 nm from such objects. PNA also apply traceability checks to ensure that catches are not eligible to go forward to the MSC line when such objects are not identified in the net upon hauling even if not seen initially, and when FAD-associated species are not found in the net even if no FAD is seen.</i></p> <p><i>The Assessment Team considers that the use of the WCPFC definition for 'FAD' is appropriate, and notes that enforceability is a key concern for any fisheries management measure, generally. An edit has been made to the</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p>100 is not merited for this SI (cf. the score of 100 at p.146).</p> <p>More generally, the apparent absence of a clear definition raises serious questions about what practices observers are expected to follow when designating sets as 'FAD' or 'FAD-free'.</p>	<p>report to clarify the FAD definition.</p>
<p>PI 2.2.2d</p> <p>Shark finning</p>	<p>1</p>	<p>IPNLF does not agree that shark finning is not taking place on board the vessel, with the same skipper, same crew on the same day. According to the observer reports, presented at the TCC meetings, 314 and 789 cases of shark finning were reported for 2014 (TCC, 2015) and 2015 (TCC, 2016) respectively for the purse seine fishery. Again, it seems irrational to separate the FAD sets from the free-school sets; shark finning is an offense which should not be minimised by artificially separating these two. If PNA member countries were serious about sustainable fishing it should be shown throughout its activities. These finning activities are not rare and isolated as was claimed by the assessors. The finning is systematic. Unfortunately, the evidence that PNA member countries were prosecuting vessel masters for shark-finning violations is not publically available and therefore not transparent.</p> <p>IPNLF recommends that this score should be reduced to less than SG60, FAIL</p> <p>References:</p> <p>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</p> <p>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</p>	<p>Thank you for the comment.</p> <p>The data that are referred to in the comment are for the entire WCPFC purse seine fishery, of which the UoA forms a part. As noted in the assessment report, SPC provided observer data showing that shark finning does occur at a low level in the PNAFTF. When such events are noted, enforcement action is taken.</p> <p>We note that specific information on specific prosecutions is not produced in a comprehensive, publicly available format. However, information on individual prosecutions is available in some cases from local media, and from the Greenpeace blacklist site - http://blacklist.greenpeace.org. While this situation is not ideal (such that it doesn't meet SG100), compliance and implementation information on shark measures is also submitted by the PNA to the WCPFC (e.g., as detailed in Appendix 2 of WCPFC 2016g). This supplements the information available in the TCC documents referred to in the comments.</p> <p>However, we have added a Recommendation that for each MSC audit, 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).</p>

PI	Nature of Comment	Justification	Assessment Team Response							
PI 2.1.2(e)	2	<p>The PCDR, at p.147, states that: 'Discarding of tuna species is not permitted in the PNAFTF, and so this SI is not relevant.'</p> <p>Following the <u>precautionary approach</u>, should evidence not be produced by the CAB that discarding is not happening instead of relying on the presence of a regulation or permit condition that prohibits discarding of tuna? If relying on a compliance measure as evidence surely some analysis of compliance with such a measure should be presented to substantiate the claim.</p>	<p>Thank you for the comment.</p> <p>Since February 4th 2013, discarding as a practice has not been permitted in international and EEZ waters of the WCPFC CA between 20°N and 20°S. Nevertheless, fish that are damaged during the catching process, or fish that are caught on the final set of a trip for which there is insufficient well space, may be discarded (WCPFC CMM 2015-01, and CMM 2012-01 as its predecessor). A change has been made to the report to reflect the consideration of alternative measures for discarding of skipjack tuna and yellowfin tuna as primary species in PI 2.1.2 SIe.</p>							
PI 2.1.3b Information adequacy – Minor species	1	<p>IPNLF noted the extent of violations of catch recordings in the observer reports presented to TCC in 2014, 2015 and 2016. For example, for around 50% of the trips the bycatch discards are not recorded.</p> <p>Table: The percentage of trips where observers noted violations of catch recordings, expressed by the type of issue and the year when it was reported in the Report for the Regional Observer Programme.</p> <table border="1"> <thead> <tr> <th>Issue</th> </tr> </thead> <tbody> <tr> <td>Inaccurately record retained "Target Species" in the Vessel Logs [or weekly reports]</td> </tr> <tr> <td>Inaccurately record "Target Species" discards</td> </tr> <tr> <td>Record target species inaccurately [e.g. combine bigeye/yellowfin/skipjack bycatch]</td> </tr> <tr> <th>Not record bycatch discards</th> </tr> <tr> <td>Inaccurately record retained bycatch Species</td> </tr> <tr> <td>Incorrectly record discarded bycatch species</td> </tr> </tbody> </table> <p>The question is whether the quantitative information is adequate to</p>	Issue	Inaccurately record retained "Target Species" in the Vessel Logs [or weekly reports]	Inaccurately record "Target Species" discards	Record target species inaccurately [e.g. combine bigeye/yellowfin/skipjack bycatch]	Not record bycatch discards	Inaccurately record retained bycatch Species	Incorrectly record discarded bycatch species	<p>As noted in the report, the catch data for the PNAFTF (as presented in Table 15) were provided to the Assessment Team by the Secretariat for the Pacific Community (SPC), as recorded and reported by independent observers.</p> <p>These independently collected data are entirely adequate to estimate the impact of the UoA on minor secondary species.</p> <p>No change has been made to the report.</p>
Issue										
Inaccurately record retained "Target Species" in the Vessel Logs [or weekly reports]										
Inaccurately record "Target Species" discards										
Record target species inaccurately [e.g. combine bigeye/yellowfin/skipjack bycatch]										
Not record bycatch discards										
Inaccurately record retained bycatch Species										
Incorrectly record discarded bycatch species										

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>estimate the impact of the UoA on minor secondary species with respect to status.</i></p> <p><i>IPNLF recommends a score of SG80 or lower instead of the score of SG100 that was awarded by the CAB.</i></p> <p><i>References:</i></p> <p><i>Report for the Regional Observer Programme (6th). Technical Compliance Committee. 10th regular session. Pohnpei, Federated States of Micronesia. 23-30 September 2014. WCPFC-TCC10-2014-RP02.</i></p> <p><i>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</i></p> <p><i>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</i></p>	
PI 2.3.1a	2	<p><i>The PCDR, at p.158, states that:</i></p> <p><i>'There are no national and/or international requirement that set limits for the ETP species that interact with the PNAFTF. This SI is therefore considered to be not relevant.'</i></p> <p><i>Yet the CAB seems to present no analysis, anywhere in the PCDR, of national requirements on a State-by-State basis. Based on this, we argue that the CAB is not in a position to know that there are no national requirements. Furthermore, the national requirements are not only those of the coastal States; they are also those of the flag States. So to state that this SI is not relevant, the CAB will need to carry out a survey of the national requirements of the PNA coastal States and also of any flag States operating in the UoC. It is not reasonable to state that a</i></p>	<p><i>It is correct that the report does not report a state-by-state analysis of ETP species designations, but our analysis (undertaken during and post the site visit) indicated that there are no national and/or international requirement that set limits for the ETP species that interact with the PNAFTF. For example, our analysis indicated that the PNA do not apply any limits (i.e., numerical limits on permitted bycatch) to ETP species, and we could not identify any species/stocks occurring within the fishery that are subject to US Endangered Species Act limits for US vessels operating in the fishery. The stakeholder has presented no information that contradicts this finding, and so no change has been made.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p>coastal State's rules will predominate; if the flag State has rules that are more precautionary, it can potentially apply those rules to its vessels. In conclusion, the CAB is not in a position to state that the SI is not relevant.</p>	
<p>PI 2.3.1 b</p> <p>Direct effects</p>	<p>1</p>	<p>The PCDR at p.159 states that:</p> <p>'The WCPO unassociated purse seine fishery is estimated to take a small proportion ($\approx 3\%$) of the overall catch (Figure 27). Therefore, there is a high degree of confidence that there are no significant detrimental direct effects of the PNAFTF on silky shark, and the fishery meets the SG100 level of performance for this species.'</p> <p>The CAB does not justify in scientific terms how it equates the 3% figure with 'a high degree of confidence that there are no significant detrimental direct effects of the PNAFTF on silky shark'. In the absence of any such justification, and when following the <u>precautionary approach</u>, it is highly questionable whether such a conclusion is justified, especially given the 'limited understanding' (p.60) we have of their biology and ecology and the knowledge we have of the overfished status of the stock.</p> <p>Based on the above, IPNLF recommends a score of SG80 or less for SI 2.3.1(b) for Silky Shark.</p> <p>IPNLF further argues that the FAD and Free school sets are intrinsically linked and the precautionary approach dictates that the combined impact on the ETP species should be considered. The CAB noted that the FAD-associated purse seine fishery has an impact on the silky shark stock. Around 27,500 and 25,513 silky sharks were caught in 2014 and 2015 respectively (TCC, 2015&2016). These sharks are mostly juvenile.</p> <p>IPNLF recommends that this provides additional justification to lower the score for this SI to SG80 (Silky Sharks)</p> <p>Regarding whale sharks the intrinsic link between associated and</p>	<p>Thank you for the comment.</p> <p>Silky shark</p>  <p>We note Figure 15 from Rice & Harley (2013), reproduced above, which shows estimated fishing mortality by fleet for their reference case model. Their report also states:</p> <p>"The purse seine observer data indicates that the equatorial purse-seine fisheries catch larger (and far fewer) silky sharks in the unassociated sets than the associated sets."</p> <p>and</p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>unassociated fishing shows to be even more explicit. Once a whale shark is landed on deck then the set is an associated set. The purse seine fishery is prohibited to set on whale shark associated schools. However, whale sharks are still being landed on a regular basis; 37, 84 and 128 for 2013, 2014 and 2015 respectively (TCC, 2014, 2015, 2016).</i></p> <p><i>IPNLF recommends to lower the score to SG60 (Whale sharks)</i></p> <p><i>During 2015, a total of 30 False Killer Whales was reported dead from purse seining (TCC, 2016), which is a lot more than 4-6 as indicated by the assessor.</i></p> <p><i>IPNLF agrees that although at this level of mortality the direct effects are likely to not hinder recovery of False Killer Whales, a score of SG80 cannot be justified and it should be lowered to SG60.</i></p> <p><i>It should further be noted that observers reported that during 19%, 22.2% and 48.6% of trips Species of Special Interest were landed on deck in 2013, 2014 and 2015, respectively. (TCC, 2014, 2015 and 2016).</i></p> <p><i>References:</i></p> <p><i>Report for the Regional Observer Programme (6th). Technical Compliance Committee. 10th regular session. Pohnpei, Federated States of Micronesia. 23-30 September 2014. WCPFC-TCC10-2014-RP02.</i></p> <p><i>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</i></p> <p><i>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</i></p>	<p><i>“The non-target LL is by far the largest component of the overall F, increasingly rapidly from the assumed levels of 0.1 in 1995 to a high of over 0.3 in 2009. The next highest component of F is the associated purse seine fishery which increases to approximately 0.125 by 2009, which on its own is above the estimated FMSY = 0.084. Compared to the longline fleets, the associated purse seine fishery has a disproportionate effect on the overall fishing relative to the number of fish it catches due to the fact that it catches predominantly juveniles.”</i></p> <p><i>Essentially, Rice & Harley (2013) clearly indicate that the unassociated purse seine fishery (representing the UoA) is not causing significant detrimental effects on silky shark. No changes have been made to the report.</i></p> <p><i>Whale shark</i></p> <p><i>The assessment of the PNAFTF is precautionary in that the impact of the free school fishery is considered to include all catches from any set that is designated as ‘free school’ upon setting. This means that the catch data include whale sharks where these are unseen upon setting but which are subsequently pursed in the net, but interactions as reported in the data also include instances where the whale sharks are observed outside the net. SPC (2010) estimated the mortality rate of whale sharks taken in purse seines to be 12%. Using data reported by Clarke (2015), of those animals for which a fate was recorded, 11.3% of whale sharks (63 from 555 animals) were reported dead by purse seine observers in the WCPFC-CA from 2010-2014. No change has been made to the report.</i></p> <p><i>False killer whale</i></p> <p><i>We note that the data presented for false killer whale are for the entire WCPFC purse seine fishery, of which the PNAFTF forms only a part. The data presented in the report indicate that the PNAFTF is responsible for 4-6 false killer whale deaths per year. This allows the fishery to meet SG80. No change has been made.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
<p>PI 2.3.1 Indirect effects</p>	<p>1</p>	<p>One of the indirect effects to be considered under this SI is whether pollution takes place. The observer reports indicate that the disposal of metals, plastics, chemicals or old fishing gear happened during 48.8%, 51.9% and 36.2% of the fishing trips observed in 2013, 2014 and 2015, respectively. Even oil is discharged in around 10% of the fishing trips.</p> <p>IPNLF suggests a score of less than SG80, as the indirect effects can't be considered to be highly likely not to create unacceptable impacts.</p> <p>References:</p> <p>Report for the Regional Observer Programme (6th). Technical Compliance Committee. 10th regular session. Pohnpei, Federated States of Micronesia. 23-30 September 2014. WCPFC-TCC10-2014-RP02.</p> <p>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</p> <p>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</p>	<p>Thank you for highlighting the Richardson et al. (2015) report.</p> <p>We note that the purse seine fleet is the subject of the report, in part because there are data available, and that the first initiative that was identified as being needed was specific to the monitoring, reporting and enforcement of pollution violations by all types of fishing vessels, especially longliners.</p> <p>We have added text to PI 2.3.1 SIc, and introduced a Recommendation that, for the PNAFTF fleet, the client work to implement the second and third initiatives identified in the Richardson et al. (2015) report, which are as follows:</p> <p>2) A regional outreach and compliance assistance programme on marine pollution prevention for fishing vessel crews, business operators and managers; and</p> <p>3) Improvements in Pacific port waste reception facilities to enable them to receive fishing vessel wastes on shore.</p>
<p>PI 2.3.2 a</p>	<p>2</p>	<p>The PCDR, at p.162, states that:</p> <p>'There are no national and/or international requirement that set limits for the ETP species that interact with the PNAFTF. This SI is therefore considered to be not relevant.'</p> <p>As per our comment for SI 2.3.1(a) the CAB does not seem to present any analysis, anywhere in the PCDR, of national requirements on a State-by-State basis. Based on this, we argue that the CAB is not in a position to know that there are no national requirements. Furthermore, the national requirements are not only those of the coastal States; they</p>	<p>Please see our response against PI 2.3.1 SIa, above.</p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p>are also those of the flag States. So to state that this SI is not relevant, the CAB will need to carry out a survey of the national requirements of the PNA coastal States and also of any flag States operating in the UoC. It is not reasonable to state that a coastal State's rules will predominate; if the flag State has rules that are more precautionary, it can potentially apply those rules to its vessels. In conclusion, the CAB is not in a position to state that the SI is not relevant</p>	
<p>PI 2.3.2 c Management strategy evaluation</p>	<p>1</p>	<p>IPNLF agrees that the measures are likely to work based on plausible arguments. However, based on the information provided by the observer reports (TCC, 2014, 2015 and 2016), there is still a lot of interaction between the fishery and ETP species. There is no objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.</p> <p>IPNLF recommends a score of SG60.</p> <p>References:</p> <p>Report for the Regional Observer Programme (6th). Technical Compliance Committee. 10th regular session. Pohnpei, Federated States of Micronesia. 23-30 September 2014. WCPFC-TCC10-2014-RP02.</p> <p>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</p> <p>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</p>	<p>Thank you for the comment.</p> <p>The assessment report outlines the strategy in place to manage and minimise impacts of the fishery on ETP species. Although it is the stakeholder's opinion that the fishery only meets SG60 for SIc, the Assessment Team considers that the fishery meets the SG80 requirements and no evidence is presented to the contrary.</p> <p>No change has been made to the report.</p>
<p>PI 2.3.2 d</p>	<p>2</p>	<p>IPNLF agrees that there is some evidence that measures are being</p>	<p>Thank you for the comment.</p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>implemented successfully for all ETP species, including Silky Sharks. Observer data indicate that there is still a high retention rate of silky shark; 1,022 and 352 for 2014 and 2015, respectively (TCC, 2015 and 2016). Also, very low survival rates of discarded silky sharks are recorded by the same observers. Research on post-release survival showed that only up to 20% of the sharks brought on board would survive if released quickly following good practices (Filmalter et al. 2015). It can therefore be assumed that in the absence of 'good practices' the survival rate will be a lot lower.</i></p> <p><i>IPNLF recommends that the SG 100 score for silky sharks should be lowered to SG60.</i></p> <p><i>References:</i></p> <p><i>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</i></p> <p><i>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</i></p>	<p><i>The TCC 2015 and TCC, 2016 data are for silky shark retained in all purse seine operations within the WCPFC area (i.e., including FAD sets), not just the PNAFTF. As such, these data do not accurately reflect the impact of the UoA alone, which is the requirement for assessing Principle 2. We continue to be content that the PNAFTF meets SG100, and no changes have been made to the report.</i></p>
<p><i>PI 2.3.2e</i></p> <p><i>Review of alternative measures to minimise mortality of ETP Species</i></p>		<p><i>IPNLF agrees that there is a regular review of the potential effectiveness and practicality of alternative measures to minimise mortality of ETP species. However, there is not a biennial review, as SC meetings only take place once a year.</i></p> <p><i>IPNLF suggests that this SI is scored at SG80.</i></p>	<p><i>Thank you. We note that the SG100 requirement is for biennial reviews (i.e., occurring once every two years). The fishery meets this requirement.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
PI 2.3.3a	1	<p><i>The PCDR states that:</i></p> <p><i>'For silky shark, the recent assessment (Rice & Harley 2013) indicated that WCPO unassociated purse seine fishery takes a small proportion (≈3%) of the overall catch of WCPO silky shark (Figure 27). Post-release mortality/survival data have been collected, and research is ongoing to determine how to improve the post-release survival rate (e.g., Muir et al. 2013). For silky shark, then, quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of silky shark. Therefore, silky shark scores 100 for this SI.'</i></p> <p><i>The CAB does not justify in scientific terms how it equates the 3% figure with 'quantitative information ... available to assess with a high degree of certainty ... the consequences for the status of silky shark'. In the absence of any such justification, it is highly questionable whether the CAB can reach such a conclusion, especially given the 'limited understanding' (p.60) we have of their biology and ecology and the knowledge we have of the overfished status of the stock. The precautionary approach should apply and the score for Silky shark should be reduced from 100 to 80.</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>The PI 2.3.3 SIa requirement at SG100 is "Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species"</i></p> <p><i>The Assessment Team is content that the data available on silky shark (e.g, catch quantities, post-capture mortality rate, and the stock assessment showing the relative impact of different fisheries) clearly meet this requirement.</i></p> <p><i>No change has been made to the report.</i></p>
PI 2.4.2 Habitats management strategy	1	<p><i>ISSF in a best-practice guidance document produced for the tuna purse seine industry states that: "thousands of Fish Aggregating Devices (FADs) are built and deployed by purse-seine vessels at sea each year and virtually all include old netting in their construction. FADs can produce unwanted bycatch due to sharks and/or turtles becoming entangled in the netting that is used to make FADs. To prevent "ghost fishing", non-entangling FADs need to be designed and adopted by the fishing industry" (IOTC-2013-S17-INF02).</i></p> <p><i>Although the PNA UoAs exclude fishing on FADs, the same vessels that fish on unassociated schools deploy thousands of FADs annually. It is well-known that lost FADS can have serious negative ecosystem impacts. Using the PNA's estimate of 80,000 dFADs deployed per year</i></p>	<p><i>Thank you for this comment and extensive analysis. We agree that the issue was raised at the site visit, but as FADs are not used in the UoA, the impact of FADs was not considered in scoring the UoA.</i></p> <p><i>No change has been made to the report.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>(Maurice Brownjohn, Commercial Manager of the PNA said that the current PNA estimate, based on declarations, is that 80,000 FADs are deployed a year; WCPFC, 2016), and the fact that only 15,000 dFADs are actually set on, then up to 65,000 are abandoned, lost, or discarded with unknown impacts as ghost fishing gear and marine litter.</i></p> <p><i>The FAO Technical Guidelines for Responsible Fisheries - Fishing Operations – 1, Annex III, includes the following proposed system for the marking of fishing gear: 6. Fish Aggregating Devices 6.1 The authorization to fish should also include conditions in relation to the deployment of fish aggregating devices and, in addition to carrying a mark to identify ownership of a FAD, the authorization should relate to the: a) type of FAD; b) location of the allocated datum geographical position; and, c) the fishing activities permitted at the FAD. 6.2 The responsibility for recovery of drifting FAD's should lie with the owner. 6.3 The loss of a FAD (drifting or anchored) should be treated in the same way as lost or abandoned fishing gear.</i></p> <p><i>In the Indian and Atlantic Oceans, an estimated 10% of dFAD deployments result in a beaching event (Maufroy et al. 2015). As to ghost fishing, dFADs also entangle vulnerable marine fauna, including sea turtles and sharks. In the Indian Ocean, it is estimated that entanglement mortality of silky sharks (480 000–960 000 silky sharks per year) was 5–10 times that of the known bycatch of this imperilled species from the region's purse-seine fleet (Filmhalter, 2013). No such estimates are available for the WCPO, but there is evidence to suggest that dFADs deployed by the vessels participating in the MSC certified unassociated purse seine fishery contribute to the ghost fishing of endangered, threatened, and protected species, in particular sharks and sea turtles in the region. Many purse seine fleets have begun to voluntarily use non-entangling FADs, and three RFMOs (ICCAT, IOTC and IATTC) are now requiring a transition to such FADs. No such transition measures have however been adopted at WCPFC yet (Murua et al., 2016).</i></p> <p><i>Balderston and Martin (2015) have found that lost dFADs used by the</i></p>	

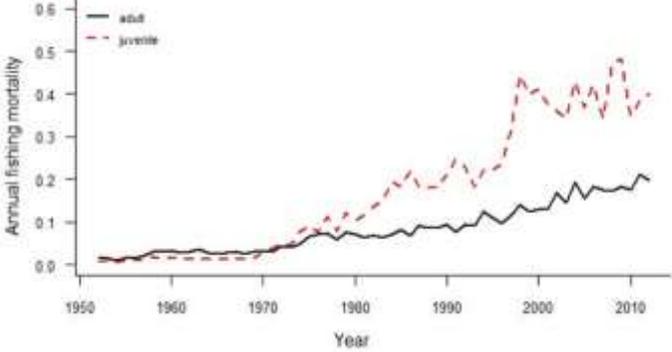
PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>purse seine fleet in the Indian Ocean can have major impacts when becoming beached on reefs and other sensitive habitats. It is well-known that purse seiners that are involved in the certified PNA fishery deploy FADs as part of their fishing operations. Unlike the best practice measures applied in many other purse seine fisheries there are no requirements, either at the national or regional level on minimising the number of FADs deployed or insisting on the use of non-entangling FADs only.</i></p> <p><i>The MSC Principles and Criteria for Sustainable Fishing include criteria that relate to ghost fishing and gear loss, including that the fishing operation shall:</i></p> <p><i>Make use of fishing gear and practices designed to avoid the capture of non-target species and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;</i></p> <p><i>Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas; and</i></p> <p><i>Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.</i></p> <p><i>These Criteria are operationalised in the MSC standard throughout Principle 2. For example, when determining the fishing operation's impact on primary, secondary and ETP species, assessment teams are required to consider unobserved, in addition to observed fishing mortality and impacts. The guidance associated with this clause stipulates that unobserved fishing mortality can include (but is not limited to) ghost fishing. In version 2.0 of the FCR, assessment teams are required to consider whether fisheries review measures to minimise mortality of unwanted catch. This also includes consideration of unobserved mortality, such as that caused by ghost fishing.</i></p> <p><i>The impacts of gear loss on habitats are considered under the Habitats</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>components. In particular, there is Guidance on the Habitats Management PI (2.4.2) that indicates that in order for a fishery to score a 100, a management strategy should be in place even for gears that do not regularly contact benthic habitats since gear loss or unexpected seafloor impacts could occur. In addition, in the Ecosystem PIs, the team need to consider how the fishery impacts the wider ecosystem structure and function. Indirect effects of lost gear and other operational waste that are not considered directly under the primary, secondary and ETP PIs are considered here.</i></p> <p><i>The CAB chose to ignore this important aspect of the fishing operations on the PNA fishery and its impacts despite it also being raised during the site visit stage of stakeholder consultation.</i></p> <p><i>Without due consideration and evaluation of the issues raised above a score of SG100 cannot be justified for this PI. IPNLF recommends a score of SG80 or lower for this PI.</i></p> <p><i>References</i></p> <p><i>Balderston, S. D., L. E. C., Martin. 2015. Environmental impacts and causation of 'beached' Drifting Fish Aggregating Devices around Seychelles Islands: a preliminary report on data collected by Island Conservation Society. IOTC-2015-WPEB11-39.</i></p> <p><i>Cabral, R.B., Aliño, P. M. and Lim, M. T. 2014. Modelling the impacts of fish aggregating devices (FADs) and fish enhancing devices (FEDs) and their implications for managing small-scale fishery. ICES J. Mar. Sci. 71 (7): 1750-1759.</i></p> <p><i>FAO Technical Guidelines for Responsible Fisheries – Fishing Operations – 1 (Annex III). Rome, FAO. 2012.</i></p> <p><i>Filmalter, J. D., Capello, M., Deneubourg, J. L., Cowley, P. D., & Dagorn, L. (2013). Looking behind the curtain: quantifying massive shark mortality in fish aggregating devices. <i>Frontiers in Ecology and the Environment</i>, 11(6), 291-296.</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Maufroy, Alexandra, et al. "Large-Scale Examination of Spatio-Temporal Patterns of Drifting Fish Aggregating Devices (dFADs) from Tropical Tuna Fisheries of the Indian and Atlantic Oceans." PloS one 10.5 (2015): e0128023.</i></p> <p><i>IOTC-2013-S17-INF02, 2013. ISSF Guide to non-entangling FADs.</i></p> <p><i>WCPFC. 2016. First Meeting of the FAD Management Options – Intersessional Working Group Summary Report. SC12-WCPFC12-03 (WCPFC12-2015 - 22_Rev2).</i></p>	
<p>P3.1.1 a</p> <p><i>Compatibility of laws or standards with effective management.</i></p>	<p>1 & 2</p>	<p><i>The CAB score is SG100. IPNLF agrees that the WCPFC has in place a regional legal system and a framework for cooperation with other parties, where necessary to deliver management outcomes consistent with MSC Principals 1 and 2. However, there are two issues here we would like to comment on.</i></p> <p><i>Firstly, this scoring issue ask whether there are “national” legal systems in place that deliver management outcomes consistent with MSC Principals 1 and 2. Regarding the national legislation of the individual parties to the Nauru Agreement, the CAB makes the following assertions in its ‘justification’:</i></p> <p><i>‘each member state [of the WCPFC] (and those part of the PNA) has national legislation inclusive of fisheries laws which are binding legal instruments consistent with the principles and provisions of UNCLOS, UNFSA and CBD’</i></p> <p><i>‘The Nauru Agreement is ... integrated into the legal (fisheries) framework at a National level’</i></p> <p><i>‘the legally binding adoption of the precautionary approach ... is incorporated into ... national laws ... of each member of the PNA (see WCPFC Articles. 5 & 7)’</i></p> <p><i>‘... entrenched in the principle fisheries national legislation of each country, conservation objectives are stated (noting that each country</i></p>	<p><i>Thank you for your comments.</i></p> <p><i>Regarding access to information, many of these documents were sourced by the Team independently, but the Assessment Team was also provided with the relevant national legislation on request. Stakeholders are also able to request information, and so the comments related to them not being available is incorrect.</i></p> <p><i>Also, we provided Table 18, showing the extent of national and other pertinent documents that were available, and below Table 18 we have listed the most pertinent national documents – mainly national fisheries Acts and Titles as well as legislation related to Marine resources. These documents are extensive, and so, noting the difficulty that stakeholders had in finding the information, for ease of access they have now been made available through a Drop Box (access is available upon request through the PNAO) if you require further reading. Note also that the availability / access to National Legislation of the PNA parties is a national responsibility – none of these documents (Acts, Titles, regulations, management plans) are NOT available and have to be available to the public for these instruments to be enacted. We have now provided examples of National Legislation in the body of the PCDR – while not exhaustive these demonstrate that at National level PNA members are committed to both regional and fishery specific objectives (long and short-term). This was demonstrated by PNA on certification where the Parties endorsed the condition of certification (6) relating to short term</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>has drafted fisheries legislation that differs in style and wording but which captures the ecosystem context either explicitly or implicitly).</i></p> <p><i>'The texts of the legislation varies between each PNA member, but is nevertheless consistent in legal interpretation as described for SG80'</i></p> <p><i>The only evidence that the CAB appears to provide in respect of those assertions is the following: section 3.7.5 of the PCDR (at p.76); a reference to Banks et al. 2011; and a reference at p.185 to 'National Fishery Acts (FSM 2002, Nauru 1997, PNG 1998, RMI 1997, Solomons 2015, Tuvalu 2008, Tokelau 1997/2016)'. This fishery has been certified for more than 5 years and still there is no public domain where these critical documents are accessible. The CAB's references to the national legislations "National Fishery Acts (FSM 2002, Nauru 1997, PNG 1998, RMI 1997, Solomons 2015, Tuvalu 2008, Tokelau 1997/2016), PNA national fishery management plans (tuna), PNA National Plans of Action (IUU, Shark) and EAF Risk Assessments" could not be traced.</i></p> <p><i>This evidence is totally inadequate for the purpose of supporting the assertions made. In particular: section 3.7.5 does not consider the detail of national legislation; Banks et al. 2011 has useful information (e.g. p.87) but none which can back up the above assertions – and it was published more than 5 years ago (over which time national legislation may have changed); and the reference to 'National Fishery Acts' at p.185 leads to nothing in the PCDR's main reference list. One would expect to see, at the very least, a table of relevant provisions of the current national legislation. There is no such table.</i></p>	<p><i>objectives on bycatch and ecosystem management. Note also that through the WCPFC, short term objectives to achieve the desired outcomes for non-target species (Principle 2), are guided by the results of scientific data analysis and assessment. These analyses identify whether main non-target species (retained, bycatch, endangered, threatened and protected species) are highly likely to be within biologically based limits or if outside such limits support a short term objective of identifying and implementing mitigation measures and strategies consistent with ensuring that the unit of certification does not hinder recovery and rebuilding, or create disruption to the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</i></p> <p><i>It is noted that under Condition 6 of the first certification period (Banks et al. 2011), the PNA management undertook that measures that reflect principles 1 and 2 would be explicitly incorporated into the fishery's management system. Further the PNA agreed to actively collaborate with scientific monitoring activities that underpin such studies on P1 and P2 species, including where serious or other important issues are identified in this research and monitoring of relevance to the unit of certification, that appropriate management actions are taken in the short term to reduce impacts. Noting also that objectives within CMM2012-01 encompass all tropical tuna species, and hence include yellowfin and bigeye tuna".</i></p> <p><i>The text has been modified but no change has been made to scoring of Sla.</i></p>
<p>P3.1.1 a</p> <p>Compatibility of laws or standards</p>	<p>1 & 2</p>	<p><i>A further point is that the MSC Standard, at SA4.3.2, SA4.3.3 and SA4.3.4 (pp.170–172), sets out what is needed for a UoA to meet SG60, SG80 and SG100 under SI 3.1.1a (see also pp.474–476 of the MSC Standard). The requirements are precise. The CAB seems to have</i></p>	<p><i>See the Web site: http://www.wcpfc.int/ for reference to membership of WCPFC. All PNA members are full members of WCPFC. Only Tokelau is a participating non-independent territory (and whose status is reported in the P3 text and section 3.4.2).</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
with effective management (cont.)		<p><i>made no attempt to go through these requirements. For example, for SG60, one of the requirements (SA4.3.2.4) is that:</i></p> <p><i>'The flag state of participants in the UoA shall have at least cooperating non-member status within a relevant sub-regional or regional fisheries management organisation or other bilateral/ multilateral arrangement, if such exists.'</i></p> <p><i>The CAB, in its 'justification', has made no attempt to see whether '[t]he flag state of participants in the UoA' has 'at least cooperating non-member status' within the WCPFC. It may be that all relevant flag States do but, if so, it needs to be demonstrated. It is emphasised that this is just one example of what is required under SA4.3.2, SA4.3.3 and SA4.3.4.</i></p> <p><i>Secondly, the question should be asked whether these legal systems are "effective" to deliver management outcomes consistent with Principles 1 and 2. The contrary to that is clearly evidenced by for example the depletion of the bigeye tuna resource. According to Hampton et al. (2004) the bigeye tuna stock was around the MSY level during that time, but there were already signs in 2004 of overfishing. "On the basis of all of the results presented in the assessment, we conclude that maintenance of current levels of fishing mortality carries a high risk of overfishing. Should recruitment fall to average levels, current catch levels would result in stock reductions to near and possibly below MSY-based reference points. Reduction of juvenile fishing mortality in the equatorial regions would have significant benefits for both the bigeye tuna stock and the longline fishery."</i></p> <p><i>A CMM was first initiated in 2008 to address bigeye overfishing, However, the latest assessment of BET (Harley et al., 2014) found the stock to be severely overfished and overfishing was still taking place. The BET catches of the purse seine fishery were supposed to be reduced by the seasonal FAD closure. The figure below clearly illustrates that the fishing mortality of both the adult (mainly longline fishery) as well as the juvenile BET (purse seine) increase d steadily</i></p>	<p><i>Viz.</i></p> <p><i>Members: Australia, Canada, China, Cook Islands, European Union, Republic of Fiji, France, Indonesia, Japan, Kiribati, Marshall Islands, Fed.States of Micronesia, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Solomon Islands, Tonga, Taiwan Province of China, Tuvalu, United States of America, Vanuatu.</i></p> <p><i>Participating Non-Independent Territories: American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, Wallis and Futuna.</i></p> <p><i>Participating Non-Member States: Belize, Democratic People's Republic of Korea, Ecuador, El Salvador, Mexico, Senegal, St Kitts and Nevis, Panama, Thailand, Vietnam.</i></p> <p><i>With regard to bigeye tuna, this is not pertinent to P3 explicitly and is discussed elsewhere in the PCDR (P1 and P2). With regard to the FAD closures, this is covered by the PNA through the third arrangement implementing the Nauru Agreement (September 2010). So this arrangement explicitly relates to the stock issues of for example, mitigating bigeye bycatch in purse seines (noting that PNA catch relates to a portion of the total purse seine related mortality of this species and that other sectors i.e. longline contribute significantly to adult mortality of bigeye).</i></p> <p><i>PNA members are obligated to comply with the PNA arrangements, which are enforced through National legislation and also the obligations of flag states to comply with CMMs of the WCPFC. These obligations (to WCPFC, to the PNA agreements and arrangements) relate to stock issues (P1) as well as to ecosystem conservation and management (P2). As to if they are "effective to deliver outcomes", PNA members, through their agreement and arrangements respond to WCPFC CMMs to enforce the CMMs. The effectiveness of these measures, however, is not entirely the responsibility of the PNA members, it is however the collective responsibility of the members of the WCPFC which includes PNA members, who are full</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p>over the years, implying that the FAD closure was ineffective in controlling the fishing mortality.</p>  <p>Figure 1: Estimated annual juvenile and adult fishing mortality for the WCPO for the reference case. (After Harley et al. 2014)</p> <p>In the light of the above points, pending them being addressed by the CAB, it is clear that only a score of <60 can be allocated and that, therefore, the UoA FAILS on this SI.</p> <p>References:</p> <p>Hampton, J., Kleiber, P, Langley, A., and Hiramatsu, K. 2004. Stock assessment of bigeye tuna in the western and central Pacific Ocean. Working Paper SA-2, SCTB 17, Majuro, Marshall Islands, 9–18 August, 2004.</p> <p>Harley, S., Davies, N., Hampton, J. and McKenchie, S. 2014. Stock assessment of Bigeye tuna in the Western and Central Pacific Ocean. WCPFC-SC10-2014/SA-WP-01. Majuro, Republic of the Marshal Islands 6-14 August 2014.</p>	<p>members of WCPFC</p>

PI	Nature of Comment	Justification	Assessment Team Response
<p>PI3.1.1b Resolution of disputes</p>	<p>2</p>	<p><i>IPNLF agrees that a management system that incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system is in place at the RFMO level. However, whether this system is transparent and effective is another question. The CAB refers to the Palau Arrangement (Article 8) as setting out the dispute settlement system. This is incorrect; Article 8 refers to the “Register of Purse Seine Vessels.” Again, no evidence was put forward as to the existence of functioning national legal systems which provide recourse for settlement of disputes.</i></p> <p><i>The CAB, in its ‘justification’, presents no evidence for the existence of a mechanism for resolution of legal disputes at the PNA level. Instead, regarding the PNA level, it states that:</i></p> <ul style="list-style-type: none"> - <i>‘No evidence could be found of disputes from the documentation provided to the assessment team. As a general rule it is clear that any disputes are resolved through negotiation between parties either through consensus or compromise (Banks pers comm).’</i> - <i>‘Minutes of PNA meetings presented to the assessment team did not provide any information related to disputes although there are records of meetings and discussions associated with the allocation of effort days within the VDS.’</i> - <i>‘Within the PNA ... it is not clear that disputes between parties have occurred, or if they did, that the records of such disputes and their resolution is documented.’</i> <p><i>None of these statements demonstrates the existence at the PNA level of a mechanism for the resolution of legal disputes. The CAB could not find any evidence of disputes from the documentation that was provided to them. Does that mean that there are no disputes or is there simply a lack of transparency? Is there a platform where disputes are recorded? Are these available to stakeholders? There is no evidence that the system is subject by law to a transparent mechanism for the resolution of legal disputes.</i></p>	<p><i>With reference to Article 8 in the Palau Arrangement – thank you for pointing this out – this is reference to the amendment of 2010 which in fact is Article 8 that refers to consensus on legal disputes etc.</i></p> <p><i>Regarding the resolution of disputes within the PNA, we affirm that consensus is the primary mechanism of resolving “disputes” if they occur. The fact that “consensus” is the primary dispute resolution mechanism, it is logical that few disputes would prevail within the PNA process.</i></p> <p><i>We have revised the rationale and supporting information to strengthen the scoring justification.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>In the absence of evidence for such a mechanism, it is clear that only a score of 60 or <60 can be allocated. Unless the CAB provides additional evidence a strong case can be made for a score of <60 on this SI, leading to a FAIL of the UoA. It is reasonable to expect that after more than 5 years of certification a more transparent system should be in place.</i></p> <p><i>Regarding the Palau Arrangement, we would add that at p.187, the PCDR, regarding the VDS, states that:</i></p> <p><i>‘the review of the VDS states that “the VDS is governed through consensus. <u>There is no decision making provision or dispute resolution process within the PA, although a very basic dispute resolution provision is included in the FSMA. Decisions are taken by consensus, in accordance with regional custom. This could lead to a minority of Parties preventing important decisions being made that they disagree with. This heightens uncertainty for both Parties and harvesters and potentially reducing the ability of Parties to collectively maximise the benefits of participating in the VDS” (PNA 2015b).’ [Emphasis added.]</u></i></p>	
<p>PI3.1.1c Respect for rights</p>	<p>2</p>	<p><i>IPNLF agrees that the management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. Again, the tuna management plans are not available to the stakeholder, hence it cannot be verified whether the mechanisms observe the legal rights. The legal rights are generally respected (SG60), but are they observed? IPNLF concludes that not enough evidence is given for a SG80 score. The EAF risk assessment that the assessor refers to was only done by two nations (Marshall Island and Tuvalu, this report), therefore there is still plenty of room for improvement, which should be a condition for this PI.</i></p> <p><i>IPNLF recommends a score of SG60.</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>Again noting the difficulty that stakeholders had in accessing information, for ease of access the tuna management plans have been made available at the Drop Box (link address provided through the PNAO) if further reading is required. EAF assessments are not obligatory and demonstrate additional information of the commitments to understanding ecosystem functions in these countries and also broadly in the WCPO area.</i></p> <p><i>We have added text to bolster the scoring rationale for this PI. This includes the following:</i></p> <p><i>Under Article 7 of the WCPFC : Implementation of principles in areas under national jurisdiction the needs of each country (national jurisdiction) is acknowledged :</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
			<p>1. The principles and measures for conservation and management enumerated in article 5 shall be applied by coastal States within areas under national jurisdiction in the Convention Area in the exercise of their sovereign rights for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks.</p> <p>2. The members of the Commission shall give due consideration to the respective capacities of developing coastal States, in particular small island developing States, in the Convention Area to apply the provisions of articles 5 and 6 within areas under national jurisdiction and their need for assistance as provided for in this Convention.</p> <p>Further this article explicitly embraces the commitments of each country under their national legislation (refer to the numerous Acts, Titles and regulations) that commit to protecting the rights of the traditional folk to benefit from the resources under their jurisdiction.</p> <p>Further under Article 10 of the commission (para3.a-j) the rights of SIDS and coastal communities is explicitly stated as well as the “the record of compliance by the participants with conservation and management measures”;</p> <p>The score for SIc has been raised from 80 to 100, such that the overall score for PI 3.1.1 is now 95.</p>
<p>PI 3.1.2a Roles and Responsibilities</p>	<p>2</p>	<p>IPNLF agrees that organisations and individuals involved in the management process have been identified to some extent. For a perfect score of SG100 in “all areas” would however imply that there is absolutely no doubt about the system.</p> <p>The CAB uses one paragraph to deal with functions, roles and responsibilities and two paragraphs to deal with consultation and reporting. The latter two do not seem relevant to this SI. (Instead, they seem more relevant to SI 3.1.2b.) The CAB’s paragraph on functions, roles and responsibilities states that:</p>	<p>Thank you for your comments.</p> <p>We agree that elements of the rationale be moved to 3.1.2b. Regarding the PNA we have strengthened the rationale.</p> <p>Regarding transparency and access to information on the PNA web site – this is not the only route through which information may be made available. The Assessment Team was provided, on request, information needed to respond to this PI. Although we are satisfied that this means the information was available, for ease of access, we have now arranged for all the information provided to the Assessment Team to be made available to all</p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>'Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction at the WCPFC, PNA and national levels as well as support / service organisations FFA and SPC. The functions of these organisations are explicitly defined and well understood. ...'</i></p> <p><i>The CAB, in its 'justification', presents no evidence for the assertions in the above paragraph. We are aware that, in respect of the WCPFC specifically, functions, roles and responsibilities are explicitly defined and well understood. However, for example, we do not consider that to be the case at the PNA level; and the CAB presents no evidence to persuade us otherwise.</i></p> <p><i>For this SI MSC guidance asks whether the following can for instance be answered affirmatively: "If roles and responsibilities within the fishery change, either as a result of personal changes or reorganisation, are these changes communicated to ensure clarity of understanding?"</i></p> <p><i>For example, the PNA process lacks transparency; little is known about the individual national governance processes. The PNA website, www.pnatuna.com, also for instance blocks access to the meetings section unless the user is registered.</i></p> <p><i>In the light of this, it is clear that only a score of 60 can be allocated unless the CAB provides additional evidence to substantiate their scoring.</i></p>	<p><i>stakeholders through a Drop Box (access is available upon request to the PNAO).</i></p> <p><i>Access to the PNA website for information on internal discussions is naturally protected relating to party-specific discussions. Individuals can request registration at the discretion of the PNAO.</i></p>
<p><i>PI 3.1.3a Objectives</i></p>	<p><i>1</i></p>	<p><i>According to the MSC standard guide, this PI looks at the objectives which are contained in high level or broader government policy (beyond the particular fishery in question). Typically, management decisions are taken in the context of broader pre-stated objectives and the success of management decisions is therefore judged against how well those decisions deliver against objectives."</i></p> <p><i>IPNLF agree that the long-term objectives to guide decision-making is</i></p>	<p><i>Thank you for your comments.</i></p> <p><i>The guidance is clear that long term objectives relate to management policy outside of the UoA. Aspects relating to bigeye tuna are dealt with in the P2 section.</i></p> <p><i>The concern related to bigeye tuna mortality has broad application to the WCPO – certainly both longline and purse seine fisheries impact bigeye</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>consistent with the MSC fisheries standard and the precautionary approach, is implicit within the management policy. The question is whether it is explicit (easily understandable, clear, plain, obvious)? IPNLF argues that it is highly possible that this is not the case, because if the management policy was explicit then it should have been clear to all the members, which is not evident in the region.</i></p> <p><i>The assessor admits: “It is not clear that for stock assessments at least that the precautionary approach is fully applied. The bigeye tuna assessments (2010, 2011 and 2014), for example, indicated that bigeye tuna fishing mortality exceeded levels consistent with MSY. Precautionary LRPs have been set and CMMs updated but these actions have to date not sufficiently reduced exploitation levels on bigeye specifically.” IPNLF, has shown under PI 3.1.1a, (Figure) that the fishing mortality of BET has been increasing, especially for the purse seine fishery. The purse seine fishery catches 50% of bigeye tuna in weight, however, their catch is made up of mostly juvenile; hence they catch considerably more individual fish than the longline fishery. It can be argued that the introduction of the FAD’s was the demise of the bigeye stock and will soon be the demise of the tropical longline fishery who are dependent on the larger sized fish (Kirchner et al. 2014). It appears that the precautionary approach is not understood by all. It has to be considered that the purse seine fishery has been certified for five years and still an improvement in their unsustainable part of their fishery is not evident, concluding that the precautionary approach is not adhered to.</i></p> <p><i>It took around 10 years for the bigeye tuna stock to fall from the MSY level to below the level where recruitment is impaired. The latest yellowfin tuna assessment (Davies et al. 2014) estimated depletion to be around $S_{latest} / S_{BF=0} = 40\%$. It further indicated that the latest catch was higher than the MSY, which implies that the resource was overfished that year. If this continues the YFT stock will decrease in the same way as BET did and a drastic cut in the VDS will be needed.</i></p> <p><i>This SI relates to the consistency of objectives, within the ‘management</i></p>	<p><i>stocks either in their adult stages (longline mostly) or juvenile stages (purse seine mostly). However the catch of bigeye tuna by purse seines in PNA waters is only a portion of the total bigeye mortality (a portion of the 50% referred to), of which the major proportion targets unassociated FAD operations (which have very little impact on spawning potential of bigeye tuna). With the information available prior to the PCDR, the assessors agreed that WCPFC management actions had not effectively prevented the decline in the bigeye tuna resource and we also took the view that based on past assessments and evaluations the measures has not been fully effective. However, the statement that the PNA fishery’s “unsustainable” part has not improved and is therefore not precautionary is conjecture as it comprises only part of the total mortality of bigeye tuna.</i></p> <p><i>Although not available prior to the publication of the PCDR (and so not of direct relevance to the current reassessment), it may be of interest to the IPNLF that a new WCPO bigeye tuna assessment has just been published (McKechnie et al. 2017: https://www.wcpfc.int/node/29518), which suggests an improved outcome on stock status.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>policy’, with the MSC fisheries standard and with the precautionary approach. The MSC Standard, at SA4.5.1 (p.175), states that: ‘The team shall interpret management policy to mean outside the specific UoA (i.e., at a higher level or within a broader context than the fishery-specific management system).’ (Emphasis added.) The ‘higher level’ or ‘broader context’ referred to in SA4.5.1 includes not just the WCPFC but also the PNA.</i></p> <p><i>The MSC Standard, at SA4.5.2 (p.175), states that: ‘The team shall interpret the precautionary approach for the purposes of scoring this PI to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.’ In other words, it is not sufficient to conclude that something is merely ‘precautionary’ in the more general sense of the word.</i></p> <p><i>The CAB, in its ‘justification’, looks at various aspects of the PNA, including the Nauru Agreement and the Palau Arrangement. Regarding the Nauru Agreement, the CAB states that the Nauru Agreement ‘does not explicitly adopt the precautionary approach’ and further states that:</i></p> <p><i>‘As indicated in Banks et al. (2011), the Nauru agreement ... does not explicitly require objectives consistent with the precautionary approach and other important principles required to be applied under the WCPF Convention.’</i></p> <p><i>Regarding the Palau Arrangement, the CAB states that the VDS is ‘implicitly precautionary’ (though the CAB fails to clearly justify this statement). So, put another way, the VDS is not explicitly precautionary. In addition, the CAB makes no effort to justify its use of the word ‘precautionary’ vis-à-vis the definition of the precautionary approach that is required by SA4.5.1 (see above).</i></p> <p><i>In the light of the above points in relation to the Nauru Agreement and the Palau Arrangement, it is clear that a score of 80 cannot be allocated.</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>SG60 requires that: ‘Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are implicit within management policy.’ In our view, not even SG60 is met. This SG would need to be met by both the Nauru Agreement and the Palau Arrangement. Regarding the Nauru Agreement, the CAB’s ‘justification’ contains no statement or evidence that the Nauru Agreement’s objectives to guide decision-making are implicitly consistent with the precautionary approach.</i></p> <p><i>Regarding the Palau Arrangement, as noted, the CAB fails to clearly justify its view that the VDS is ‘implicitly precautionary’ and also fails to justify its use of the word ‘precautionary’ in the light of SA4.5.1.</i></p> <p><i>The CAB further writes “The VDS itself, which is founded on the 2010 effort limitation for the purse seine fishery is implicitly precautionary, although the 2010 effort level has remained in place as the stocks are considered healthy.” The VDS is an effort control measure and as such an economic tool. It is not linked scientifically to the state of the three tuna resources. Cognisance should be taken that the purse seine fishery is a multi-species fishery, which implies that it should also be precautionary for the exploitation of bigeye tuna. The VDS rendered the vessels to fish more efficiently, introducing effort creep. For example in the TCC summary report (2016) “Japan asked Korea why, despite the total catch of skipjack decreasing, Korea’s CPUE was high compared with other fleets. Korea noted two possible reasons: the fleet had a limited number of vessel days and they were expensive, so the fishing companies were forced to be very efficient...” During the WCPO purse seine bigeye management workshop (2015): “It was identified that the key to increasing free school fishing efficiency in the Japanese fleet was increasing the net sinking speed to decrease fish escape. Larger mesh nets with knotless net panels increase the net sinking speed and high power winches decrease pursing time.” These two examples indicate that the purse seine fleet is certainly attempting to fish more efficiently, which increases the catch per day and the fishing mortality shown in figure in PI 3.1.1a.</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Further on the effort creep, Tidd et al. (2016) estimated that the rate at which vessels are currently exploiting the available stock per unit of effort is one-third greater in 2015 than it was in 2006.</i></p> <p><i>It is explicit that FAD fishing is not a precautionary approach to fisheries management as was summarised by (Moreno et al. 2016) amongst others.</i></p> <p><i>IPNLF recommends to lower the score to <SG60 for this SI based on the above evidence.</i></p> <p><i>References:</i></p> <p><i>Davies, N., Harley, S., Hampton, J. and McKenchnie, S. 2014. Stock assessment of yellowfin tuna in the western and central Pacific ocean. Majuro, Republic of the Marshall Islands. 6-14 August 2014. WCPFC-SC10_2014/SA-WP-04.</i></p> <p><i>Kirchner, C.H., A.M. Berger, R. Banks, C. Reid, J. Hampton, G. Pilling and S. Harley. 2014. Developing a bioeconomic model for WCPO tuna fisheries to assess potential economic outcomes under alternative management options. Western and Central Pacific Fisheries Commission. Tenth regular session. Majuro Marshall Islands. WCPFC-SC10-2014/MI-IP-05.</i></p> <p><i>Moreno, G., M. Herrera and J. Morón. 2016. To FAD or not to FAD: A challenge to the marine stewardship council and its conformity assessment bodies on the use of units of assessment and units of certification for industrial purse seine tuna fisheries. Marine Policy 73: 100-107.</i></p> <p><i>Summary report of the Western and Central Pacific Ocean Purse Seine Bigeye Management Workshop. Honolulu, Hawaii. 8-10 April, 2015.</i></p> <p><i>Summary report. 12th Regular session of the Technical and Compliance Committee, Pohnpei, Federated States of Micronesia, 21-27 September 2016.</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Tidd, A. N., Reid, C., Pilling, G.M. and S.J. Harley. 2016. Estimating productivity, technical and efficiency changes in the Western Pacific purse-seine fleet. ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv262.</i></p> <p><i>It is clear that only a score of <60 can be allocated and that, therefore, the UoA FAILS on this SI.</i></p>	
<p><i>PI 3.2.1a Objectives</i></p>	<p>1</p>	<p><i>This PI assesses the presence of objectives in the fishery and the extent to which these are leading to outcomes that are consistent with the MSC standard.</i></p> <p><i>The CAB, in the second paragraph of its ‘justification’, fails to set out expressly the objectives that it is considering when assessing the UoA’s conformity with SI 3.2.1a. Instead, with regard to the WCPFC, it simply lists some CMMs that it claims set out, and represent endorsement of, objectives relating to P1 and P2 outcomes. Regarding national fishery management plans and the Palau Arrangement, it just states that objectives are ‘laid out’. It then, without any further rationale, reaches the conclusion that ‘[t]he objectives of the fishery management system are therefore implicitly consistent with MSC Principles 1 and 2’. From the analysis that the CAB has provided, there is simply no basis for the CAB to reach the conclusion it does.</i></p> <p><i>The CAB states that: ‘The management measures applied by the WCPFC are both short and long-term.’ However, SI 3.2.1a is not about management measures. It is about objectives. So, regarding WCPFC, the CAB needs to demonstrate that objectives applied by WCPFC are both short and long-term (for the purposes of SG80 and SG100). It fails to do so. Before it can claim that the WCPFC in turn drives conformity of the PNA (as members of the WCPFC) with the PI, it will need to (a) analyse the WCFPC’s objectives and (b) present evidence that those objectives permeate through to the PNA. In any event, the CAB states that ‘it is not clear if the PNA explicitly endorse both short and long-term</i></p>	<p><i>Thank you – we have noted your comments and strengthened the supporting rationale for the scoring.</i></p> <p><i>The main objective of the Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 United Nations Convention on the Law of the Sea and the 1995 UN Fish Stocks Agreement. This fundamental objective underscores the WCPFC commitment to stock (P1) and ecosystem (P2) management (See article 2).</i></p> <p><i>Further under Article 5 : Principles and measures for conservation and management ...</i></p> <p><i>(a) adopt measures to ensure long-term sustainability of highly migratory fish stocks in the Convention Area and promote the objective of their optimum utilization.....</i></p> <p><i>(b) ensure that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global;</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>objectives’.</i></p> <p><i>The CAB considers the PNA, with a focus on VDS and, in turn, the outcome of a March 2016 meeting. It concludes that: ‘PNA ... explicitly applied effort management with an implicit precautionary objective.’ The stocks concerned are highly migratory, presumably moving between the EEZs and the archipelagic waters, and yet we are told that the PNA did not apply effort changes defined by the PNA’s candidate HCRs to activities within the (extensive) archipelagic waters of the PNA. This undermines the CAB’s assertion that the PNA is adhering to ‘an implicit precautionary objective’.</i></p> <p><i>The CAB states that the VDS, as an effort management tool, has ‘an implicit long-term sustainability objective’. Yet in a paragraph claiming to set out ‘[f]urther evidence related to PNA objectives’, as provided in the PNA 2nd surveillance audit, the only reference to objectives is to short-term objectives (which are mentioned four times). Thus the CAB’s own evidence points towards the PNA having only short-term objectives, not long-term ones.</i></p> <p><i>However, the fishery assessed here is the PNA fishery and the Palau Arrangement does not explicitly express the short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, within the fishery-specific management system, as was claimed by the assessor. It is possible that the national management plans do so, but this can’t be verified as they are not publically available and therefore it is not explicit.</i></p> <p><i>The PNA record speaks for itself. Four PNA members were issued yellow cards by the EU and another two received a yellow card warning for being IUU non-compliant. Shark finning is still happening. In the TCC observer reports (2015 and 2016) the information is not split between FAD and free school fishing, therefore is seem reasonable to evaluate the purse seine fishery as a whole and according to this, the fishery is not completely aligned with the Principles 1 and 2. Clearly, no shark finning should take place, but in 2014 and 2015, 789 and 314 sharks</i></p>	<p><i>(c) apply the precautionary approach in accordance with this Convention and all relevant internationally agreed standards and recommended practices and procedures</i></p> <p><i>The PNA commitment to both conservation and economic objectives is regularly stated in meeting reports provided for the teams verification, although PNA meeting reports are not made available for public consumption.</i></p> <p><i>Nevertheless, national level similar objectives are repeatedly demonstrated in national legislation. For example under FSM Act, Section 502 “Conservation, management and sustainable use of the fishery resources”.</i></p> <p><i>(1) The Authority shall adopt management measures which promote the objectives of:</i></p> <p><i>(a) utilizing the fishery resources of the Federated States of Micronesia in a sustainable way;</i></p> <p><i>(2) The Authority shall ensure that such management measures are based on the best scientific evidence available and designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, and taking into account fishing patterns, the interdependence of stocks and generally recommended international minimum standards.</i></p> <p><i>(3) The Authority shall apply a precautionary approach in the adoption of such management measures that is consistent with and no less stringent than the criteria set forth in the United Nations Agreement or any other relevant access agreement or fisheries management agreement to which the Federated States of Micronesia is a party.</i></p> <p><i>etc.</i></p> <p><i>For Solomon Islands Fisheries Management Bill 2015 (extractys only): Part 2: “Objectives and Principles”</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p>were reported to have been finned and around 27,000 and 25,000 sharks were caught, with a recorded minimum survival rate.</p> <p>Surely, after 5 years of certification, transgressions of vessels fishing on FADs during the FAD closure should not occur at all. During the last three TCC meetings it was reported that 52, 65 and 83 sets were made illegally in 2013, 2014 and 2015, respectively.</p> <p>The CAB's focus in its 'justification' regarding the PNA is Principle 1. This is evidenced by its focus on the VDS and candidate HCRs. But SI 3.2.1a is not just about Principle 1. It is equally about Principle 2. No evidence is presented as to whether objectives, broadly consistent with achieving the outcomes expressed by Principle 2, are implicit within the PNA management system.</p> <p>In the light of the above points, it is clear that only a score of <60 can be allocated and that, therefore, the UoA FAILS on this SI.</p> <p>References:</p> <p>Report for the Regional Observer Programme (6th). Technical Compliance Committee. 10th regular session. Pohnpei, Federated States of Micronesia. 23-30 September 2014. WCPFC-TCC10-2014-RP02.</p> <p>Report for the Regional Observer Programme (7th). Technical Compliance Committee. 11th regular session. Pohnpei, Federated States of Micronesia. 23-29 September 2014. WCPFC-TCC11-2015-RP02.</p> <p>Report for the Regional Observer Programme (8th). Technical Compliance Committee. 12th regular session. Pohnpei, Federated States of Micronesia. 21-27 September 2015. WCPFC-TCC10-2016-RP02_rev2.</p>	<p>4. The objective of this Act shall be to ensure the long-term management, conservation, development and sustainable use of Solomon Islands fisheries and marine ecosystems for the benefit of the people of Solomon Islands.</p> <p>(d) management measures shall, as appropriate, be based on applicable standards agreed at international, regional or sub-regional level, such as Limit Reference Points and Target Reference Points;</p> <p>(e) the precautionary approach shall be applied to the management and development of the fisheries at a standard that is equal or superior to the standard set out in Article 6 and Annex II of the UN Fish Stocks Agreement;</p> <p>Under Fishery Management Plans: Division 3 (Solomons), specific reference is made to managing FADs viz:</p> <p>Any Order made under subsection (2) may wholly or partially prohibit -</p> <p>(d) deployment or retrieval of a fish aggregating device and associated electronic equipment or fishing within a specified radius of such device;</p> <p>For Tokelau, Fishing Licence: General Conditions and Schedules – 2016 (PURSE SEINE), for example: "Fish Aggregating Devices":</p> <p>20. The Licensed Vessel shall not deploy Fish Aggregating Devices, or set on a Fish Aggregating Device, during the months of July, August and September. The vessel operator will advise Tokelau of its flag requirements to either not deploy or set on Fish Aggregating Devices during October OR reduce the annual number of FAD sets by its fleet as required by the Conservation and Management Measures adopted by WCPFC CMM 2014-01.</p> <p>21. The Licensed Vessel shall only set on a FAD that has attached a drifting satellite buoy that is registered with the Parties to the Nauru</p>

PI	Nature of Comment	Justification	Assessment Team Response
			<p><i>Agreement Vessel Day Scheme vessel registry.</i></p> <p><i>There is also a comprehensive section on bycatch and mitigation (all consistent with P2) as well as reference to VDS.</i></p> <p><i>There are examples in other national legislation (of PNA parties) demonstrating commitment to conservation measure both for target (P1) and bycatch species. A comprehensive list is not provided here for brevity.</i></p> <p><i>In regard to FAD-associated and free school sets, observers report as specified in the P2 text. As shown (example only) national legislation outlines regulations related to bycatch and ETP species.</i></p> <p><i>We note also that the ROP TCC reports are referenced. The ROP for the WCPFC is expedited at a national level where each member state including PNA parties is committed to 100% observer coverage on purse seine vessels. National observers follow strict protocols as designated in their structured training programmes.</i></p> <p><i>Overall National legislation are purposely consistent with regional commitments inclusive of long and short-term fisheries management objectives. The Acts and related regulations are comprehensive and are consistent with both ecosystem and target species (sustainability) objectives</i></p> <p><i>Refer also to the scoring rationale - 2nd surveillance audit finding as per the 3.2.1 justification - (Scott & Stokes 2013). The 32nd annual meeting of the PNA explicitly covered the issue of MSC and the need for short term objectives, viz paragraph 55: "The Parties endorsed a specific recommendation"</i></p> <p><i>We previously noted in the PCDR that the PNAFTF does not fully meet the SG100 requirements. As this is a PI with a single SI, the Assessment Team has now identified that partial scoring should have been applied (CR 7.10.6.3, MSC 2014). The conclusion of the scoring text for this PI now reads:</i></p> <p><i>"Although aspects of the SG100 requirements may be met, for example with</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
			<p><i>the explicit incorporation of F_{MSY} as a measurable default target reference point in recent CMMs, it cannot be concluded that well defined and measurable objectives are applied throughout the specific fishery management system, so the PNAFTF doesn't fully meet the SG100 requirements. A partial score of 90 is therefore awarded."</i></p>
<p><i>PI 3.2.2a Decision-making processes</i></p>	<p><i>1</i></p>	<p><i>The CAB's 'justification' considers both the WCPFC and the PNA. Regarding the PNA, all the CAB has to say is as follows:</i></p> <p><i>'PNA ... has well-established decision-making processes which have resulted in measures and strategies contributing to the WCPO fisheries management (purse seine) which underpin the effective management of the WCPO purse seine fisheries. Consensus is the general rule for decision-making by both the Commission and PNA Members during the annual meetings of both the Commission and the PNA. If consensus cannot be reached, voting, grounds for appealing decisions, conciliation and review are all part of the established decision-making process, as described in Article 20 of the Convention.'</i></p> <p><i>No evidence is provided by the CAB, in its 'justification', to support its assertion that PNA 'has well-established decision-making processes which have resulted in measures and strategies contributing to the WCPO fisheries management (purse seine) which underpin the effective management of the WCPO purse seine fisheries'.</i></p> <p><i>No evidence is provided by the CAB, in its 'justification', to support its assertion that: 'Consensus is the general rule for decision-making by ... PNA Members during the annual meetings of ... the PNA. If consensus cannot be reached, voting, grounds for appealing decisions, conciliation and review are all part of the established decision-making process ...'. Regarding the latter sentence, the CAB goes on to refer exclusively to Article 20 of the WCPFC Convention – rather than to any PNA-related instruments.</i></p> <p><i>The CAB states that the WCPFC's 'decision making process is also</i></p>	<p><i>Thank you – your points are noted and the scoring rationale strengthened.</i></p> <p><i>Regarding established decision-making – the consensus is clearly effected through WCPFC eg Article 10 : Functions of the Commission (n) promote the peaceful settlement of disputes and Article 20 : Decision-making 1. As a general rule, decision-making in the Commission shall be by consensus. For the purposes of this article, "consensus" means the absence of any formal objection made at the time the decision was taken.</i></p> <p><i>Further under Article 4 of the Palau Arrangement (Decisions of the management meeting):</i></p> <p><i>The decisions of the Management Meeting will be arrived at by consensus and will be binding on the Parties.</i></p> <p><i>The PNA agreement itself has implicit elements relating to decision-making including Article I: The Parties shall seek, without any derogation of their respective sovereign rights, to co-ordinate and harmonise the management of fisheries with regard to common stocks within the Fisheries Zones, for the benefit of their peoples.</i></p> <p><i>And demonstrating PNA commitment to through Article IV: The Parties shall seek the assistance of the Pacific Forum Fisheries Agency in establishing procedures and administrative arrangements for the exchange and analysis ofetc.</i></p> <p><i>And explicitly under Article V (9). The decision of the Parties shall be by consensus. If consensus is not possible each Party shall have one vote, and</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>followed through by Flag States who enforce management measures on their own vessels as well as by coastal states within their own EEZ (as applies to the PNA)’. Regarding flag States, the critical omission in the CAB’s statement is the word ‘should’. Flag States should enforce management measures on their own vessels; but that does not always happen (e.g. see p.187 of the PCDR: ‘WCPFC has had a number of problems with flag states not applying appropriate controls to all their vessels’). The CAB’s statement about flag States is irrelevant for the purpose of deciding whether either of the SGs is met. That is because the SGs refer to processes ‘that result in measures and strategies’ (emphasis added). In other words, the emphasis is on an outcome – rather than on what should happen. That is reiterated by the MSC Standard, in guidance at GSA4.8 (p.480) where it describes the background to PI 3.2.2, which states that: ‘The focus for this PI is on the decision-making processes themselves, and if they actually produce measures and strategies within the fishery-specific management system.’ (Emphasis added.)</i></p> <p><i>In the light of the above points, it is clear that only a score of SG60 can be allocated.</i></p>	<p><i>the decision shall be taken by a vote of 5 members.</i></p> <p><i>Refer also the the response provided in 3.2.1a above.</i></p> <p><i>No change has been made to scoring.</i></p>
<p><i>PI3.2.2b</i></p> <p><i>Responsiveness of the decision-making processes</i></p>	<p><i>1</i></p>	<p><i>IPNLF agrees that the decision-making processes at WCPFC respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decision.</i></p> <p><i>However, IPNLF does not agree that decision-making processes respond to serious and important issues in a transparent, timely and adaptive manner. The tuna stocks are assessed only every three years and on data that is two years behind. The latest data point for bigeye tuna (Harley et al., 2014) and yellowfin tuna (Davies et al., 2014) is 2012. As mentioned before, the YFT assessment showed that overfishing occurred in 2012. A new assessment is due in August of this year, which will give the results for 2015. There is an extensive lag in potentially serious and important issues. Even though, it might be</i></p>	<p><i>Thank you for your comments.</i></p> <p><i>Text related to your comments on bigeye tuna has been added in other sections.</i></p> <p><i>With regard to the comment that “Without evidence of ... ‘established effective decision-making processes’ for moving serious issues to the WCPFC for attention, no comfort can be taken from the potential role of the WCPFC in the context of SI 3.2.2b”, it is noted that PNA initiatives have strongly influenced the WCPFC (which is a relatively new RFMO). These initiatives include development of the VDS as well as an integrated fishery monitoring system. These are fundamental “decisions” taken by the PNA aimed at strengthening the management of the resources within WCPO. This contrasts with other RFMOs as you referenced earlier where PNA</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>considered best practice this PI can't be scored an 80.</i></p> <p><i>Further, not all processes are transparent. IPNLF shares its concern with ISSF that there is a lack of transparency in the WCPFC Compliance Monitoring Scheme (CMS). In contrast to the other four tuna RFMO's, observers are not allowed in the CMS working group meetings and the responses of members to identified non-compliance are not released publicly. (ISSF, 2016)</i></p> <p><i>The CAB's 'justification' seeks to deal with both the WCPFC and the PNA. The particular weaknesses of the 'justification' lie in the CAB's failure to provide evidence of its assertions about the PNA. In particular, it fails to provide evidence to support the following statements:</i></p> <p><i>'The PNA has an established effective decision-making processes which responds to issues identified in relevant research, monitoring, evaluation and consultation.'</i></p> <p><i>'All PNA members have management plans that are applied at national level.'</i></p> <p><i>'Together, both the WPCFC and PNA as well as service providers (FFA, SPC) respond timeously to issues through an effective communication network.'</i></p> <p><i>'The PNA ... respond to important issues and allow consultation and participation.'</i></p> <p><i>'Evidence presented to the assessment team suggested that the decision-making process of the PNA is, as a general rule, clear and transparent.'</i></p> <p><i>This effect of this failure to provide evidence is magnified because the CAB places reliance on WCPFC CMMs generally as the means for responding to serious issues. Without evidence of the PNA having the 'established effective decision-making processes' for moving serious</i></p>	<p><i>representing the majority of states in the WCPFC, performs a direct role in not only promoting / supporting WCPFC objectives and related decisions, but also actively initiates/prompts creative management measures which have been adopted by the Commission.</i></p> <p><i>The use of dFADS we note your comments and that in fact PNA " Ministers recommended the development of amendments to PNA Implementing Arrangements and national legislation to enforce compliance with PNA measures relating to FAD tracking and FAD management by 2018".</i></p> <p><i>We have strengthened the scoring rationale.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>issues to the WCPFC for attention, no comfort can be taken from the potential role of the WCPFC in the context of SI 3.2.2b.</i></p> <p><i>The PNA could have done much more. According to Maurice Brownjohn, Commercial Manager of the PNA, the current PNA estimate, based on declarations, is that 80,000 FADs are deployed a year. The 14.8 million square kilometres PNA fishery is a skipjack fishery, with most of the catch taken in-zone, and FADs go wherever the currents send them – once deployed, they can pull fish from the EEZs they pass through, causing potential economic losses even when no sets are made. Brownjohn commented that during FAD closures, monitoring and deployment of FADs still takes place. A lot of bigeye tuna is caught in the WCPFC/EPO border area; bigeye tuna may be more vulnerable in this area (WCPFO, 2015). It is recognised that the PNA had the intention to manage some aspects of the FADs within their fishing zone. It was the intention of the PNA to start a trial on 1 January 2016 which would make the registrations of FADs within PNA compulsory. In that the PNA hoped for recovery and redeployment of FADs to reduce marine debris, and they would be running trials on proximity alerts to improve compliance (WCPFO, 2015). However, this has not been implemented as yet, but this issue was again tabled during a PNA meeting held in April 2017, but no implementation date was set (Havice et al. 2017); the registration of FADs is not compulsory yet despite the fishery having been certified for more than 5 years.</i></p> <p><i>A purse seine industry representative stated that “no fleet would consider stopping dFAD fishing if it wanted to be cost effective as they are an absolute requirement for the fishery to be profitable”. This is a serious statement. Is the UoA not economically feasible? Will the continued use of dFADs render the tropical tuna longline fishery economically unsustainable? These are important issues that need to be addressed.</i></p> <p><i>In the light of the above points, it is impossible to assess whether a score even of 60 can be allocated. In the absence of the requisite evidence, it is clear that only a score of <60 can be allocated and that, therefore,</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>the UoA FAILS on this SI.</i></p> <p><i>References:</i></p> <p><i>Davies, N., Harley, S., Hampton, J. and McKenchnie, S. 2014. Stock assessment of yellowfin tuna in the western and central Pacific ocean. Majuro, Republic of the Marshall Islands. 6-14 August 2014. WCPFC-SC10_2014/SA-WP-04.</i></p> <p><i>Harley, S., Davies, N., Hampton, J. and McKenchie, S. 2014. Stock assessment of Bigeye tuna in the Western and Central Pacific Ocean. WCPFC-SC10-2014/SA-WP-01. Majuro, Republic of the Marshal Islands 6-14 August 2014.</i></p> <p><i>Havice, E., McCoy, M. and L. Campling. 2017. FFA TRADE AND INDUSTRY NEWS. Volume 10: Issue 2 March - April 2017</i></p> <p><i>ISSF Position Statement. 2016. Presented during the 13th Meeting of the Western and Central Fisheries Commission in Nadi, Fiji. December 5-9, 2016.</i></p> <p><i>WCPFC, 2015. First meeting of the FAD Management Options Intersessional Working Group, Bali, Indonesia, 27 to 28 November 2015.</i></p>	
<p>PI3.2.2c</p> <p>Use of precautionary approach</p>		<p><i>Regarding the WCPFC, the CAB states that: 'In all cases, decisions are required to be based on the best scientific information available, and the [WCPFC] makes adequate provision for this to be achieved.' (Emphasis added.) However, the CAB presents no evidence that the WCPFC makes the 'adequate provision' referred to.</i></p> <p><i>Very little of the CAB's 'justification' relates to the precautionary approach in the context of the PNA. That which does is as follows:</i></p> <ul style="list-style-type: none"> <i>• 'PIP tuna management plans typically commit to the precautionary approach' [presented as an extract from Scott and Stokes, 2013]</i> <i>• 'As discussed in para. 3.1.3a the precautionary approach is not</i> 	<p><i>Thank you for your comments – we have revised and strengthened the scoring rationale.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>adopted explicitly by the PNA, although the communication networks introduced as well a member commitments to the WCPFC demonstrate an implicit commitment to the precautionary approach to management of the purse seine fishery.'</i></p> <p><i>Regarding the second bullet point above, commitments made by parties to a treaty, such as to the WCPFC Convention, do not guarantee that those commitments will be performed. Such performance needs to be demonstrated by practice, supported by evidence. No such practice or evidence regarding the PNA is presented by the CAB in its 'justification'.</i></p> <p><i>Overall, it is simply not possible to conclude, on the basis of the evidence presented by the CAB, that decision-making processes within the PNA use the precautionary approach. As a result, it is clear that SG 80 cannot be reached.</i></p> <p><i>It should be added that two particular elements of the practice of the PNA demonstrate clearly that decision-making processes within the PNA do not use the precautionary approach. Those elements are the choices by the PNA, as the client fishery in this re-assessment exercise, to use 1 nautical mile as the threshold distance for designating a set as either 'FAD' or 'FAD-free' and, irretrievably tied in with that, to use only the purportedly FAD-free part of the PNA tuna purse-seine fishery as the UoA (rather than using the whole fishery). (On the matter of threshold distances, see further Moreno et al.)</i></p>	
<p>PI3.2.2d</p> <p><i>Accountability and transparency of management</i></p>	<p>2</p>	<p><i>The CAB allocates a score of 100. This means that in the view of the CAB the following guidepost is met, in respect of both the WCPFC and the PNA:</i></p> <p><i>'Formal reporting to all interested stakeholders provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.'</i></p>	<p><i>Thank you for your comments, the rationale has been strengthened and the scoring for PI 3.2.2. Sld adjusted down from 100 to 80.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response				
		<p><i>At the PNA level, meeting reports have to be requested – rather than being made freely available. That is stated by the CAB at p.187 of the PCDR:</i></p> <p><i>‘Observers are permitted at PNA meetings although PNA meetings reports were not made freely available (agendas of meetings provided) but are available on request.’</i></p> <p><i>Clearly, that practice does not constitute ‘[f]ormal reporting to all interested stakeholders’. Furthermore, the CAB provides no evidence that the minutes of PNA meetings provide ‘comprehensive information on the fishery’s performance and management actions’ and describe ‘how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity’.</i></p> <p><i>In the light of the above points, it is simply not possible for the UoA to obtain a score of 100. If the CAB were to provide appropriate evidence of the subject matter of minutes of PNA meetings, it might be possible to demonstrate conformity with SG 80. Otherwise, only a score of 60 can be justified.</i></p> <p><i>It should be added that the CAB, in its ‘justification’, appears to have taken no account of SA4.8.5, SA4.8.6 and SA4.8.7 in the MSC Standard (p.179):</i></p> <table border="1"> <tbody> <tr> <td>SA4.8.5</td> <td>At the SG60 level, at least a general summary of information on subsidies, allocation, compliance and fisheries management decisions should be available to stakeholders on request.</td> </tr> <tr> <td>SA4.8.6</td> <td>At the SG80 level, in addition to the information provided at the SG60 level, information on decisions,</td> </tr> </tbody> </table>	SA4.8.5	At the SG60 level, at least a general summary of information on subsidies, allocation, compliance and fisheries management decisions should be available to stakeholders on request.	SA4.8.6	At the SG80 level, in addition to the information provided at the SG60 level, information on decisions,	
SA4.8.5	At the SG60 level, at least a general summary of information on subsidies, allocation, compliance and fisheries management decisions should be available to stakeholders on request.						
SA4.8.6	At the SG80 level, in addition to the information provided at the SG60 level, information on decisions,						

PI	Nature of Comment	Justification	Assessment Team Response				
		<table border="1"> <tr> <td></td> <td>fisheries data supporting decisions, and the reasons for decisions, should be made available to all stakeholders on request.</td> </tr> <tr> <td>SA4.8.7</td> <td>At the SG100 level, the information listed in the SG60 and SG80 levels should be comprehensive and available openly, publicly and regularly to all stakeholders.</td> </tr> </table> <p><i>IPNLF recommends for this PI to be downgraded to SG60.</i></p>		fisheries data supporting decisions, and the reasons for decisions, should be made available to all stakeholders on request.	SA4.8.7	At the SG100 level, the information listed in the SG60 and SG80 levels should be comprehensive and available openly, publicly and regularly to all stakeholders.	
	fisheries data supporting decisions, and the reasons for decisions, should be made available to all stakeholders on request.						
SA4.8.7	At the SG100 level, the information listed in the SG60 and SG80 levels should be comprehensive and available openly, publicly and regularly to all stakeholders.						
<p><i>PI3.2.2e</i> <i>Approach to disputes</i></p>	<p>1 & 2</p>	<p><i>IPNLF agrees that there is a dispute mechanism set out by the WCPFC. However, it is difficult to evaluate this PI as there is very little information that can support either SG60 or SG80.</i></p> <p><i>One court challenge was reported by NOAA Fisheries (2013) in which the US fined some of their vessels that were guilty of violations. “Decisions were issued the week of August 19, 2013, in two separate enforcement cases from the Pacific Islands involving U.S. purse seine vessels fishing in violation of the Western and Central Pacific Fisheries Convention Implementation Act (WCPFCIA). An Administrative Law Judge handed down a decision on August 22, 2013, finding that the owner, operator and fishing master of the American Triumph had conducted six sets on or within one nautical mile of a fish aggregating device (FAD) and had deployed a FAD during the 2009 FAD closure, both of which are violations of the Act, resulting in a fine of \$562,068. In the second case, which consolidated five cases against the fishing vessels Ocean Encounter, Ocean Conquest, Sea Honor, Sea Quest and Pacific Ranger, the owners, operators and fishing masters were charged with five counts of setting their purse seine net on whales, which is a violation of the Marine Mammal Protection Act, and ten counts</i></p>	<p><i>Thank you for your comments. as well as your reference to the NOAA report of 2013 relating to non-compliance of American flagged purse seiners.</i></p> <p><i>The pertinent aspects you have raised have been noted and the scoring rationale strengthened.</i></p> <p><i>It should be noted that the Observer Trip Monitoring Summaries provided in the Annual ROP reports only record observations by observers, and not established non-compliance. For example, with respect to reports of fishing within the FAD closure, some vessels are allowed to fish on FADs at some times during the FAD closure under exemptions for domestic vessels or under an incentive arrangement for fleets with low levels of FAD use, which may not be known to the observer</i></p> <p><i>More specifically, reference to MRAG estimates of IUU are not specific to the UoA, and upon reading the report, much of the alleged issues supporting the quantification of IUU relate to species misreporting. The estimated IUU fishing related to misreporting is the difference between the catches by species reported by vessel operators on logsheets and by observers. The logsheet estimates by vessel operators are visual estimates where there may be difficulties in distinguishing species composition completely accurately</i></p>				

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>of setting on or within one nautical mile of a FAD and two counts of deploying FADs during the 2009 FAD closure in violation of the WCPFCIA. In its decision issued August 23, the Court found all seventeen counts proven and assessed a civil penalty of \$953,054.</i></p> <p><i>The outcomes of compliance monitoring system meetings might have been of assistance in evaluating this PI, but as mentioned before, the findings of these meetings are not available. The minutes of the PNA meetings or any proceedings on national scale are also not available to stakeholders. While it is not known whether there were any court challenges, it is most certainly known that there is an indication of disrespect and defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery. This is illustrated under the PI3.2.1a, where IPNLF argues that some of the transgressions in the fishery have not been eliminated. A large number of FAD sets are still done during the closed FAD season, shark finning is continuing etc.</i></p> <p><i>Moreover, in this report the CAB describes this on IUU fishing: “Towards the Quantification of IUU Fishing in the Pacific Islands Region” MRAG Asia Pacific (2016) concluded that “Of the three main sectors assessed, estimated volume of IUU product was highest in the purse seine fishery, accounting for 70% of overall volume. Estimated IUU volumes in this sector were largely driven by reporting violations and illegal FAD fishing during the closure period”.</i></p> <p><i>This report further concludes that: “Unlicensed fishing accounted for only 4% of the estimated overall volume. Amongst the main target species, skipjack accounted for the largest proportion of total estimated IUU volume (33%), but a lesser proportion of the total estimated ex-vessel value (18%). The total estimated IUU volume of SKJ (100,730 t) equated to around 5.1% of estimated total SKJ catch in the WCPFC-CA in 2014. Yellowfin accounted for the next highest volume (96,126t), making up 31% of the total estimated IUU volume, and 27% of the ex-vessel value. The total estimated IUU volume of YFT equated to around 15.8% of the estimated total catch of YFT in the WCP-CA during 2014.</i></p>	<p><i>and where there are particular difficulties in distinguishing the species composition of juveniles which are predominantly from FAD sets. This is therefore largely misreporting because of estimation difficulties rather than intentional misreporting. Observer sampling data is therefore used to adjust the species compositions reported by vessel operators and it is the observer adjusted data that is used for scientific and management purposes The report demonstrates that the suite of tools available, including 100% observer coverage, is sufficient to address alleged IUU issues, and that violations such as FAD sets during closed season are not systematic.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Much of this is driven by estimates of misreporting in the purse seine fishery which is subject to 100% observer coverage, and therefore may result in little unaccounted for catch.”</i></p> <p><i>All of the SGs for this SI require empirical evidence; that is clear from their wording. It is not sufficient to show that a dispute resolution system exists on paper. The CAB allocates a score of 80. SG80 requires that: ‘The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.’</i></p> <p><i>The ‘management system’ referred to includes both the WCPFC and the PNA. The CAB states that: ‘At PNA level there is no evidence of unresolved disputes suggesting that when or if they occur matters are resolved.’ However, it does not explain what research, over what period, it has done to look for evidence. Also, even if matters are ‘resolved’, that is not the test for SG80. The test is whether efforts are made for timely compliance with judicial decisions. At the PNA level, it seems that the CAB does not have the evidence to judge whether SG80 is met.</i></p> <p><i>SG80 (as well as SG60 and SG100) also refers to the fishery. The CAB does allude to instances of alleged IUU fishing ‘by particular fishing companies and fishing vessels’ but it does not consider these instances against the specific test of SG80. It also states that otherwise ‘[t]here is no evidence that other entities flout the law’. Again, it is not clear what research, over what period, the CAB has done to look for evidence and, anyway, that is not the test for SG80. So it appears that the CAB does not have the evidence to judge whether SG80 is met at the fishery level.</i></p> <p><i>In view of the lack of evidence to judge whether SG80 is met, it is necessary to consider SG60. This requires that: ‘Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.’</i></p> <p><i>In this regard, the CAB’s statement that, at the PNA level, ‘there is no</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>evidence of unresolved disputes suggesting that when or if they occur matters are resolved' is relevant, as is the CAB's statement about fishery violations. But it remains the case that it is unclear what research, over what period, the CAB has done to look for evidence. Before being able to show that SG60 is met for the PNA and for the fishery, the CAB would need to provide clarity.</i></p> <p><i>In the light of the above points, pending them being addressed by the CAB, it is clear that only a score of <60 can be allocated and that, therefore, the UoA FAILS on this SI.</i></p> <p><i>References:</i></p> <p><i>MRAG Asia Pacific (2016). Towards the quantification of illegal, unreported and unregulated (IUU) fishing in the Pacific Islands Region. 101pp.</i></p> <p><i>NOAA Fisheries. 2013. Penalties for Purse Seine Fishing Violations Total more than \$1.5 Million. Retrieved from: http://www.nmfs.noaa.gov/ole/newsroom/stories/13/04_090413_purse_seine_fad_case.html</i></p>	
<p>PI 3.2.3a MCS implementation</p>	<p>1</p>	<p><i>IPNLF agrees with the fact that a monitoring, control and surveillance system has been implemented in the fishery and it has demonstrated an ability to enforce relevant management measures, strategies and/or rules. However, there is just not enough evidence to support that there is a consistent ability to enforce relevant management measures, strategies and/or rules. If this would be the case, there would be less violations reported by the observers at the TCC meetings, no IUU fishing and definitely no issuing of yellow cards by the EU.</i></p> <p><i>To attain a score of SG100 for this SI evidence must be provided to show that "a comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies</i></p>	<p><i>Your points are noted and we have made some minor changes to the rationale and adjusted the scoring for this SI from 100 to 80.</i></p> <p><i>With respect to the 'yellow cards', please see our response to SId, below.</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>and/or rules”.</i></p> <p><i>Such evidence has not been provided and IPNLF therefore recommends a score of SG80.</i></p>	
<p><i>PI 3.2.3b</i> <i>Sanctions</i></p>	<p>1</p>	<p><i>IPNLF agrees that sanctions to deal with non-compliance exist and there is some evidence that they are applied. However, as long as the outcomes of compliance monitoring system meetings are not available it would be difficult to evaluate whether the sanctions are consistently applied and are thought to provide effective deterrence. Judging by the observer reports presented during TTC meetings (see PI3.2.1a) it is possible that sanctions are not an effective deterrence. Also, if indeed, each country has a system of sanctions, these should be publicly available. From the evidence reported by the CAB there is absolutely no way of knowing whether sanctions are consistently applied. There need to be provisions in fisheries legislation about penalties. Reports from national fisheries should be made available. As mentioned under PI3.2.2e, the purse seine is responsible for a large part of the IUU fishing in the Pacific.</i></p> <p><i>In order to qualify for a score of 80, more evidence needs to be provided.</i></p> <p><i>IPNLF recommends a score of SG60.</i></p>	<p><i>Thank you for your comments. We have reviewed the text in the context of your comments and are staisfied our scoring responds to the issues of sanctions and non-compliance in the fishery. No changes have been made.</i></p>
<p><i>PI 3.2.3d</i> <i>Systematic non-compliance</i></p>	<p>2</p>	<p><i>Since the fishery was certified in December 2010, the EU ‘yellow carded’ 4 out of the 8 PNA members under the EU IUU regulation and a further 2 received warnings from the EU that they could be ‘yellow carded’ if they did not address IUU issues. That means that during the 5 year certification period the EU were concerned about IUU activities in 6 out of the 8 PNA countries. In 2 cases (Kiribati (yellow carded in 2016) and Tuvalu (yellow carded in 2014)) the yellow cards are still in place. FSM and the Marshall Islands received warnings in 2014 and In the other 2 cases (PNG and Solomon Islands), the yellow cards were issued in 2014 and lifted in 2016.</i></p>	<p><i>Thank you for the comment.</i></p> <p><i>We have noted your comments in this regard. No explicit systematic compliance contraventions related to PNA are, however, known to the assessment team, and we note that the yellow cards issued against PNG and Solomon Islands were lifted after these parties made credible progress in improving their fisheries governance and combatting IUU.</i></p> <p><i>For Kiribati and Tuvalu, we note that significant progress is being made by to address the fishery governance concerns raised by the EU. For example, the EU has recently approved Kiribati as an EU Competent Authority, such</i></p>

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>Yellow carding of countries is a relatively rare occurrence and it is unprecedented to have this level of yellow carding happening in a MSC certified fishery.</i></p> <p><i>Many instances of non-compliance have also been recorded in the WCPFC purse seine fleet. For instance:</i></p> <p><i>8% of observers were threatened, intimidated, refused boarding on PS in WCPFC</i></p> <p><i>During 6.5% of trips observers were requested to not report on an event happening while on board</i></p> <p><i>During 20% of trips observers reported that vessels failed to comply with CMMs</i></p> <p><i>>50% of observers in WCPFC reported that vessels inaccurately reported catch & discards</i></p> <p>Table 2. Extract from <i>Table 8 Observer Trip Monitoring Summary 2014 - WCPFC-TCC11-2015-RP02.</i></p>	<p><i>that products from Kiribati-flagged vessels can be exported to the EU (http://www.ffa.int/node/1957).</i></p> <p><i>The other comments here on compliance refer to the WCPFC members in general and does not explicitly identify non compliance by PNA Parties.</i></p>

		Trips observers reported Yes	% of trips entered
Item reported	Total number of trips entered		775
<i>Observer Rights and Social Behavior</i>			
RS -a	Did the operator or any crew member assault, obstruct, resist, delay, refuse boarding to, intimidate or interfere with observers in the performance of their duties	59	7.6
RS -b	Request that an event not be reported by the observer	50	6.5
<i>WCPFC CMMS</i>			
WC - a	Fail to comply with any Commission Conservation and Management Measures (CMMs)	139	17.9
WC - c	Fish on FAD during FAD Closure	65	8.4
<i>Vessel log sheet information</i>			

PI	Nature of Comment	Justification				Assessment Team Response
		LC – a	Inaccurately record retained "Target Species" in the Vessel logs [or weekly reports]	287	37.0	<p><i>Thank you. We note the opinion expressed by Blaha, but based on the weight of evidence available, including corroborative evaluations made by the Parties, WCPFC and FFA, the Assessment Team disagrees that this comprises evidence of systematic non-compliance.</i></p>
LC – b	Inaccurately record "Target Species" Discards	450	58.1	<p><i>Thank you. We have reviewed the procedures for landings with the client and they have attested that if catches are to be confirmed as MSC-eligible then a completed observer report is required to be submitted, together with the associated debriefing report (see Traceability, Section 5). If these reports are not available, the catch loses MSC-eligibility.</i></p> <p><i>In this regard, we again note the opinion expressed by Blaha but disagree that this comprises evidence of systematic non-compliance.</i></p>		
LC - c	Record target species inaccurately [eg. combine bigeye/yellowfin/skipjack catch]	420	54.2			
<p><i>Additional questions about “systematic non-compliance” is raised by Blaha (2017), when he specifically mentions his concerns for the scoring issue of “Systematic non-compliance”. He writes: “I have some level of access to regional compliance databases and vessels compliance indexes, so I searched the names of some of the vessels I know are part of certified fisheries. The results were shocking in some cases. Of course, I cannot divulge this information without breaking my confidentiality agreement, even if I think that all compliance data should be public. In general, the compliance history of these vessels tends to reflect the attitude of conformity of the skippers and owners, particularly when it comes to systematic compliance issues in assessment scores. Furthermore, it shows what is the real compliance capacity of the flag states”.</i></p> <p><i>Blaha goes on to say: “In the Pacific, observers have a lot on their hands already, scientific data, compliance and MarPol, in an already complex set up. So having them involved in a private commercial enterprise does not seem ethical nor fair. While observers are getting a payment plus</i></p>						

PI	Nature of Comment	Justification	Assessment Team Response
		<p><i>for the MSC work, these may offer chances were a conflict of interest may arise. Furthermore, the observer is supposed to stay on board for landing or transshipment of MSC catch, which is quite a lot to ask for an observer when he gets to port. Today for 3rd time in this year, while training officers on vessels clearance to assess the legality of catches and monitoring transshipment volumes, on vessels that had MSC catch. I've seen that no observer was controlling the mixing of certified and non-certified fish."</i></p> <p><i>IPNLF therefore concludes that an absence of evidence of systematic non-compliance does not mean that it does not happen. Compliance data involving the UoC is not transparent and it is therefore quite likely that the CAB could not find any evidence, although it could well be widespread.</i></p> <p><i>A more in-depth analysis of flag state performance of the vessels within the UoC is also required before the CAB can make any assumptions about the level of compliance of these vessels. In the absence of any strong evidence suggesting that systematic non-compliance does not happen, the evidence presented above indicates that this is likely an issue in this fishery. IPNLF recommends that this score should be reduced to SG70.</i></p> <p><i>References:</i></p> <p><i>Francisco Blaha. 2016. One size does not fit all. Retrieved from http://www.franciscoblaha.info/blog/2017/6/13/one-size-does-not-fit-all-frank-zappa</i></p> <p><i>WCPFC-TCC11-2015-RP02</i></p>	

PI	Nature of Comment	Justification	Assessment Team Response
<p><i>PI3.2.4a</i> Evaluation coverage</p>	<p>2</p>	<p><i>IPNLF agrees that there are mechanisms in place to evaluate key parts of the fishery management system, but not all parts. The CAB has not supplied any evidence that all parts of the management system are evaluated.</i></p> <p><i>IPNLF recommends that the CAB either provides evidence justifying the allocated score or to decrease the score to SG80.</i></p>	<p><i>Thank you – your comments have been noted but we disagree and believe the existing score is justified.</i></p>

Nature of Comment <i>(select all that apply)</i>		Justification <i>Please attach additional pages if necessary.</i>	Assessment Team Response
e.g. <input checked="" type="checkbox"/>	<i>I wish to alert the assessment team to important changes in the circumstances of this fishery relevant to the MSC certification.</i>	<i>Additional condition: As mentioned in our position in our broader policy position and rationale document we feel that the fishery should have a condition to determine the distance from a FAD that would constitute actual free school/FAD-free fishing. Such studies should be credible and rigorous and conform to scientific best practice. The precautionary approach should be an integral part of such studies.</i>	<i>Thank you for the comment. While a study (through a Condition) as proposed may be interesting from a scientific perspective, as noted previously it is apparent that there are benefits of fishing on free schools of tuna at a distance of ≥ 1 nm, irrespective of whether tuna are moving between FADs or are in some way distantly associated with FADs at the time they are caught, as evidenced by the cleaner bycatch profile for the 'free school' fishery, in particular with regard to juvenile bigeye tuna (Rice et al. 2014) and silky sharks (Rice & Harley 2013), which are key concerns. The Assessment Team does not consider there to be justification for such a Condition.</i>
<input type="checkbox"/>	<i>I wish to provide information relevant to fulfilment of the conditions of certification.</i>		<i>No change has been made to the report.</i>
<input checked="" type="checkbox"/>	<i>Other (please specify)</i>		

Additional comments on other portions of the report:

1 General: 'main secondary species'

The PCDR states at various points (see pp.150, 152, 154, 156 and 157) that there are no 'main secondary species' in the PNAFTF. One of the ways by which a species, primary or secondary, can become 'main' is as follows (see p.53):

'in cases where a species does not meet the 2% or 5% designated weight thresholds, a species is main if the total catch of the UoA is exceptionally large, such that even small catch proportions of a P2 species significantly impact the affected stocks/populations.'

We think there is a good argument to be made that 'the total catch of the UoA is exceptionally large' and that in turn 'even small catch proportions of a P2 species significantly impact the affected stocks/populations' and hence that there are 'main secondary species' in the PNAFTF.

Assessment Team Response to "General: 'main secondary species'"

Thank you for the comment. We note that the qualifying statement for the 'exceptionally large' criterion is that the catch of the UoA significantly impacts the affected stocks/populations. The PNAFTF is a very clean fishery in general, and there was no secondary species that the Assessment Team considered would meet this qualifying statement, in particular because of the catches in the PNAFTF were very small in comparison to those in other fisheries. Full justifications are included in the introductory section 3.6.1. No change has been made.

2 General: Table 15, at p.54

The PCDR, at p.53, states that:

'Catch data for the PNAFTF were provided to the Assessment Team by the Secretariat for the Pacific Community (SPC), as recorded and reported by independent observers (Table 15). It was confirmed by Steven Hare (SPC, pers. comm.) that the data were provided for purse seine sets that were designated by skippers and verified by observers at the point of setting as being 'freeschool' (i.e., FAD-set catches were not included in the data).'

This table is very important. It is referred to, and relied upon, at various points in the scoring of the Principle 2 PIs. Yet stakeholders are told very little about its construction. It is based on observer reports, sourced from SPC. It is based on just two years of data, namely 2014 and 2015. Stakeholders should be provided with a lot more information about a data set that obviously carries a lot of weight in terms of the assessment. It is only fair to ask the following questions with a view to understanding how representative the data are:

- (1) Why has this data not previously been presented to WCPFC's Scientific Committee and why is not contained in peer-reviewed papers or reports that are widely available to the wiser public and interested stakeholders?
- (2) For each of the twelve months in each of 2014 and 2015, how many observers' reports contributed to the data?
- (3) What level of cross-verification of data was done or was it accepted at face value?
- (4) What proportion of the total number of observers' reports within the PNAFTF does this represent?
- (5) Why are only two years used – why not at least three?
- (6) Who prepared the table – SPC or the CAB?
- (7) Can the analysis be described as statistically robust?

Assessment Team Response to “General: ‘Table 15, at P.54’”

Thank you for the comment. The data were supplied to the CAB by the SPC as the verified observer data for the years 2014 and 2015. In common with other MSC assessments, some simple working was undertaken to present the data in a way that was helpful for the purposes of the MSC assessment (i.e., the percentage contribution for each species was calculated, and species were ordered).

With respect to the presentation of the most recent two years, it is noted that the data are an update from the data presented for the last assessment (see Banks et al. 2011, Table 8, P.44), and are very similar other than that the ordering of some species has changed (e.g., whale shark was ahead of silky shark and blue marlin in the earlier data), and more detail is provided in the recent data (e.g., giant manta are broken out from ‘manta rays’ in some cases).

The fact that the data cover more than 60% of the PNAFTF tuna catch for the two years presented gives the Assessment team confidence that they are representative of the fishery. Details have been added to show that the observer sampling was of 20,029 (11,037 successful) sets in 2014, and 15,113 (9,086 successful) sets in 2015.

IPNLF 3 - IPNLF’s review of traceability in the PNA fishery

IPNLF Traceability review of the PNA fishery

Our comments on traceability in the PNA fishery are included in the text boxes underneath the relevant text of section 5.2 and in Table 29 on *traceability risk factors and mitigation approaches*.

The PCDR contains the following on at-sea traceability:

5.2 Traceability within the fishery

In order to support the MSC certification of the free school purse seine fishery for skipjack tuna and yellowfin tuna in PNA waters, the PNA have implemented a rigorous traceability monitoring system. This was described in detail recently by Daume & Morison (2016a), and is summarised below.

Vessels operating in the PNAFTF are required to be equipped with an operating VMS, and tracking is undertaken rigorously as part of the VDS that is employed to both monitor effort and assess uptake of fishing days purchased from the different PNA Parties.

Technology has been available since the fishery was certified in 2010 to integrate locator buoys on FADS with VMS. Such a system would drastically improve rigour in determining the distances that vessels are from registered FADs when sets are made. It will not account for fishing on unregistered FADs, but will nevertheless be a first step towards an improved traceability system.

Despite 5 years of certification such a system is not in place yet. The PNA countries have the legal framework to adopt such a system and enforce it even if there is not support for it at the WCPFC.

Assessment Team Response to “5.2 Traceability within the fishery”

Thank you for the comment. We agree that such a monitoring programme may support the ≥ 1 nm FAD measure for FADs where they are equipped with locator buoys, but the IPNLF notes that “FADS are designed to be difficult to detect with radar”, and as noted elsewhere in the report, the definition of FADs as applied in the WCPFC (and in this assessment) includes a wide range of objects that the technology would not be useful for. It may be appropriate for the IPNLF to take this issue up in management fora.

Vessels are also required to carry observers at all times, including before commencing fishing when entering the zone initially. As well as being subject to regional Pacific Island Regional Fisheries Officer (PIRFO) standards, observers with MSC chain of custody responsibilities receive additional training on recording responsibilities. These include:

In our opinion too much emphasis is placed on the role of observers. There are some serious health and safety concerns when expecting scientific observers to play an enforcement role.

Reports of intimidation, threats, violence and even deaths of observers operating in the WCPFC are common. It is also known that observers have been bribed to declare FAD sets as free school sets.

An observer's call on whether a set constitutes a free school or FAD set carries a price premium of US\$ 100-150/tonne. This creates an atmosphere conducive to intimidation and bribery.

Observers cannot be expected to be present during all the various operations of setting, hauling and brailing catch on board. They have to eat and sleep and standard practice is to have only one observer on board at a time.

If observers are to form an integral part of the at-sea traceability system there should be at least two of them deployed at the same time per vessel. This will also greatly address health and safety risks observers might face.

Assessment Team Response

Thank you for the comment. We are greatly appreciative of the role undertaken by observers, and are fully supportive of measures to protect them. We note that checks and balances in the system are intended to ensure that no individual is solely responsible for determining MSC eligibility, and suggest that the IPNLF takes up the issue of observer safety with the MSC as part of the next Standard review.

Monitoring the one nautical mile (nm) minimum distance to a FAD that is required in order to qualify as a free school set within the MSC purse seine fishery (one nm is specified as the minimum distance from a FAD for the FAD closure period by PNA 2008, CMM 2008-01 and CMM 2009-02).

How is an observer expected to make a call on whether a FAD is 1 nautical mile, >1 nm or <1 nm from a purse seiner when a set is made?

FADS are designed to be difficult to detect with radar. A visual estimate will almost certainly be inaccurate and will lead to inconsistencies between observers.

Assessment Team Response

Thank you for the comment. As previously, we note that it is not possible to confirm that any management measure is perfectly enforced and complied with, but purse seine vessels are equipped with forward looking sonar which allows distance to objects underwater to be determined, which gives a second method of distance measurement over visual observations. We also note that the measure is applied within the WCPFC more generally for the 4 month FAD closure (and so is not specific to the MSC process), and the catch composition from the free school fishery show that the measure is generally working very well to minimise bycatch of vulnerable species (i.e., silky shark and bigeye tuna). No changes have been made to the report.

Monitoring the catch composition during hauling, in order to identify sets that include a whaleshark or other object acting as a FAD, as well as sets which include FAD-associated

indicator species (e.g., oceanic puffer fish, ocean triggerfish and drummer) even if no FAD or objects that act as FADs are observed in the net. Any such sets are deemed to have come from a FAD set, and are therefore ineligible to go forward to carry the MSC logo.

There are many opportunities for indicator species to be removed or to be lost during transfers of catch when brailing, when loading catch in wells, during transshipments and when catch is discharged from vessels.
 much emphasis is placed on the relevance of indicator species in catches

Assessment Team Response

Thank you for the comment. We cannot state that there would be no opportunities for FAD-associated indicator species to be removed from the catch. However, again, monitoring the catch for such species is only one part of the monitoring that goes in to determining MSC eligibility, and the catch profile of the free school fishery shows that the approach is generally working very well to minimise bycatch of vulnerable species.

- Monitoring catch composition during any transfers between storage wells, to ensure traceability but also to determine if FAD-associated species are present and to exclude all catches from such sets from MSC eligibility.
- There is no at-sea processing in the PNAFTF, and transshipment is permitted only in port and under strict monitoring specifications. All MSC wells are required to be suitably MSC labelled and noted on the observer reports. The observers ensure only MSC wells are opened at the time, conveyors and other equipment are clear of non-MSC catch, and the carrier keeps the eligible fish physically separated and labelled at all times.
- A requirement for any MSC fish to be stored in separate wells or in double netted compounds if stored in wells with other non-MSC fish.

Traceability Factor	Risk factor and mitigation, where relevant	Assessment team response
Potential for non-certified gear/s to be used within the fishery	<p>IPNLF argues that the risk to use FADs whilst fishing is <u>not negligible</u>.</p> <p>According to Blaha (2016) some observations he had do not add up; quoted here. <i>“Furthermore, from my usual job checking training boarding officer on purseiners, I have noticed free-schools sets in the evenings or prior sunrise. From my experience, the only way to do a free school set at night is with a perfect full moon and even so is very weird.</i></p> <p><i>I suspect that “free schooling” (new verb!) of FAD-associated school is going on (while the observer sleeps?). The support vessels will temporally remove or push away a FAD and then the Purse Seiner drift towards that location at very low engine revs while keeping a sonar eye on the biomass, then the school will naturally move and associate with the Vessel. Once</i></p>	<p>Thank you for the comment. In this context, ‘negligible’ isn’t explicitly defined in the MSC CR, but the Assessment Team understands it to mean that while an infraction may occur, such an infraction will have very little or no impact on the overall confidence in the system.</p>

	<p><i>at a safe distance, voila, you have a 'free school.'</i></p> <p><u>References:</u></p> <p>Blaha, F. 2016. One size does not fit all. Retrieved from http://www.franciscoblaha.info/blog/2017/6/13/on-e-size-does-not-fit-all-frank-zappa</p>	
<p>Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction</p>	<p>IPNLF notices that the entire traceability chain risks lie with the integrity of a single observer. The observer can't be ever-present. IPNLF does not think that the risks are negligible.</p> <p>There are three instances where the indicator species can be removed. While brailing most of the bycatch is removed, including indicator species. The catch is then transferred to the wells. Then the fish is moved from the well to the dry locker one by one, so if there are any indicator species in the well there is a 2nd chance to remove it and the 3rd instance is during transshipment itself.</p> <p>Blaha (2016) expressed his concern as: <i>"Finally, I'm not comfortable with the use of fisheries observer to "guarantee" the "catches and chain of custody" something that is only required in the Tuna Fisheries.</i></p> <p><i>In the Pacific, observers have a lot on their hands already, scientific data, compliance and MarPol, in an already complex set up. So having them involved in a private commercial enterprise does not seem ethical nor fair. While observers are getting a payment plus for the MSC work, these may offer chances were a conflict of interest may arise. Furthermore, the observer is supposed to stay on board for landing or transshipment of MSC catch, which is quite a lot to ask for an observer when he gets to port.</i></p> <p><i>Today for 3rd time in this year, while training officers on vessels clearance to assess the legality of catches and monitoring transshipment volumes, on vessels that had MSC catch. I've seen that no observer was controlling the mixing of certified and non-certified fish"</i></p> <p>Observers that are faced with deployments on board fishing vessels that last weeks or even months, are potentially subject to bribes, harassment, threats, intimidation, and even injury or death at the hands of captains and crew who</p>	<p>Thank you for the comment As noted above, the Assessment Team cannot state that there are no opportunities for FAD-associated indicator species to be removed from the catch. However, again, monitoring the catch for such species is only one part of the monitoring that goes in to determining MSC eligibility, and the catch profile of the free school fishery shows that the approach is generally working very well to minimise bycatch of vulnerable species.</p> <p>We note that observer debriefs are conducted, which are in part designed to determine the potential for bribery to have occurred.</p> <p>The Assessment Team is satisfied that the systems in place are appropriate, but again we commend the work done by observers and would suggest that the IPNLF participates in future MSC Standard reviews.</p>

	<p>fail to appreciate and respect the observers monitoring and oversight role (WWF, 2013).</p> <p>The potential problem of purposely classifying FAD fished catch as MSC certified is further highlighted in a chapter of the book, <i>Fisheries in the Pacific; The Challenges of Governance and Sustainability</i>, Rauchholz (2016) commented on his experience with the observers. <i>For the observers, taking note of violations is a difficult task when one also depends on the ship and its crew for one's livelihood and shares a confined living space over months at sea. The captains and their crew as well as the observers know the role that each plays and are constantly trying to navigate this difficult world in which they work. If they report incidents which the ship captain does not want to see recorded and reported, the observers might be at risk and threatened or alternatively attempted to be bribed. Attempts of being bribed have been reported by Pohnpeian observers in the past while at the same time others have been seen driving with cars beyond their pay scale. On the other hand, observers are only tasked with observing and documenting what they see while on tour with fishing vessels. Their superiors on land who read and analyse their reports must identify areas in need of prosecution or fining for violation of existing laws and regulations. At this operational level, corruption may further enter into the reporting system as an observer's superior willing to enquire about violations may contact ship captains. In return, the ship captain and his senior staff may respond by offering to pay a bribe in lieu of being reported or fined. For a company operating 50 vessels in the region, paying such "fees" is nothing. According to Rauchholz enquiries with persons in the industry, these and other violations abound and, for many, are considered normal. One source familiar with these practices from personal experience and who spoke to me under the condition of anonymity told me it was "standard procedure" in the industry. In addition, many Chinese and Taiwanese captains and officers are poorly paid and thus feel forced to make some additional money on the side by not reporting their total tonnage of catch or by reporting different species caught so as to make a profit off the sales. These activities are reflected in the reports of observers who can report these illicit activities for most foreign fishing nations in the region, foremost though for the Chinese and Taiwanese active in Micronesian or Papua New Guinean waters Rauchholz (2016).</i></p> <p><u>References:</u></p>	
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	<p>Blaha, F. 2016. One size does not fit all. Retrieved from http://www.franciscoblaha.info/blog/2017/6/13/on-e-size-does-not-fit-all-frank-zappa</p> <p>Rauchholz M. Resources, boundaries and governance: what future for marine resources in Micronesia? In Fisheries in the Pacific. 2016. The challenges of governance and sustainability. EDs Fache, E. and S. Pauwels. Pacific credo publications.p49-76.</p> <p>WWF and the Association of Professional Observers call for measures against IUU fishing. 2013. Retrieved from: http://wwf.panda.org/?210795/WWF-and-the-Association-of-Professional-Observers-call-for-measures-against-IUU-fishing</p>	
<p>Risks of mixing between certified and non-certified catch during transshipment</p>	<p>IPNLF does not believe that the risk is negligible as was outlined above.</p>	<p>Thank you for the comment. We continue to contend that the risk is negligible, given the level of observer coverage and other checks in place.</p>

Appendix 8: Surveillance frequency

Table 36: Surveillance level rationale.

Year	Surveillance activity	Number of auditors	Rationale
1	Level 6 (default surveillance)	Three	The PNAFTF has been certified previously, but Conditions of Certification have been set against PIs in all three MSC Principles. The CAB considers it appropriate to implement a Level 6 (default) surveillance schedule, and to require three auditors to be involved in annual surveillance audits (CR 7.23, MSC 2014).

Table 37: Timing of surveillance audit.

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	To be determined	To be determined	CR7.23.6.1 (MSC 2014) states the following : "CABs may elect to undertake surveillance audits up to 6 months earlier or later than the anniversary date, where this deviation is appropriate given the circumstances of the fishery." As the PNAFTF has not yet been recertified, and it may be appropriate to undertake surveillance before or after the anniversary date, the proposed date of surveillance cannot yet be determined.

Table 38: Fishery surveillance programme.

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit

Appendix 9: Objections process

An Notice of Objection was raised to the re-certification of the PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery by the International Pole and Line foundation which was accepted to proceed to objection by the Independent Adjudicator (IA) and published on the MSC website on the 26th September 2017.

The objection was unsuccessful allowing for the re-certification of the fishery. Following the objection process, as per CR2.0 PD2.11.1 Public Certification Report shall include all decisions made by the independent adjudicator and shall indicate all the changes to the Final Report and Determination that have been made as a result of the objection. No changes were made to the Final Report as a result of the objection.

#1 IA decision 20171010

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR PURSUANT TO FCR PD 2.4

1. By Notice of Objection dated 26 September 2017 the International Pole and Line Foundation (“the IPNLF”) has submitted an Objection to the report and recommendation of Acoura Marine Ltd, the Conformity Assessment Body (CAB) to certify PNA Western and Central Pacific and Skipjack and Yellow Fun Unassociated Non FAD Purse Seine (hereafter shortened to “PNA Tuna” for convenience). The IPNLF objects to the proposed certification.
2. The background to the Notice of Objection is set out in my first decision, dated 29 September 2017. In that decision I required the IPNLF to provide further clarification pursuant to PD 2.4.1.2 by 6 October 2017.

3. By a further Notice of Objection the INPLF have filed, what is in effect, an amended Notice of Objection. The form is dated 26 September 2017 but was received by the Marine Stewardship Council (MSC) on 6 October 2017. It was filed with a covering email of the same date, from Mr Martin Purves, the Managing Director of IPNLF, raising a number of ancillary matters.
4. The IPNLF have maintained their objection to the scoring as set out in their original Notice of Objection, and they have amended their original objection pursuant to PD 2.7.2.1 and changed this from a submission in respect of a “procedural” irregularity to a non procedural, other, irregularity. PD 2.7.2.1 states:

“There was a serious procedural or other irregularity in the fishery assessment process that was material to the fairness of the assessment;”

5. I must consider the amended Notice pursuant to PD 2.4.5 which states:

“If the independent adjudicator, in his or her discretion, determines that the amended notice of objection submitted under PD2.4.2 or PD2.4.3 does not disclose any of the grounds set out in PD2.3.4, is not in the form required by these procedures, has no reasonable prospect of success or is spurious or vexatious, the independent adjudicator shall dismiss the objection, giving written reasons therefore.”

6. The original and amended Notice are in the form required and were filed within the prescribed timescales. As set out in my first decision, IPNLF, made written submissions to the CAB during the fishery assessment process. The requirements of PD 2.3.1 to PD 2.3.3 are met. I note the comments made by Mr Purvis that the original Notice was set out in an earlier version of the MSC Notice of Objection “form”. I do not consider this any obstacle to the validity of the Notice, as PD 2.3.3 only requires the Notice be provided in the format “prescribed by the MSC.” Both the first and second iterations of the relevant forms are prescribed, although it is preferable the amended Notice is set out on the more recent prescribed form.
7. The amended Notice sets out the basis for a submission the CAB made a serious “other” (non-procedural) irregularity. This challenges the CAB’s decision to “select the units of assessment on the basis of differences in practice alone – i.e. on the basis of the difference between fishing on unassociated schools, as one practice (the practice to be certified), and fishing on FAD-associated schools, as the other practice (the practice not to be certified).” The effect of this, it is said, is that: “it has enabled the CAB, erroneously, to (i) compartmentalise the PNA purse-seine tuna fishery into a FAD-free element (for MSC certification) and a FAD element (not for MSC certification) and so (ii) conduct its assessment on only the FAD-free element of the fishery.”

8. This non procedural error is said to be a serious irregularity for four reasons: (i) the concept of “practice” is undefined or poorly defined; (ii) the selection of the unit of Assessment on ‘practice’ alone is contrary to the UN Food And Agriculture Organisation (FAO) Guidelines and (iii) the “precautionary approach”; and (iv) the reliance on “human observes” to make good the selection of the Unit of Assessment based on ‘practice’, is inappropriate.
9. An academic article by Guillermo Moreno et al entitled: *“To FAD or not to FAD: A challenge to the marine stewardship council and its conformity assessment bodies on the use of units of assessment and units of certification for industrial purse seine tuna fisheries”* has been filed, but without any clear reference to it in the Notice. I have read the article but not taken it into account for the purposes of this decision.
10. Considering PD 2.3.4, I am clear the Notice, as amended, meets the minimum requirements for validity. It clearly sets out the alleged error in respect of the Unit of Assessment and explains clearly why this was material to the determination, and as I read the Notice, the fairness of the assessment. It also sets out a summary of the “evidence” relied upon in support. Evidence is placed in inverted commas, because strictly speaking the supporting material is a submission on the legality and construction of the FCR.
11. I am therefore satisfied pursuant to PD 2.7.2.1 the amended Notice of Objection meets the requirements of PD 2.3.4.
12. Turning to PD 2.4.2, which states:

For purposes of this section, an objection has a “reasonable prospect of success” if, in the view of the independent adjudicator:

PD2.4.2.1 It is not spurious or vexatious;

PD2.4.2.2 Some evidence is presented on the basis of which the independent adjudicator could reasonably expect to determine that one or more of the conditions set forth in PD2.7.2 are satisfied.

13. From my reading of the Notice and the CAB report the objection raises a point which at this early stage appears to be neither spurious nor vexatious. Secondly, given the submissions made there is a basis upon which an adjudicator could reasonably determine the conditions of PD 2.7.2 are met, because the CAB made an error when determining the Unit of Assessment. I have carefully re-read the CAB report and I cannot find in the body of the report a discussion which clearly answers the concerns raised by the objector.

14. The original and amended Notice of Objection sets out the IPNLF objections in respect of 24 separate challenges related to the CAB's scoring. It is said this provides a basis for adjudication pursuant to PD 2.7.2.3.

15. I have carefully considered the Notice of Objection. It plainly cannot be said the objections in respect of scoring are spurious or vexatious. At each stage of the Notice IPNLF raises, what seems to me at this early stage, appropriate challenges with intelligible reasoning. For this reason, and given the careful way the IPNLF have set out their objection, I am persuaded the objection in respect of scoring is neither spurious nor vexatious and the principle set out at PD 2.4.2.2 is also met.

16. Therefore, this Objection will proceed.

17. I direct as follows:
 - a. Pursuant to PD 2.4.7.1 the MSC shall post the Notice of Objection, as amended, on their website forthwith;
 - b. Pursuant to PD 2.4.8 the fishery client and any stakeholder who participated in the fishery assessment process (other than IPNLF) may file written representations on matters raised in the amended Notice of Objection and if they choose to do so, they shall file those with the MSC by 17:00 GMT 31 October 2017;
 - c. Pursuant to PD 2.5.1 the CAB shall comply with the requirements of PD 2.5.1.1 to PD 2.5.1.4 by 17:00 GMT 7 November 2017.

John McKendrick QC
Independent Adjudicator

#2 IA decision 20171101

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

1. By way of an email dated 27 October 2017, the INPL, through its managing director, wrote the following:

“Thank you for your detailed instructions on the process going forward. Apologies also for not acknowledging your communication sooner. I have been traveling for the past number of weeks and did not always have access to emails.

In order to fully prepare for the objection we believe that we would require access to additional information that was not accessible to stakeholders involved in the recertification assessment of the PNA Tuna fishery to fully understand how the assessment team came to certain conclusions. We feel that our position could be prejudiced unless we have access to the same data sources as the assessment team as this information could have made a fundamental difference in how the fishery was assessed and scored. We assume that the data sources referred to was made available to the assessment team as it would be unusual not to have evaluated this type of information in the normal course of a MSC assessment. The following data sources are of relevance in this regard:

1. The Pacific Forum Fisheries Agency (FFA) has set up a **Regional Register of Foreign Fishing Vessels** to monitor the activities of the many distant-water fleets operating in the exclusive economic zones (EEZs) of member countries. This MCS (Monitoring, Control and Surveillance) function of the FFA Secretariat means that the compliance with the relevant conservation and management measures of vessels operating in the PNA Tuna fishery would have been recorded. The so-called **FFA Compliance Register** will provide insights into the individual track record of purse seiners involved in

the PNA fishery and will, among other things, provide better insight to their compliance with shark finning regulations and other issues which we raised in our objection. Without having access to these records we have to rely entirely on a judgement call made by the assessment team on whether these vessels are compliant or not.

2. Fisheries observers are deployed on purse seiners operating in the PNA Tuna fishery through the Regional Observer Programme (ROP). The Pacific Community (SPC) is the principal scientific and technical organisation in the Pacific region and their Oceanic Fisheries Programme (OFP) has been processing observer data on behalf of their member countries for more than 15 years. In order to fully understand the way the Unit of Assessment has been defined and executed in the fishery as well as getting a better understanding of individual observations on shark finning and other compliance issues, we feel it is pertinent to have access to original, raw observer data.

We would therefore ask your advice in how to go about obtaining this information/data as we feel a direct approach to the CAB is probably not the correct approach at this stage of procedures.”

2. Prompted by this, I arranged for the following to be sent to the CAB:
 1. Does the CAB have the information requested by the IPNLF?
 2. Does the CAB consent to disclose the information requested?
 3. If the CAB is content to disclose it, what would be the timescales for doing so?
 4. If the CAB is not content to disclose, what are the reasons for taking that position?
3. Acoura, the relevant CAB, through their Head of Fisheries helpfully responded by email on 30 October 2017, writing:

Thank you for relaying the request from the IPNLF, together with Mr. McKendrick’s questions.

Please forgive the need to ask my own questions, but before responding I should note that because work undertaken by the CAB and team is rechargeable to the client, there is of course a need to ensure that time is committed only when necessary.

Before responding, therefore, I would like to note that we are not clear why the objector should be seeking such information post assessment and post submission of the Notice of Objection (NoO), the matters of which are now set (CR2.0 PD 2.3.4.3). Is it the case that the information requested is granted eligibility because it underpins some argument contained within the NoO? Acoura would welcome clarification on this matter.

We also note that CR2.0: 4.4.1 requires the CAB to ensure that unpublished **key** information, which is necessary for stakeholders to be able to properly review the logic used by the team to score a PI, are made available. Acoura is seeking clarification from the team, but at this stage we do not think we have the information requested. If we do have the information, we do not think it is 'key' in terms of scoring any PI, and so again we are not clear as to why the IPNLF is requesting this information. Acoura would welcome clarification on why the IPNLF considers the information to be 'key'.

Nevertheless, to answer the IA questions:

1. Does the CAB have the information requested by the IPNLF? At the present time, we do not think that we have the information. We are working within time zone constraints, but are checking with the team to confirm this as fast as we can.

2. Does the CAB consent to disclose the information requested?

If (1) is met and the information is determined to be 'key', then CR2.0: 4.4 requires that the CAB makes it available.

3. If the CAB is content to disclose it, what would be the timescales for doing so?

If (1 & 2) were answered satisfactorily then the CAB would need to ascertain if the information were freely available to the objectors. If it were not freely available then the CAB will need to seek the permission of the data owner to share it, perhaps with conditions upon release CR2.0: 4.5. If the owner of the information were not able or willing to share then the CAB would need to apply CR2.0: 4.3 and seek a variation. Timescales for release are therefore not necessarily entirely within the CAB gift.

4. If the CAB is not content to disclose, what are the reasons for taking that position?

Items within (1, 2, 3) may lead to reasons for the CAB being unable to release the information such as

- a. The information was not used by the team to underpin scoring
- b. The information is already freely available to the objector be that through
 - i. the Final Report

- ii. the objector making a direct request to the owner
 - iii. the information being widely available
- c. The information owner may not be willing to share the information

May we encourage the IA to consider sharing the IPNLF information request with the client so that they may be allowed to express their opinion and consider if they may have access to the information?”

4. I have considered the request and the response carefully. I am not prepared, at this stage, to make any directions in respect of disclosure of documents. Nor am I being asked to.
5. The parties can, and should, be discussing any such requests amongst themselves and seeking to have them resolved. All must take a proportionate approach, mindful of the timescales and where we are in the process.
6. If there can be no agreement, any party can make an application to me, setting out the jurisdiction they submit I exercise to disclose any requested information, the order requested and reasons why an order is required.
7. The deadlines in my previous order remain unaltered.

John McKendrick QC
Independent Adjudicator

#3 IA decision 20171115

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

1. Pursuant to PD 2.5.1, the CAB filed its formal response to the Notice of Objection on 7 November 2017.

2. PD 2.5.3 states:

PD2.5.3 Upon receipt of the response by the CAB, the independent adjudicator shall consult with the objector(s), the fishery client(s) and the CAB in order to determine whether the response of the CAB, including any proposed changes to the Final Report and Determination, adequately addresses the issues raised in the notice of objection.

PD2.5.3.1 The independent adjudicator shall strive to conclude such consultations within a period of 10 days but may if necessary, at his or her discretion after consultation with the parties, extend such period if it appears that there is a real and imminent prospect of reaching a solution that is acceptable to all relevant parties.

3. Through Ms Gage the parties were asked to provide their views in terms of timing and location of a hearing, should consultation not be successful and adjudication required.

4. The Fishery Client responded on 11 November 2017:

“The december date works best for us and we had been working on that basis.

January due to southern summer holiday season means, some can not make it. As for location, our preference would be Australia, but could work with US west coast or hawaii, if not north asia, eg Japan might be a serious option. I understand the IA is US based ?, otherwise London or Dubai.

Please note all of these locations incur considerable travel costs and time for PNA and our CAB.”

5. The Objector sent a detailed email on 14 November 2017. This email amounts to an application: (i) for an extension of time for the ten day consultation period and (ii) that the ten day period should not begin until the information sought from the CAB on 6 November 2017 is provided. Additionally a hearing in late January 2018 was also sought. The email also noted:

“It will come as no surprise to you to hear that we take issue with many of the points made by the PNA in its letter”

6. The ten day period expires on 22 November, that is to say in one week’s time. I reject the Objector’s application for the consultation period to be extended beyond the ten day period. The test to be applied in PD 2.5.3.1 is plainly not met and I find there is no “real and imminent prospect of reaching a solution that is acceptable to all relevant parties”. I have read and considered the CAB’s response in the light of the Notice of Objection: there are issues of principled significance. This is reinforced by the email from the Objector of 14 November 2017.
7. I will make no decision on whether adjudication is required until 22 November 2017, but whilst I maintain an open mind, in my judgement, unless others file further opinions, it remains likely.
8. The Objector refers once more to the information it seeks from the CAB. The objector has not asked me to rule on this issue. In the absence of a proper application setting out the jurisdiction of an adjudicator to require disclosure of documents and why it is necessary to exercise the jurisdiction in these proceedings in respect of the documents the objector request from the CAB, I am not prepared for this issue to delay the proceedings and all parties are able to note the timescales required by PD 2.
9. PD 2.6.1 requires an Adjudicator to hold a hearing within 30 days of the date of notification of adjudication. If all parties agree to go beyond that date, it can be extended. There is no current agreement to go beyond that period. Should that materialise, Ms Gage should be notified immediately. Otherwise, I remain of the view that if adjudication is required (and I urge the parties to consider whether agreement can be reached before 22 November 2017) then a hearing should take place on Monday 18 December 2017 in the U.S.A.

John McKendrick QC
Independent Adjudicator 15 November 2017

IA decision 20171124

#4 IA decision 20171124

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

1. Pursuant to PD 2.5.1, the CAB filed and served its formal response to the Notice of Objection on 7 November 2017.
2. The parties have been unable to resolve the objection by way of consultation. The issues in dispute remain significant and have at no stage in these proceedings narrowed. Pursuant to PD 2.5.3.1 there is no real and imminent prospect of a solution being reached that is acceptable to all parties. Notice is hereby given to all parties that the adjudication phase commences as of today's date.
3. PD 2.6.1 requires an Adjudicator to hold a hearing within 30 days of the date of notification of adjudication. If the parties agree (PD 2.6.1) or there are exceptional circumstances (PD 2.10.1.15) this period may be extended.
4. I note the reservations and difficulties of the objector and the CAB to holding a hearing in December 2017. It is unlikely the Fishery Client would want the objection hearing to proceed in the absence of the CAB. The parties are to agree dates of availability during the week of 8 or 15 January 2018 (against which I shall have to consider my own availability).

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The hearing will be listed with a time estimate of two days, unless parties make submissions to shorten or extend this time estimate.

5. Considerable persuasion will be required to extend the hearing beyond 19 January 2018, given the time necessary to receive any post hearing submissions and produce a written decision. No one party's non availability can guarantee a hearing. If an adjudicator grants any representative a veto over hearings dates, delays will arise. The adjudication will try to take into account parties', and their representatives', availability, but these will not be determinative. The parties are capable of briefing others to represent their respective organisations if needed. The objection adjudication process is designed to be both proportionate and expeditious.

6. By way of an application, dated 23 November 2017, the objector seeks disclosure of the documents identified in its written application at paragraph 13, as expanded upon in the following paragraphs. A second email from the objector was sent on the same date making further submissions. Any party which opposes the application shall file and serve submissions in response by 5pm GMT, 30 November 2017, thereafter a determination will be made.

John McKendrick QC
Independent Adjudicator 24 November 2017

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#5 IA decision 20171205

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

Introduction

1. By way of an application dated 23 November the Objector, the IPNLF seeks disclosure of: i. compliance data in respect of shark finning (in particular evidence that PNA member countries are prosecuting vessel masters for shark finning violations and the evidence which provides the

foundation for the analysis in Table 16 of the CAB's PNA Tuna report) and ii. 'catch and by-catch data' from observers (in particular the data under-pinning Table 15 of the CAB report).

2. The application is made against the Conformity Assessment Body (CAB), Acoura.
3. By way of responses received on 30 November 2017 both the CAB and the fishery client (Parties to the Naura Agreement (PNA)) oppose the application for disclosure.
4. Two questions therefore arise:
 - a. do the MSC Fisheries Certification Requirements (FCR) grant a jurisdiction to an Independent Adjudicator (IA) to make a disclosure order against a CAB?;
 - b. and if such a jurisdiction does exist, should it be exercised on the facts to which this application gives rise in these proceedings?

The FCR Scheme

5. The parties, and the Objector, acknowledge there is no express provision within the FCR to grant an IA power to make disclosure orders. The argument the Objector presents is that a disclosure order provision is implied within the FCR scheme.
6. The FCR acknowledges at the outset that the FCR is a document directed to CABs. Section 1 states:

MSC Fisheries Certification Requirements are for CAB's use when assessing fisheries against the MSC's Fisheries Standard.

7. This is important because a number of sections of the FCR deal with information handling. Importantly, those sections are directive in respect of the CAB. They set out the MSC's determination of what it is a CAB is required to do.
8. Sections 4.3 to 4.5 of the FCR deal with access to information. They state:

4.3 Use of confidential information in fishery assessments

- 4.3.1 The CAB shall encourage stakeholders not to withhold information, including their concerns and knowledge about the fishery in question.

4.3.2 The CAB shall inform stakeholders that unless covered by 4.4.1 below any information that they cannot share with all stakeholders, even under a confidentiality agreement, shall not be:

- . 4.3.2.1 Referenced in the assessment.
 - . 4.3.2.2 Used in determining the assessment outcome.
 - . 4.3.2.3 Used as the basis for an objection to a certification.
- 4.3.3. The CAB shall ensure that information kept confidential is restricted to:
- . 4.3.3.1 Financial transactions about certification.
 - . 4.3.3.2 The financial affairs of individual companies or information that may lead to this information being made public.
 - . 4.3.3.3 Information that is the subject of relevant national privacy or data protection legislation in the client's country.

4.3.4 If the CAB wishes to use information that the owner requires to be kept confidential and that is additional to that specified in 4.3.3, the CAB shall submit a variation request from the requirements 4.3.3 to the MSC.

4.3.4.1 If the variation request is accepted by the MSC, the CAB may use the information in its assessment.

4.4 Access to information

4.4.1 The CAB shall ensure that un-published key information, which is necessary for stakeholders to be able to properly review the logic used by the team to score a PI, are made available.

- . 4.4.1.1 The CAB shall make unpublished key information available before the posting of the Public Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process until such time as a certification decision is made.
- . 4.4.1.2 The CAB shall note that unpublished information does not include peer- reviewed or grey literature.
- . 4.4.1.3 The CAB shall note that providing the information referred to in 4.4.1.2 is made available to stakeholders, this information does not have to be formally published in the public domain.

4.5 Confidentiality agreements

4.5.1 The owner of key information may require stakeholders sign confidentiality agreements before granting access to it. In these cases the CAB shall:

- . 4.5.1.1 Require those requesting access to key information to do so in writing.

- . 4.5.1.2 Ensure signed confidentiality agreements are in place before permitting access to the confidential information.
- 4.5.2 The CAB may use the key information in its assessment even if some or all stakeholders refuse to sign a confidentiality agreement.
- 9. Each of these provisions places obligations upon the CAB.
- 10. PD 2.1 states (emphasis added):

PD2.1.1 The purpose of the Objections Procedure is to provide an orderly, structured, transparent and independent process by which objections to the Final Report and Determination of a Conformity Assessment Body (CAB) can be resolved.

PD2.1.1.1 It is not the purpose of the Objections Procedure to review the subject fishery against the MSC Fisheries Standard, but to determine whether the CAB made an error of procedure, scoring or condition setting that is material to the determination or the fairness of the assessment.

- 11. PD 2.6 sets out further rules in respect of adjudication, the following are particularly relevant:

PD2.6.5 The independent adjudicator shall evaluate objections solely on the basis of:

PD2.6.5.1

The record, which shall include and be limited to:

- a. The Final Report of the CAB and the record on which the Final Report was based, including written submissions and reports provided to the CAB during the assessment process, the written record of oral, written or documentary evidence submitted in the assessment process, as well as any other evidence referenced or cited in the final report;
- b. The notice of objection;
- c. Any written representations submitted pursuant to PD2.4.8 and PD2.6.4;
- d. Any representations made by any party at an oral hearing pursuant to these procedures; and
- e. Other clarifications required by the independent adjudicator.

PD 2.6.5.2 Any additional information, not forming part of the record, that was in existence prior to the posting of the Public Comment Draft Report and is relevant to issues raised in the notice of objection that:

- a. Was known or should reasonably have been known to any party to the assessment process; and
- b. should reasonably have been made available to the CAB; and
- c. If considered, could have been material to the determination or the fairness of the assessment.

PD 2.6.5.3 The MSC Fisheries Standards (Annexes SA, SB, SC and SD); and

PD 2.6.5.4 The FCR current at the time of the assessment in question, together with GFCR and amendments thereof made by the MSC Technical Advisory Board and the Board of Trustees, any related interpretations to these documents whether or not of mandatory effect with regard to CAB conformity made by the MSC and MSC's accreditation body.

PD2.6.6 The independent adjudicator may not consider issues not raised in the notice of objection, even if the independent adjudicator is of the view that a particular issue should have been raised.

PD2.6.6.1 In no case shall the independent adjudicator substitute his or her own views or findings of fact for those of the CAB.

Discussion

12. It is important to read the provisions of the FCR holistically and in a common sense manner. I accept the Objector's argument that even if a provision is not provided for within the FCR, that does not automatically result in there being no implied provision. There is for example no expression provision permitting an IA to question a witness or advocate but that is plainly implied in the scheme. However, the MSC FCR should not be subject to over expansive interpretation. The MSC is a voluntary organisation that those who wish to, can adhere to. It would be wrong for the FCR to be interpreted in such a way as to impose obligations on those bound by the terms of the FCR which were not apparent or capable of common sense implication. That is the approach I adopt when considering the interpretation of the FCR.
13. My conclusion is IAs have not been granted an implied power to make disclosure orders against a CAB. My reasons are as follows.
14. First, here is no express power to make a disclosure order pursuant to the FCR. The fact there is no expressly provided for disclosure provision is significant. The drafters of the FCR were careful to ensure ancillary matters were dealt with, when the nature and scope of an IA's powers were

- created. Ancillary powers to extend time and make rules for the conduct of hearing were expressly provided. Notwithstanding the fact the FCR does explicitly grapple with access to information (FCR 4.3 to 4.5) it provides no powers to the IA in respect of these provisions.
15. Secondly, as noted above, the FCR is a document directed at the CAB. FCR 4.3 to 4.5 sets out requirements in respect of the CAB's duties to manage access to information. An IA has no powers in respect of these provisions. The drafters of the FCR have made clear these are issues to be determined by the CAB, which is an independent body, appointed by the MSC, to certify the fishery client. The judgements made in respect of the regulation of 4.3 to 4.5 involve the CAB's assessment of the information. These are substantive and technical matters.
 16. Thirdly, PD 2.6.6.1 states "In no case shall the independent adjudicator substitute his or her own views or findings of fact for those of the CAB". The determination of what is or is not key information is for a CAB to determine as a question of fact based upon judgement. An IA is prohibited from trespassing on such conclusions.
 17. Fourthly, FCR 4.4 requires the CAB to make unpublished key information available before the publication of the Public Comment Draft Report. The IA's jurisdiction, as per PD 2.1.1 is in respect of the final report only. If there is a dispute about making unpublished key information available, it should take place at a stage when the IA has no role or involvement.
This adds to the case for the IA having no power to make a disclosure order.
 18. Fifthly, I am not persuaded by the Objector's submission that PD 2.6.5.2 implies an IA can seek disclosure of information in this category against a CAB. PD 2.6.5.2 simply limits the nature of information a party can rely upon before the IA.
 19. Sixthly, if a CAB failed to ensure it met the requirements of 4.4.1.1, this does not necessarily imply the objector is left without a remedy. A failure on the part of a CAB to adhere to the requirements of the FCR, could form the basis of a procedural objection pursuant to PD 2.7.2.1 which could lead to a remand.
 20. Having determined there is no jurisdiction to make a disclosure order against the CAB, the merits of the Objector's application cannot be considered and the second question posed at paragraph 4 above does not arise.

The Hearing

21. The parties were directed to provide dates of availability during a two week window in January 2018. Both the PNA and the CAB provided dates. The Objector provided dates out with the two week window. The parties are directed to agree dates for a two day hearing in New York, USA during the week of 8 January 2018 and inform Ms Gage forthwith.

22. I appreciate and very much understand the inconvenience, cost and burden of travel. I have chosen the USA, as that allows as many people as possible to take only one flight. Given the location of the PNA, unless we all travel to the Pacific, their journey was always likely to be a more burdensome one. My own travel from the Caribbean is significantly complicated by the on-going effect of Hurricane Irma, which means travel to the UK is limited, lengthy and complex (the number and timing of flights in and out of St Maarten airport is limited). It is reasonable for these additional costs burdens, which fall to the MSC, to be taken into account when the hearing is listed.

John McKendrick QC
Independent Adjudicator 5 December 2017

#6 IA decision 20171207

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

By way of an application, dated 7 December 2017, the Objector, IPNLF, seeks remand of the CAB's final report and determination in these proceedings, pursuant to PD 2.7.2.1. The remand is requested in order to receive information sought pursuant to a previous, unsuccessful disclosure application; and to ensure that information is provided prior to the anticipated hearing in these proceedings.

From a provisional assessment of the application, it is hard to ascertain the legitimate jurisdictional basis to remand a CAB's determination on the basis of a freestanding objection, which is not set out in a Notice of Objection, which has been subject to the terms of PD 2.3 to 2.6.

PD 2.6.6 prevents me considering issues not raised in the Notice of Objection.

On a preliminary view, the Objector's application appears to lack a jurisdictional basis. It could be considered an application for an extension of time pursuant to PD 2.10.1.5 to extend the time period in which an objection can be made, pursuant to PD 2.3.1. However, it is not in the correct form.

1

My directions are as follows:

The Objector shall file and serve an amended application which clarifies the jurisdictional basis for its application filed today, by 5 pm GMT 11 December 2017.

Any party which objects to this application shall file and serve submissions in response by 5 pm GMT, 13 December 2017.

Meanwhile, I note the Objector provided dates during the two week hearing window in compliance with the previous direction. The email sent on 27 November 2017 from Mr Purves did specify dates within the hearing window. This email was overlooked amongst the many emails sent in respect of this Objection. I apologise to IPNLF for the oversight.

The parties must attempt to agree dates within the period 8 to 19 January 2018. If they are unable to agree dates, then each party which wishes to be represented at the hearing shall file and serve a statement setting out their dates of availability, with an explanation of why they are unable to attend on the other dates within the trial period, and why, on those dates when they are unavailable, another representative cannot attend the hearing in their place (given the size and resources available within their respective organisations). Such statements shall be filed and served by 5 pm GMT 12 December 2017.

The Objector is to confirm forthwith that pursuant to PD 2.9.4.1, the costs agreement has been, or will be, filed with the MSC within the prescribed timescales.

John McKendrick QC Independent Adjudicator 7 December 2017

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#7 IA decision 20171220

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD PURSE SEINE FISHERY

DECISION OF THE INDEPENDENT ADJUDICATOR

1. This decision deals with two matters which remain in dispute between the parties to these proceedings. The first is the contested application by the Objector, IPNLF, seeking remand of the CAB's final report and determination in these proceedings, pursuant to PD 2.7.2.1, either on the basis it is covered by the existing objection or by way of an application to extend time to permit an objection to be made out with the specific time periods based on exceptional circumstances. The second issue in dispute is the date and location of the hearing of the Objection.

The Application

By way of an amended application, set out in an email dated 11 December 2017, the Objector submits it should be entitled to seek remand of the CAB report and determination pursuant to PD 2.7.2.1 because of a purported breach of the CAB's on-going obligations set out in FCR 4.4.1.1. The Objector puts its argument two ways: namely the existing Notice of Objection covers this issue and in the alternative, if it does not, then pursuant to PD

2.10.1.5, I am asked to find exceptional circumstances exist and extend time to permit an amended Notice of Objection to be filed and determined at the hearing in January 2018 or earlier.

The application is opposed by the CAB and the PNA, who have both filed and served written submissions.

If the existing Notice of Objection covers the remand for the reasons advanced in the email of 11 December 2017 then there is no need for an application. I decline to rule at this stage on the scope of the Notice of Objection: that is a matter for the final hearing. If the Objector is correct, and the existing Notice has averred a proper case for remand on the basis of procedural irregularities pursuant to FCR 4.4.1.1, then it is within scope and the matter can be argued. If the Objector is correct and it has made out such a case, then the only remedy is remand to the CAB after the hearing. There is no possibility of there being a remand at this stage or of there being some form of order to the CAB to disclose the information prior to the hearing in January 2018.

As for the second limb of the application made by the Objector. I decline to find that any exceptional circumstances arise. Four reasons are advanced which are said to constitute exceptionality at paragraph 33 of the Objector's submissions. First, the CAB's refusal to share the information is not exceptional. They say they have a good reason not to do so. It is not for me to second guess them at this stage, on this issue. Secondly, the decision there is no implied disclosure power does not relate to the exceptional circumstances of this late request, but rather amounts to the interpretation of the FCR. Thirdly, whether or not the CAB is in breach of FCR 4.4.1.1 remains in dispute and cannot amount to an exceptional reason at this stage. Fourthly, even if the late amendment to the Notice of Objection was allowed, this would not result in there being a remand and disclosure of the information prior to the January 2018 hearing.

Furthermore, an amendment to the Notice would arguably create difficulties with responses to the amended Notice between now and the hearing, especially given the holidays. If there were to be an extension of time to serve an amended Notice of Objection, fairness would require there to be written responses from the fishery client and the CAB, that would be a lengthy process. I am not prepared for the hearing to be adjourned to a yet later date. This would be inconsistent with the principles of swift and proportionate adjudication.

The Hearing

Regrettably the parties were unable to agree dates for a hearing within the hearing window of 8 to 21 January 2018.

The Objector seeks 17-19 January 2018 because of Mr Purves' holiday commitments during the week of 8 January 2018 and because the IPNLF has meetings with the MSC on 15 and 16 January 2018 and another meeting with Seafish on 17 January 2018. It is noted the IPNLF has seven staff.

The Fishery Client, the Parties to the Naura Agreement, prefers dates during the week of 8 January 2018 and in particular the 11 and 12 January 2018. I note they have difficulties with travel given the air connections to the south Pacific and because there will need to be preparations for a PNA Presidential Summit in February 2018. The dates of the summit are not given nor the extent of the preparation work required.

The CAB, Acoura, seeks the 11-12 January 2018 but would accept 13-14 January 2018 as a fallback. The later dates sought by the Objector in the week of 15 January 2018 are also said to be “extremely difficult”.

There is no easy solution, but I have determined the fairest dates to all are Sunday 14 and Monday 15 January 2018. This appears the fairest solution because:

it permits Mr Purves to spend as much of the week of 8 January on his vacation as possible;
no reason has been put forward as to why those who are presenting the case at the hearing on behalf of the Objector, are required to be the same people to meet with the MSC on 15 and 16 January;
it permits the PNA staff to fly home back on 16 January to permit them time to prepare for their summit which takes place in February;
Acoura has indicated it can attend on these dates, albeit they are not convenient.

I have also determined the hearing will take place in New York. It is of course possible that weather may impact the hearing, but that is not a sufficiently strong reason for the hearing to take place in LA, where weather issues would not surface. LA makes for a much longer journey for those coming from Europe/South Africa and whilst I regret PNA will have to travel further, their journey is already a very long one, but there are less people flying from that part of the world. Further, New York has much greater availability of flights for all concerned.

The hearing will begin at 09.30 on Sunday 14 January 2018 with a time estimate of two days and the hearing hours will be from 09.30 to 16:30 each day with a break for lunch. The parties are to agree a timetable for their submissions broken down by the issues involved and the same must be filed with the MSC by 5pm GMT 22 December 2017.

The MSC will be in contact to confirm the location of the hearing.

John McKendrick QC
Independent Adjudicator 14 December 2017

#8 IA decision 20180228

MARINE STEWARDSHIP COUNCIL

INDEPENDENT ADJUDICATION

IN THE MATTER OF

**PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN
UNASSOCIATED/NON FAD SET TUNA PURSE SEINE FISHERY**

FINAL DECISION OF THE INDEPENDENT ADJUDICATOR 28 FEBRUARY 2018 --- Hearing
Date: 14, 15 January 2018 Final Written Submissions Received: 31 January 2018

Introduction

1. By Notice of Objection dated 26 September 2017 the International Pole and Line Foundation (hereafter referred to as “the IPNLF” or “the Objector”) submitted an Objection to the report and recommendation of Acoura Marine Ltd, the Conformity Assessment Body (CAB) (hereafter referred to as “the CAB” or “Acoura”) to certify PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine fishery (hereafter shortened to “PNA Tuna” or “the Fishery” for convenience). The IPNLF objects to the proposed certification.

2. The IPNLF describes themselves as follows: “IPNLF promotes the environmental and social benefits of one-by-one tuna fisheries by working on improvements with the fisheries and promoting these benefits to market partners. IPNLF also works closely with other organisations and market partners to promote improved regional management of tuna fisheries at the RFMO level.”

The Fishery Client is the Parties to the Nauru Agreement (hereafter “the PNA” or “the Fishery Client”).

Eight decisions were issued dealing with preliminary matters. Those decisions are available on the MSC website and the contents of those decisions are not repeated.

As directed, a hearing took place in New York, USA on 14 and 15 January 2018. The Objector was represented at the hearing by Mr Martin Davey QC, Mr Daniel Owen, counsel and Mr Tom Maple, solicitor. Mr Martin Purves attended and explained the nature of the IPNLF’s work. The CAB was represented by Ms Sasha Blackmore, counsel, and provided further oral information through Dr Jason Combes, Head of Fisheries, Dr Robert BlythSkyrme, expert for Principle 2 and Mr David Japp, expert for Principle 3. Mr Kevin McLoughlin the Principal 1 assessor, joined part of the hearing by Skype, but took no part in the hearing. The Fishery Client was represented by Dr Transform Aqorau, the Legal and Policy Adviser, and information was provided by Mr Maurice Brownjohn OBE, Commercial Manager and Mr Les Clark, Adviser to the PNA. I am grateful to all representatives for their clear and helpful oral and written submissions.

Ms Hannah Norbury, the Senior Fisheries Certification Manager with the MSC attended the hearing as an observer. Ms Francesca Gage also attended the hearing as the administrator.

All parties agreed there was no need for formal evidence to be provided and no party requested permission to cross-examine those who provided further information. For that reason, this decision will mostly avoid using the terms ‘witness’ and ‘evidence’.

This decision is divided into the following parts:

Procedural Matters
Background
Role of the Adjudicator and Overall Approach
The Unit of Assessment Issue
Scoring Objections
Conclusion and Order.

Procedural Matters

At the close of the hearing a number of issues arose which required to be addressed by way of written submissions. The following directions were given:

The Objector has permission, if so advised, to file and serve written submissions limited to addressing: (i) the late partial disclosure of the MSC interpretative log on 15 January 2018 (ii) the CAB’s written submissions provided at the hearing on 15 January 2018 and (iii) response to the excel spreadsheet data by 12 am on 24 January 2018.

The CAB and the fishery client have permission, if so advised, to file and serve submissions in response to any submissions received from the Objector in respect of (i) the interpretative log (ii) excel spreadsheet by 12 am 31 January 2018.

It is necessary to address the parties' responses to those directions and to deal with two further matters. The first of which is that the CAB, by way of an email dated 19 January 2018, sought to introduce a MSC press release said to be relevant to the Objection in respect of the Unit of Assessment. The IPNLF made submissions in respect of this press release, filed and served on 24 January 2018. The Fishery Client also made further submissions in respect of the MSC Press Release in their written submissions dated 31 January 2018. Secondly, the CAB made reference to a report entitled "WCPFC 2016g". This is a report referenced in the CAB's final report and in respect of which the wrong reference was provided with the consequence that the Objector was unable to consider the contents of the report at the time of the hearing. The CAB seeks to rely on the report, as does the Fishery Client and both have made further written submissions in respect of this report. In an email dated 26 January 2018 Mr Purves has made submissions mostly limited to Appendix 2 of the document but he has not sought to oppose the admission of the document into the proceedings.

In terms of compliance with the directions made, the Objector filed and served written submissions on 24 January 2018, responding to the written submissions filed and served by the CAB at the final day of the hearing. I have read and taken those submissions into account. The IPNLF's submissions made in respect of the extracts from the MSC "Interpretation Log" and the data which underpins Tables 15 and 16 of the CAB's final report, which were only disclosed at the hearing, have also been considered and taken into account.

Both the CAB and the Fishery Client filed and served written submissions on 31 January 2018. The terms of the direction limited the scope of their submissions. Nonetheless, both the Fishery Client and the CAB have made further written submissions in response to the Objector's written submissions filed in response to the CAB's written submissions provided at the hearing on 15 January 2018.

Separately I record that the Objector has accepted it has received disclosure of the data related to Tables 15 and 16 in the CAB report, albeit belatedly and with concerns about the data.

It is necessary, therefore, to determine the following outstanding issues:

whether the MSC Press Release should be admitted;
whether the document entitled WCPFC 2016g and the submissions related to that should be admitted;
whether submissions made beyond the scope of my directions by the CAB and Fishery Client should be accepted and considered.

On the first issues, I decline to admit the MSC Press Release. The role of the Adjudicator is to interpret the Fisheries Certification Requirements; that document should be capable of clear interpretation from the text of the document itself. Secondly, I have received no information from the MSC itself about the status or purpose or audience for its press release. In those circumstances, it is a document that should be approached with some caution and it would not be appropriate to make assumptions, as I appear to be invited to do, about the circumstance behind the issue of the press release. Lastly, a proportionate approach is called for. This adjudication has been characterised by detailed and comprehensive submissions made by all parties on a considerable number of documents. The adjudication process is required to be proportionate and swift and there is a real danger that admitting further documentation, especially after the hearing, is simply disproportionate and unhelpful to the task of adjudication.

On the second issue, I will consider the terms of document WCPFC 2016g and the submissions made in respect of this document. It is not apparent that any party objects to its inclusion and it is a document that is referenced in the CAB report, the very subject of these proceedings. It is regrettable the parties were unable to arrange access for all parties to receive this document in the months before the hearing took place after the Notice of Objection was filed.

I decline to consider the further written submissions made by the CAB and the Fishery Client responding to the written submissions made by the CAB on the last day of the hearing. The reasons put forward by both parties are not persuasive and the inclusion of yet further submissions on submissions is not proportionate and does not serve to assist the adjudication process. The CAB agreed directions and chose to respond to the Objector's 55 page submissions in the manner they did prior to the commencement of the hearing. If they chose to file further lengthy written submissions in an unheralded manner on the last day, they should not be surprised that fairness dictates the Objector can respond. A further response is not called for from the CAB for any of the reasons set out in their letter dated 30 January 2018. For similar reasons I decline to consider the Fishery Client's further submissions on these issues.

Background

The CAB's report which underlies the proposed re-certification is entitled: "PNA Western and Central Pacific skipjack and yellowfin, un-associated / non FAD Set, tuna purse seine fishery". A considerable amount of information is contained within this title and it is helpful to break it down, explaining as it does the nature of the fishery in respect of which certification by the MSC is sought.

PNA of course refers to the Parties to the Nauru Agreement. This is well described in the CAB report at section 4.4.2 as:

The Nauru Agreement (PNA 1982) is a regional agreement to facilitate cooperation in the management of fisheries resources of common interest. The Nauru Agreement is a binding Treaty-level instrument considered to be a sub-regional or regional fisheries management arrangement for the purpose of the United Nations Fish Stocks Agreement (UNFSA) – the agreement requiring management of straddling/highly migratory fish stocks on a sub-region by sub-region basis through Regional Fisheries Management Organisations (RFMOs), and the WCPFC Convention (the regional fisheries agreement covering the WCPFC convention area – the WCPFC-CA). The Solomon Islands, Tuvalu, Kiribati, Marshall Islands, Papua New Guinea, Nauru, Federated States of Micronesia and Palau, commonly referred to as the Parties to the Nauru Agreement (PNA), have worked collaboratively since 1982 to manage the tuna stocks within their national waters, and are full members of the WCPFC.

Tokelau is also associated with the PNA, albeit not a formal member.

"Western and Central Pacific" refers to the geographical area where the vessels associated with the PNA fish. It is a very large area, mostly to the north and north east of Australia and Indonesia, extending as far north as the Exclusive Economic Zone (EEZ) of the Marshall Islands, as far west as the EEZ of Palau, as far south as the EEZ of the Solomon Islands and as far east as the EEZ of Kiribati.

Certification is sought from the MSC in respect of both "skipjack" (*Katsuwonus pelamis*) and "yellowfin" tuna (*Thunnus albacares*). Skipjack tuna is the main target species. Yellowfin is not separately targeted.

"Purse Seine" is a distinctive style of fishing and is explained in the CAB report at 4.4.1:

Purse seine fishing for tuna involves circling a tuna school with a deep curtain of netting. A float line mounted on the top of the net keeps it at the surface while the bottom of the net is weighted. The bottom of the net is pursed (closed) underneath the fish school by hauling a wire running from the vessel through rings along the bottom of the net and then back to the vessel, preventing the fish from swimming down to escape the net or 'sounding'.

Fishing for tuna with the purse seine method can take place opportunistically when a school is discovered (vessels use various and sophisticated methods to detect schools); swimming freely (defined as free school); around a natural object (defined as log set); or the fishing can take place by placing the net around a "fish aggregation device" (hereafter a FAD). The CAB report states FADs "are specifically designed to attract and hold fish around them and are either anchored to the seabed or left to drift in the prevailing currents. FADs may be constructed from an array of materials, including ropes, palm tree fronds and old netting."

There is also a Western and Central Pacific Fish Commission (hereafter “WCPFC”) definition of FAD at page 20 of the CAB report.

The Fishery is one the world’s largest and is of very significant importance to the economies of the PNA. Certification of a fishery by the MSC is not dependent upon the size of the fishery, but the size of the Fishery and its impact on the related small island nations is noted.

The Fishery (without yellowfin tuna) has been the subject of certification since December 2011. An objection was lodged to the then CAB’s report and proposed certification. Annual surveillance audits have taken place and reports from these audits have been produced in 2012, 2013, 2014 and 2016. These reports are included in the adjudication bundle and I have read them. On 4 February 2016 yellowfin tuna was certified alongside skipjack tuna. On 5 August 2016, Acoura were appointed to act as the CAB for the Fishery, as both skipjack and yellowfin entered the re-certification process. The Public Comment Draft Report (PCDR) was published on 15 June 2017. The final CAB report was published on 5 September 2017 and the IPNLF objected on 26 September 2017. Thereafter, the chronology of these proceedings is documented in the numerous pre-hearing adjudication decisions.

Pursuant to the MSC Fisheries Certification Requirements (7.24.4.1) the CAB extended the expiry date of the existing Fishery certification on 10 October 2017 by six months to 15 April 2018.

Role of the Adjudicator and Overall Approach

Annex PD of the Fishery Certification Requirements (hereafter “FCR”) sets out in full the Objections Procedure. IPNLF have objected under two grounds of challenge which may lead to a remand of the determination to the CAB, these are:

There was a serious procedural or other irregularity in the fishery assessment process that was material to the fairness of the assessment; and

The score given by the CAB in relation to one or more performance indicators cannot be justified, and the effect of the score in relation to one or more of the particular performance indicators in question was material to the determination because [...]

d. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

In the Notice of Objection, the IPNLF has advanced one objection on the basis there is a serious non-procedural irregularity in the assessment process, namely the CAB’s decision to select the unit of assessment of the basis of difference in practice alone. More particularly, fishing on un-associated schools as one practice and seeking certification for this fishing, whilst fishing on FAD schools (another practice) takes place but in respect of which certification is not sought. The Notice of Objection also contains twenty four objections to scoring assessments the CAB has taken, as against the performance indicators (PIs). In relation to scoring challenges the Notice of Objection does not set out which of the four sub-clauses of PD 2.7.2.3 applies to explain why the score given by the CAB cannot be justified, however, this is clarified at paragraph 59 of the Objector’s submissions for the hearing and each of the 24 scoring objections is put on the basis of the scoring assessments being “arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it”.

In determining each of the twenty five Objections, I must have regard to the following common factors:

Section 1 of the Fisheries Certification Requirements makes clear the Requirements “are for the CAB’s use when assessing fisheries against the MSC’s Fisheries Standard”. The Requirements are publicly available, but they in reality a private document which directs how an expert body (the CAB) should carry out the assessment process and against what standards.

There has been no challenge by the Objector to the expertise of the team assembled by the CAB to carry out the re-certification of the relevant fishery.

The Objector has not relied on any expert evidence or assessment by its team.

The adjudication does not involve choosing between two competing bodies of expert evidence.

e. FCR PD 2.6.6.2 states: “In no case shall the independent adjudicator substitute his or her own views or findings of fact for those of the CAB.”

31. The process of adjudication is very much one of review, as seen against principles of English or US administrative law. At no stage of the adjudication is it appropriate for the adjudicator to set about a ‘first instance’ determination of whether or not the Fishery meets the FCR requirements: that is the role of the CAB, deploying its expertise. The role of the adjudicator is to review the CAB’s process of decision making without substituting factual decisions or expert judgements. This is reinforced by FCR PD 2.1:

The purpose of the Objections Procedure is to provide an orderly, structured, transparent and independent process by which objections to the Final Report and Determination of a Conformity Assessment Body (CAB) can be resolved.

PD2.1.1.1

It is not the purpose of the Objections Procedure to review the subject fishery against the MSC Fisheries Standard, but to determine whether the CAB made an error of procedure, scoring or condition setting that is material to the determination or the fairness of the assessment.

PD2.1.2

Subject to PD2.3.1.3 the procedure is open only to parties involved in or consulted during the assessment process.

PD2.1.3

An independent adjudicator will examine the claims made by an objector in a notice of objection and will make a written finding as to whether the CAB made an error that is material to the determination or the fairness of the assessment. If any error is identified, and if there is adjudged to be a real possibility that the CAB may have come to a different conclusion, the independent adjudicator will remand the determination back to the CAB for reconsideration.

The Unit of Assessment Objection

The Objector’s submissions under this head are clearly put in their written submissions, dated 8 January 2018, filed for the hearing at paragraphs 8 to 45. Importantly, the Objector notes that a PNA Purse Seiner on the same voyage may catch unassociated or free school tuna and also catch tuna from a FAD. The same vessel can do this on the same day or on different days of the same vessel voyage. Only the tuna caught with the non FAD or free school purse seine method is certified by the MSC. There exists therefore a difference in practice as to what can be certified and what cannot. By compartmentalising the tuna into a FAD free element and a FAD element for the purposes of the unit of assessment by the CAB, the Objector states there has been a non-procedural irregularity.

More generally, the IPNLF object to the same vessel carrying out a certified (and therefore sustainable) fishery alongside a non-certified fishery, although their submissions accept this is not the proper basis for an objection under the FCR.

Mr Davey QC’s oral and written submissions under this part of the objection make four key points:

By way of reference to the FCR “General Introduction” the overarching purpose of the MSC scheme for certification is to consider the “fishery” being certified and there is no indication this fishery could be carved up and permit fishing which was not sustainable. He linked this issue to the references at page 10 and 11 of the FCR to the need for transparency and more broadly public confidence.

Secondly, it was argued through written and oral submissions that the MSC Vocabulary document defined Unit of Assessment and Unit of Certification in such a way so as to exclude practice alone being used to determine the unit of assessment. So by using the unassociated non FAD practice alone the CAB erred, it being further submitted that the definition required the CAB to look at all the practices pursuing the stock. It was submitted the Vocabulary document was definitive and should take precedence in the event of a conflict with the FCR.

Further it was argued that selecting a Unit of Assessment on the basis of practice was contrary to the Food and Agriculture Organisation of the United Nations (FAO) Guidelines for the Ecolabelling of Fish and

Fishery Products from Marine Capture Fisheries, at paragraph 25. It was said the MSC, through its website, held out that it complied with FAO standards.

Fourthly, it was argued the approach taken by the CAB in its selection of the Unit of Assessment was contrary to the “precautionary approach” and in particular the Objector argued the CAB was wrong to be reliant upon observers to assist with implementing the Unit of Assessment.

The MSC relies upon a document entitled “MSC-MSCI Vocabulary”. It is dated 20 February 2015. The introduction to the document simply states the vocabulary defines concepts and terms etc. It further states definitions, where possible, are taken from authoritative sources and lists one as the FAO. It contains no further guidance as to how the vocabulary should be used or what should happen in the context of a conflict with the FCR. Section 3 of the FCR makes reference to the MSC-MSCI Vocabulary.

The definitions of Unit of Assessment and Unit of Certification are provided in the Vocabulary document:

Unit of Assessment (UoA)

The target stock(s) combined with the fishing method/gear and practice (including vessel type/s) pursuing that stock, and any fleets, or groups of vessels, or individual fishing operators or other eligible fishers that are included in an MSC fishery assessment. In some fisheries, the UoA and UoC may be further defined based on the specific fishing seasons and/or areas that are included.

Unit of Certification (UoC)

Target stock(s) combined with the fishing method/gear and practice (including vessel type/s) pursuing that stock, and any fleets, or groups of vessels, or individual fishing operators that are covered by an MSC fishery certificate. Note that other eligible fishers may also be included in some Units of Assessment but not initially certified (until covered by a certificate sharing arrangement).

37. The FCR is a document for the CAB’s use. It directs the CAB in respect of how it must define the Unit of Assessment as follows:

Defining the unit of assessment and unit of certification

7.4.6 After receiving an application for certification, the CAB shall review all pre- assessment reports about the fishery and other information that is available to it, and shall determine the unit of assessment required.

7.4.7 The CAB shall confirm the proposed unit of assessment (UoA) (i.e., what is to be assessed) to include:

7.4.7.1 The target stock(s),

7.4.7.2 The fishing method or gear type/s, vessel type/s and/or practices, and

7.4.7.3 The fishing fleets or groups of vessels, or individual fishing operators pursuing that stock, including any other eligible fishers that are outside the unit of certification.

It can be seen from FCR 7.4.7 the process of determining the Unit of Assessment is mandatory (“shall”) and involves determining the target stock first (the skipjack and yellowfin tuna); the fishing method/gear (purse seine) and the practice (unassociated nonFAD) and thereafter consideration can be given to the detail of the fleet. There is no dispute between the CAB and the Objector that the CAB adopted this approach when carrying out the certification process.

The CAB in their submissions make two background points: one is that the Fishery has been certified on the basis of the same Unit of Assessment adopted since 2011; and secondly that as of 1 January 2018 there are three MSC certified tuna fisheries based upon a Unit of Assessment determined by the unassociated non-FAD practice of purse seine fishing. These are plainly relevant background factors, but the answer to this issue must be based upon the proper construction of the FCR.

My reasons for dismissing this ground of objection are as follows:

The definition of Unit of Assessment and understanding of the FCR is an aspect of the expert judgment of the CAB. Acoura is an expert body with much experience of understanding and applying the FCR. Their

approach is consistent with the history of the PNA tuna fishery but also other CAB's approaches to other purse seine fishing practices, as the CAB submitted. It is reasonable to provide the CAB with a degree of deference on this issue.

I reject the Objector's interpretation of the MSC Vocabulary as requiring all the practice(s) deployed to pursue the target stock. The Vocabulary does not state this. It is silent as to whether it is permissible to use one practice, several practices or all practices.

The Vocabulary must be read in the context of the FCR, and in particular the mandatory language of FCR 7.4.7 which makes clear the CAB must confirm the Unit of Assessment and must do so on the basis of practice as set out in 7.4.7.2.

Even if I am wrong and there is a contradiction between the Vocabulary definition and FCR 7.4.7, this latter document is the determinative one and I reject the Objector's submission that the Vocabulary is determinative. The MSC documents are not to be read like parliamentary legislation, where definitions are accepted to have greater interpretative value. The MSC documents have not been drafted in this way. Whilst they are a publicly available document to provide confidence to the seafood buying public (and others) the FCR is, above all, a practical and normative tool directed to the CAB to permit it to carry out its certification process.

I reject the submission in respect of the FAO standards for two reasons. First, I have not properly been provided with the information in respect of the MSC's website which demonstrates the Unit of Assessment is entirely aligned to the FAO standard, nor have I received the MSC's views on this point. Secondly, my role is to consider the CAB's certification as against the FCR, this I have done. If the FCR is inconsistent with a FAO definition (and I express no view on this issue) then that is a matter for the MSC to consider not an Adjudicator.

I also reject the Objector's submission in respect of the precautionary approach. In considering the CAB's interpretation and application of the FCR, I am not concerned with interpreting "information". I understand this to be a reference to data or scientific information, not a normative standard. Even, if I am wrong on that, there is nothing in the CAB's application of the FCR in respect of the Unit of Assessment to suggest it acted with a lack of caution.

I accept the CAB's application of the FCR as being consistent with my interpretation of the FCR and the Vocabulary read together in a way which is relevant to the context of these documents. I understand the Objector's complaint that consumers of a targeted stock which receives MSC certification may not realise that the same vessel has been engaged in fishing which would not meet the MSC standards. However surprising that may be to a consumer, and again it is an issue upon which I do not express a view, it cannot affect my decision that there has been no non-procedural error on the part of the CAB.

Having determined there was no serious non-procedural irregularity in the CAB's fishery assessment, I need not determine the second limb in respect of whether any such error was material to the fairness of the assessment. I dismiss this ground of objection.

The 24 Scoring Objections

There are twenty four scoring objections. Each is confined to an arbitrary and/or unreasonable challenge by the Objector. All administrative lawyers appreciate the relatively high standard required by such a test. Not all the scoring grounds of objection were covered by the parties' advocates at the oral hearing, but Mr Davey QC made clear his client continued to rely on all written grounds in respect of the scoring objections. I take each in turn.

It is important to note the reasons produced under each of the 24 grounds are directed at the parties to the Objection, who are familiar with the FCR and the evidence and materials presented. Reasons are provided to a standard to permit the parties to know, in outline, why they have won or lost on each issue.

Performance Indicator 2.2.1-2.2.3 – Main Secondary species

Performance Indicator 2.2.1 (Outcome) states: "The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit." The CAB scored 100. The Objector submits the CAB improperly failed to conclude black

marlin and striped marlin should have been registered as “main secondary species” (which requires references to PI 2.1.1 and SA 3.4 which determines which species are main). The submissions in respect of blue marlin were withdrawn (see paragraph 77 (1) of the Objector’s written submissions for the hearing).

The CAB submits it was correct to determine black and striped merlin were minor and not major species. The question which falls to be determined is whether this conclusion is arbitrary or unreasonable.

The submissions focus on whether the marlin catches within the Unit of Assessment are “exceptionally large” at SA 3.4.4. This is because neither the 5% nor 2 % thresholds for the other parts of SA 3.4 are met. In order to be classified as “exceptionally large” pursuant to SA 3.4.4, the small catch proportion of secondary species must “significantly impact the affected stocks/population”.

The MSC has produced FCR Guidance and paragraph GSA 3.4.4 states (emphasis added):

Exceptionally large catches and main species

In considering whether a species should be treated as 'main', CABs should take account of the relative catches of both target and the P2 species and determine whether the risk to the population of the impacted P2 species is significant enough to warrant a designation as 'main'. In the absence of full information, CABs should regard a catch by the UoA of 400,000mt of the target species as being 'exceptionally large'.

The CAB did not address all these issues in its report (see page 161). However, the issue before me is whether or not its scoring conclusion is arbitrary and unreasonable. The CAB has produced significant further information regarding the two species of marlin, both in its formal response to the Notice of Objection, and the written submissions produced at the hearing. In respect of black marlin, considerable data was provided at page 35 of the response to the Notice of Objection, which concludes: “This [the data] supports the assertion that black marlin is not at risk from the PNA Tuna fishery”. Similar data was produced in respect of striped marlin on pages 35 and 36 of the CAB’s response to the Notice of Objection. This concludes: “...the PNA Tuna fishery is not hindering recovery, and by association is not putting the stock at risk”.

The Objector complains no stock assessment was carried out for black marlin and otherwise the CAB have ignored the precautionary approach. I accept the CAB’s evidence that they can make the assessment without a stock assessment and I accept their position that the PNA catch is a small percentage of the total black marlin catch. As stated in the introduction, the CAB are experts and have presented their detailed findings. Their expertise has not been challenged and no expert evidence filed in response.

In respect of striped marlin, the Objector notes in the Western and Central Pacific Ocean (WCPO) report that striped marlin is overfished. The CAB accepts this, but they state: “reported catch compromises around 1 % of the total catch stock. As per MSC guidance (GSA 3.4.6) this indicates the PNA Tuna Fishery is not hindering recovery, and by association is not putting the stock at risk.” The Objector disputes the relevance of GSA 3.4.6 because of the use of the word “collectively” in the title to that section of the Guidance. Having read the guidance carefully, and the parties submissions, I conclude the CAB is correct to rely on it for the reasons they give in the table at page 4 of their submissions filed on the last day of the hearing.

The CAB’s expert assessment is clear: that despite the fact both species were fished at the “exceptionally large” level, they were not main species in their professional judgement. Information was provided in respect of other exceptionally large catches which other CABs had accepted were not main species.

Despite the forensic details with which the arguments for the Objector were put, I cannot conclude the CAB’s scoring, in the light of the recent information provided since the CAB’s final report, in response to the Objection, is arbitrary or unreasonable. I reject this ground.

PI 2.2.1 (A) Outcome – Stock status

The Objector argues a CAB cannot score by default at the SG 100 level. The CAB scored in this manner because it determined there were no main secondary species. PI 2.2.1 (a) requires an assessment as to whether or not the main secondary species are likely/highly likely/there is a high degree of certainty to be above biologically based limits. It is an outcome assessment.

I agree with the CAB that whilst its use of the term “default” is incorrect, it is entitled to rely on SA 3.2.1, which states: “If a team determines that a UoA has no impact on a particular component, it shall receive a score of 100 under the outcome PIA”. The CAB has not acted arbitrarily or unreasonably by concluding that because there is no main secondary species there is no impact on PI 2.2.1 a. The Objector complains there is no determination on impact, but the CAB having concluded there was no main secondary species and having made this determination in its report by implication have made an assessment on impact. Further, I disagree with the Objector’s submission that no score should be recorded. The purpose of the assessment is to consider the impact on secondary species of the fishery, if the fishery has no impact on secondary species, then it is entitled to be scored positively, rather than not at all, because that is part and parcel of the scoring system, seen in the context of the three MSC principles.

The fact the remaining complaints set out at paragraph 86 of the Objector’s written submissions were not dealt with by the CAB does not mean its scoring was arbitrary or unreasonable. The Objector is descending into a level of detail that is not necessary to address. This ground of objection is dismissed.

PI 2.2.1 (b) Secondary Species Outcome - Minor Species

The Objector withdrew several aspects of the Notice of Objection as recorded at paragraphs 88, 89 and 98 of its written submissions for the hearing. The objection in respect of black marlin was pursued. It was submitted the CAB’s scoring of the Fishery hindered the recovery and rebuilding of the black marlin. There is nothing arbitrary or unreasonable about the CAB’s conclusion that the catch of black marlin is well below the 30 % threshold, which may indicate recovery is being hindered; nor that catches of black marlin in the PNA fishery are less than 5 % of the total catch of the species. The CAB has reasoned these responses and I accept their position.

The CAB did not act in an arbitrary or unreasonable fashion when awarding a scoring of 100 for this performance indicator, when the totality of their report and the information provided during the objection period is considered.

PI 2.2.2 Secondary Species Management Strategy - General

59. I consider it difficult to understand the Objector’s individual complaint in respect of PI 2.2.2 apart from its specific complaints set out in its objections to PI 2.2.2 (a) to (e). The concerns raised by the Objector are dismissed for the reasons provided below in respect of the individual PI at 2.2.2 (a) to (e) and for the reasons given by the CAB at page 8 of their written submissions filed on the final day of the hearing. There is nothing irrational or unreasonable about the CAB’s overall approach to scoring PI 2.2.2 and its approach to the term “if necessary” where it does not appear.

PI 2.2.2 (a) Secondary Species Management Strategy – Strategy In Place

The objection on this point as refined in the written submissions is confusing. As I understand paragraphs 112-114 of the Objector’s written submissions for the hearing, no challenge is being made to the score at PI 2.2.2 (a) because the CAB’s explanation and reliance on the Table at GSA 3 is accepted. The Objector states in terms at paragraph 114 it accepts the CAB’s score of 80 for SI 2.2.2 (a). The Objector accepts a partial secondary species plan is acceptable, because it is not necessary to have a ‘complete’ strategy given the absence of main secondary species.

There no longer appears to be a challenge to the CAB’s scoring at 2.2.2 (a) and so this ground of objection is dismissed. If I have misunderstood the Objector’s position, in any event, for the broader reasons given in respect of PI 2.2.2 (a) to (e), I do not consider the CAB’s approach is irrational or unreasonable.

PI 2.2.2 (b) Management Strategy Evaluation

The Objector's challenge to this Performance Indicator score is based upon the previous submissions above and the word "if necessary" which are missing from the Guideposts. The Objector argues the score of 100 cannot be given because the approach taken at PI 2.2.2. (a) cannot be repeated here at (b). In other words, the Objector accepts at 2.2.2 (a) it was appropriate to score the PNA fishery on a partial strategy because a full one was not necessary because there are no main secondary species. The Objector submits this approach cannot follow through the remaining sub-sections of the PI 2.2.2 scoring.

Each Performance Indicator must be read in a holistic manner and in a common sense way. PI 2.2.2 is entitled "Secondary Species Management Strategy". All five of the scoring issues from (a) to (e) are related to the management strategy or partial management strategy. PI 2.2.2 (a) scores the suitability of the strategy in place; 2.2.2 (b) scores the effectiveness of the strategy related to the species involved; 2.2.2 (c) scores the extent to which the strategy has been implemented; 2.2.2 (d) scores the management strategy in the specific context of managing shark finning; and 2.2.2 (e) scores the strategy in the specific context of the mortality of unwanted secondary species. Each of the five scoring issues is directly related to the management strategy in respect of secondary species. This relates directly back to principle 2: the environmental impact of the fishing.

I note for completeness SG 60 was, contrary to the Objector's submissions, considered because the Box entitled "Met?" was ticked, although no justification was provided. This is a common complaint made by the Objector. However if the relevant box was ticked, indicating the score was met, then the CAB has considered the score guidepost, even if it has not been reasoned. If the reasoning is provided for a score of 100, it may not be necessary for the lower scores to be explicitly addressed.

The second point raised in the Objector's written submissions under this head is that the "justification" box fails to set out "plausible arguments based on expert knowledge". The Objector does not attempt to explain why the CAB's response in the report, and information submitted since then, is arbitrary and/or unreasonable and I decline to find that it is. Point 2 of this ground of the objection is merely the Objector's disagreement with the scoring on the part of the CAB. 'Plausible argument' is defined as including "general experience". The CAB is an expert body and their assessment and the testing data (both referred to the justification section of the CAB report) supports the conclusion that the PNA's partial strategy is working with a level of high confidence. I accept that conclusion.

Thirdly, the Objector objects to the CAB relying on the data in Table 15 at page 55 of the CAB final report to support its position that this amounts to "relatively complete" data. The reference to "relatively complete" relates to the test to be met for the objective test of confidence at Table SA8 in the FCR. Pages of submissions are made in the Notice of Objection which are expanded and repeated in the Objector's written submissions for the hearing for the purposes of scientifically undermining the data as set out in Table 15. Table 15 is a complex Table with 7 columns and 84 rows. However, I am concerned with whether or not the score of 100 for PI 2.2.2 (b) is unreasonably or irrational. Instead, I am being asked to carry out a technical and scientific review of the underlying data put together by the CAB. This approach by the Objector is to misunderstand the role of the independent adjudicator. I am being invited to enter the scientific ring and make conclusions about the validity of underlying data. This submission is contradicted by FCR PD 2.6.6.2, which states: "In no case shall the independent adjudicator substitute his or her own views or findings of fact for those of the CAB." This ground is dismissed.

There is nothing irrational or arbitrary about the CAB's decision to score the PNA Fishery 100 under this PI.

PI 2.2.2 (c) – Secondary Species Management – strategy implementation

I dismiss the Objector's related challenge for the same reasons set out above under PI 2.2.2 (b).

The second point raised is that to obtain a score of 100 under this PI, “clear evidence” is required of the partial strategy being implemented successfully and achieving its objective. The CAB’s report at page 164 sets out three paragraphs to explain why the CAB considered the score of 100 was justified for the PNA fishery. The Objector, at paragraph 136 of its written submissions for the hearing, sets out four critiques of the justification by the CAB for finding “clear evidence” exists.

The submissions do not grapple with why it is said the CAB’s conclusions in respect of “clear evidence” is arbitrary and/or unreasonable. The CAB is an expert body which has presented a detailed report based on evidence. I accept the CAB’s reasons at pages 15 and 16 of their written submissions filed on the last day of the hearing. The Objector is not an expert and has not filed any expert evidence. The Objector is incorrectly asking the adjudicator to come to a judgement on the evidence, when that is not the role of the adjudicator.

The challenge to the 100 score for this PI is dismissed.

PI 2.2.2 (d) – Shark Finning

72. The relevant Performance Indicator in respect of shark finning states for a score of 60: “It is likely that shark finning is not taking place.” For a score of 80: “It is highly likely that shark finning is not taking place.” And for a score of 100: “There is a high degree of certainty that shark finning is not taking place.” The CAB scored the PNA fishery 80 and justified this score as follows:

SPC provided observer data showing that shark finning does occur at a low level in the PNAFTF. However, the number of finning instances has dropped considerably recently, and the overall number of animals concerned has also dropped dramatically (Table 16).

In part, this is in response to the adoption of CMM2010-07, which requires that “CCMs shall take measures necessary to require that their fishers fully utilize any retained catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, guts, and skins, to the point of first landing or transshipment.” In addition, the vast majority of the instances of finning appear to have involved silky shark, a species that has recently been subject to enhanced management in WCPFC waters through the adoption of CMM2013-08. This requires that CCMs should consider measures directed at by-catch mitigation as well as measures directed at targeted catch to improve the status of the silky shark population, and requires that silky sharks are not retained in whole or in part in the WCPFC-CA.

Importantly, through the MSC interpretations log, the MSC has clarified the following: “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.” Also, “Fisheries should not be perversely penalised, for example, for putting in place very good surveillance and enforcement systems that are proving effective and still detecting and quickly resolving the odd rare case” (<http://msc-info.accreditation-services.com/questions/shark-finning/>)

The finning identified in the PNAFTF is not systematic, and the Assessment Team was shown evidence that PNA member countries are prosecuting vessel masters for shark-finning violations. As such, the fishery is scored 80 for this SI. It cannot score 100 as a small amount of finning does occur.

A Recommendation (#1) is made that, for each MSC audit, the PNA provide a PNAFTF-specific enforcement and compliance summary report of CMM 2010-07 (for sharks), CMM 2011-03 (for oceanic whitetip sharks) and CMM 2013-08 (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.

The Table 16 figures are as follows:

Year	Instance of Finning	Animals retained	% Silky shark
2012	179	928	84.8
2013	191	970	94.4
2014	45	222	94.1
2015	14	32	96.9

The Objecter, through Mr Davey QC, made a number of powerful points:

plainly, shark finning is taking place in the PNA fishery, as set out in the CAB’s own report;
 given shark finning is taking place in the PNA fishery, the plain wording of the scoring indicator requires the CAB to fail the PNA fishery;
 the CAB improperly relied upon the MSC “Interpretation Log” - a log which is not publicly available and which the CAB selectively quoted from to justify the score of 80, (see the excerpted justification section of the CAB report above);
 it was improper for the CAB to rely upon the interpretations log, which is not publicly available, to interpret a publicly available standard;
 the Objecter had not had access to the Interpretation Log, despite asking for access to it from the MSC, which was declined;
 the WCPFC-TCC reports did not demonstrate the drop in recorded finning was the result of effective investigation, enforcement and prosecution, and it was said there were reports of intimidation and bribery of the observers on board vessels;
 overall, the CAB failed to provide proper evidence of the law enforcement activities around shark finning and were wrong to rely on media reports and anecdotal evidence.

At the hearing, concerned by the CAB’s reliance on the Interpretation Log and the fact the Objecter had reported it had been declined access to this document, I asked the CAB to query with the MSC whether the entire Interpretation Log could be made available to all the parties to these proceedings and if that was not possible whether all excerpts which related to shark finning could be disclosed to the parties.

The following day the MSC provided the parties with only those parts of the Interpretation Log which related to shark finning but declined to provide the parties with the full log. As can be seen above, permission was granted to the Objecter to make further written submissions on the issue of the CAB’s reliance on the Interpretation log. The Objecter’s post hearing written submissions covered this issue at paragraphs 42 to 51. The Objecter maintained its submission that the CAB’s reliance on the log was “not legitimate” but without prejudice made a number of other points. As will be seen below, I direct the Objecter’s submissions will form part of the Annex to this decision and so do not set out the remaining written submissions made.

The CAB submitted that reliance on the Interpretation Log was legitimate for the following summarised reasons: it forms part of the record pursuant to PD 2.6.5.4; it is published by the MSC who alone control its contents and has been in existence since 2014 and is highly relevant to the MSC’s standards; the peer assessors raised no issue with the log; the CAB would have applied for a variation if the CAB was unable to rely on the Interpretation Log; the clarification of the PI by the Interpretation Log is within the intention of the scoring indicator and the approach advanced by the Objecter lacks common sense as one individual transgression would lead to a fail; the use of the Interpretation Log was not arbitrary or unreasonable; the use of the Interpretation Log did not result in any unfairness to the Objecter; the non-publication of the Log is a governance issue for the MSC, not an issue for the Adjudication.

Having considered the rival submissions carefully, I have come to the clear conclusion it is not legitimate for the CAB to rely on the Interpretation Log when assessing the PNA Fishery's compliance with the FCR. Regrettably, given the structure of the adjudication process, I have not received the MSC's submissions on this issue, but the points for and against have been well made by the CAB and the Objector. My reasons are as follows:

The FCR is publicly available and is made public to permit consumers, environmentalists, Governments and others to have confidence in the MSC certification process. Therefore to rely on a private document which is not published, which was not available in full form to the parties to an Objection, is lacking in proper transparency. It is wrong for a publicly available standard to be interpreted based upon a privately available policy. Further it is unfair to a party to an Objection not to be provided with a full copy of the document, when it forms a part of the CAB's rationale to certify a fishery when an objection is made.

The FCR makes no reference to the Interpretation Log in its list of normative documents, yet CABs may rely on it when interpreting these normative standards.

The MSC through its FCR holds out the standards to: "provide the transparency that is required of an international certification scheme for it to have credibility with potential stakeholders...". It is inconsistent with this important principle of transparency for CABs to rely on a private Interpretation Log.

I reject the CAB's submission that it is appropriate for me to have regard to the Interpretation Log because it is said it forms part of the record pursuant to PD 2.6.5.4. Notwithstanding the fact I am unclear what is meant by "related interpretations", it is a surprising submission for the CAB to make, given they had responsibility for putting the bundle together and omitted the Interpretation Log. It is further surprising, given that when asked the MSC did not disclose the full Log to the parties.

The CAB makes the powerful point that they would have sought a variation for the Fishery on this issue. That, however, is irrelevant to the issue of whether it is legitimate or fair for an adjudicator to place reliance on the Interpretation Log when considering the issue of shark finning and the CAB score of 80.

Whether or not there is any direct unfairness to the Objector does not address the issue of the need for transparency in the application of the MSC standards by CABs to fisheries.

I agree, whether or not the MSC continue to wish to rely on the Interpretation Log remains a governance issue for them. However, as an independent adjudicator, it is my task to ensure a fair adjudication, and for the reasons I have set out it is lacking in full transparency and therefore not fair for the CAB to rely upon a private Interpretation Log when interpreting and applying the publicly available FCR to the PNA fishery.

Therefore, I agree with the Objector that the scoring of the shark finning scoring indicator was arbitrary because it relied upon a document which was illegitimate and unfair for the reasons set out above. That being said, I am not persuaded that this error by the CAB "was material to the determination" for the reasons developed below.

Before turning to the substance of the shark finning issue, I must also address the dispute between the parties in respect of Table 16. As can be seen from the pre-hearing adjudication decisions, the Objector's application for disclosure of documents and information related to Table 16 was refused. At the hearing, however, the CAB relented and the underlying shark finning data was provided. In their respective post hearing written submissions the parties addressed the data which underpins Table 16.

The Objector complains that the data in Table 16 should include information related to the FAD fishing which takes place in respect of the PNA fishery fleet. They make several further complaints related to the WCPFC Conservation and Maintenance Measures which are detailed at paragraphs 56 to 69 of their post hearing submissions. Once again, I find the Objector is asking me to descend into the scientific arena and substitute my scientific judgement for that of the CAB. There is a disagreement of scientific approaches between the CAB and the Objector, but importantly there is nothing arbitrary or unreasonable about the CAB's reliance on Table 16 and for me to otherwise find would require me as an adjudicator to improperly second guess the CAB on a question of scientific judgement. Furthermore, I agree with the CAB's background and reasoning related to table 16, which is explained as follows, taken from their report at page 58:

In 2010, the WCPFC introduced CMM 2010-07, which specifies that Commission Members (CCMs) take measures necessary to require their fishers to fully utilize any retained catches of sharks, with all parts of the shark excepting head, guts and skins to be retained to the point of first landing or transshipment. CMM 2010-07 also requires that CCMs take measures to encourage the release of live sharks that are caught incidentally and are not used for food or other purposes in fisheries not directed at sharks. CMM 2011-04 was then adopted and requires that no oceanic whitetip sharks (*Carcharhinus longimanus*) are retained in whole or in part, while CMM 2013-08 also requires that silky sharks (*Carcharhinus falciformis*) are not retained in whole or in part. Importantly, there is a requirement for 100% observer coverage in the PNAFTF (although some purse seine observer data are yet to be processed – SPC, pers. comm.), and while there is evidence of shark finning having occurred in the PNAFTF, the number of finning instances has dropped considerably in the recent period, and the overall number of animals concerned has also dropped dramatically (Table 16). The recent introduction and enforcement of CMM 2011-04 and 2013-08 appear to have been fundamental in this regard, in particular because silky shark was, by far, the species that was most commonly recorded as being finned (Table 16). It is noted that finning or possession of sharks in contravention of legislation is an offence, and the Assessment Team was provided with evidence to show that PNA member countries are prosecuting vessel masters as required. (Table 16). It is noted that finning or possession of sharks in contravention of legislation is an offence, and the Assessment Team was provided with evidence to show that PNA member countries are prosecuting vessel masters as required.

Turning back then to the issue of the CAB's score of 80 in respect of shark finning it is necessary to understand the context of the PI related to shark finning 2.2.2 (d). First, the relevant PI must be read in context. The shark finning PI is to be assessed within the context of the secondary species management. The assessment by the CAB of shark finning is a subset of: "Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and effectiveness of the strategy to manage secondary species." It is apparent from the context of the overall PI that management is required because there are risks to secondary species, such as sharks. An interpretation of the shark finning scoring that required no finning of sharks at all would be surprising. Properly understood PI 2.2.2 (d) is requiring the assessed fishery to have in place a management strategy that leads to it being likely/highly likely/high degree of certainty that shark finning is not taking place. PI 2.2.2 (d) cannot be understood and interpreted shorn of its context. The overall purpose is to assess the fishery to ensure it has in place a management strategy which is operative and effective to ensure shark finning is not taking place. Given the reduction in shark finning cases from 2012 to 2015, seen against the scale of the PNA fishery, the strategy has resulted in it being highly likely that shark finning is not taking place at any assessed time.

Secondly, the assessment process under the FCR is a common sense method to reduce risks to the marine environment. PNA with their 100 % observer team and strategies have significantly reduced shark finning to a very limited extent (only 32 reported cases in 2015). I accept the CAB's submission that any fishery would be vulnerable to failing the certification process if only one or two "saboteurs" deliberately finned sharks. If the Objector were correct in their interpretation, then one single incident of shark finning would make a fishery ineligible for certification. Such an approach is unrealistic, which is why PS 2.2.2 focuses on management strategies to reduce risk. The MSC standard could be rendered obsolete by such an absolutist position, resulting in many fisheries failing, greatly undermining the implementation of the MSC standards, which contribute significantly to the aims of sustainability and environmental protection. I further agree with the CAB that the Objector's interpretation would result in there being a perverse incentive for fisheries not to monitor the fishing activities.

Fourthly, if the Objector were correct in their interpretation there would be no need for three gradations of scores (60, 80, 100). The Objector's approach is binary: either there is shark finning or there is not. It must pass or a fail. That is inconsistent with the MSC decision to have three gradations of scoring which reinforces the reasoning above in respect of the proper context of PI 2.2.2 (d).

Lastly, as a separate point, but one which adds support to the reasoning above, the terminology used in PI 2.2.2 (d) must be read in a similar manner to PI 2.1.2, which uses identical language in the scoring component for shark finning (see PI 2.1.2 (d)). The terms used "likely" "highly likely" and "high degree of certainty" are defined for the outcome PIs, such as PI 2.1.2. as set out in table SA9. In this table a score of 80, which is "highly likely" requires probability to "greater than the 80th percentile". That is to say when a

CAB states that “it is highly likely that shark finning is not taking place” that is with a 20 % margin of error. Whilst PI 2.2.2 is a management and not outcome PI, Table SA9 should also be applied to PI 2.2.2 (d), because the test at PI 2.2.2 (d) is focusing on the outcome (stopping shark finning) as opposed to management strategy issues and secondly the language used at PI 2.2.2 (d) and PI 2.1.2 (d) is the same.

Therefore for these reasons, and without any reliance on the Interpretation Log, I find the PNA fishery justifies a score of 80 at PI 2.2.2 (d). Whilst the manner of the scoring by the CAB was arbitrary, this error was immaterial and the Fishery justifies a score of 80 for PI 2.2.2 (d) for the reasons I have given. I dismiss this ground of objection. I also note in concluding the error was immaterial, I have not been required to substitute any of the CAB’s facts or scientific judgements with my own; rather I have applied the FCR without the Interpretation Log to the CAB’s findings.

PI 2.2.2 (e) – Mortality of Unwanted Catch

Many of the submissions made here by the Objector are a repeat of their argument over whether there should be scoring or not when there are no main secondary species. I have explained above why I am unpersuaded by this general argument and I reject the argument as it is sought to be applied to this specific ground. Contrary to the Objector’s submissions in the written submissions at paragraph 155, the CAB did score the PI 2.2.2 at each of 2.2.2 (a) to (e) so there has been no contravention of SA 3.8.1.

Secondly, in respect of point 2, I do not consider the CAB was confused. It did not award a score of 100, because there was no regular review of all secondary species. A score of 80 was appropriate, because as there are no main secondary species, there is no negative environmental impact and so the CAB is entitled to score the PNA fishery at the 80 level.

On points 3, 4 and 5 it is accepted the CAB is required to consider SA 3.5.3.3. pursuant to SA 3.8.4. However, given there is no need for alternative measures, a five year review or the term “as appropriate” (because there are no main secondary species) this does not assist the Objector.

For the reasons given the CAB score of 80 for PI 2.2.2 (e) is neither arbitrary nor unreasonable and this ground is dismissed.

PI 2.2.3 (a) –secondary species information - adequacy of assessment

91. The Objector’s complaint is predicated again on the basis that notwithstanding the fact the CAB has assessed there to be no main secondary species, no score should be attributed for PI 2.2.3 (a). I disagree for reasons provided above. The CAB has not acted unreasonably or irrationally and this ground is dismissed.

PI 2.2.3 (b) Secondary Species Information – assessment of impact

This PI requires the CAB to be satisfied that some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status. The only score is 100. The CAB awarded a score of 100. The Objector objects because: i. it submits black and striped marlin are main secondary species; ii. there is a paucity of data for black marling so the test is not met; iii. the CAB failed to take a ‘precautionary approach’.

I reject this ground of objection for these reasons. First, a reasoned explanation has been provided above for why the black and striped marlin are not main secondary species.

Secondly, the CAB is an expert body and it has determined there is sufficient quantitative information for it to assess the impact of the Fishery on the minor secondary species. This is reinforced by GSA 3.6, the relevant MSC Guidance to this PI which states (my emphasis added):

For each scoring element in each component, it is expected that the assessment team will use their expert judgement to decide whether the information provided is adequate to estimate the stock status in the Outcome PI and to evaluate methods and measures in the Management PI.

If the management approach is very precautionary or the status of the species is very high or the catches and impact of those catches are very low, information with low precision may be adequate for both the estimation of current status and the performance of the management strategy. Conversely, where the status is unknown or based on limited information, CABs would be expected to be more precautionary in their assessment of information adequacy to support the Outcome or Management PIs.

Therefore, even with the relatively limited information in respect of black marlin, seen in the context of the Guidance and given black marlin is a very low catch in the PNA fishery (0.016 % of the PNAFTF catch), there is nothing arbitrary or unreasonable about the CAB's conclusion. The CAB appropriately, in the context of the Guidance, acknowledges the limited information for black marlin in their justification section of their report. For the same reasons, there has been no failure to adopt a precautionary approach. I also adopt and rely on the CAB's additional reasoning in their table on page 21, set out in their submissions filed on the last day of the hearing.

PI 2.2.3 (c) – secondary species – information adequacy management strategy

The CAB scored the Fishery at 80 for this PI. The scoring post for 80 required: "Information is adequate to support a partial strategy to manage main secondary species." The Objector disagrees on the basis it considers there are main secondary species and it challenges the CAB's view that the PNA fishery meets the 80 score by default because there are no main secondary species.

I have explained my reasons for considering why the CAB has not acted irrationally or unreasonably by (i) concluding there are no main secondary species and (ii) why a score of 80 is permitted when the score guide is only in respect of matters related to main secondary species when none exist. For these same reasons I reject this ground of objection.

PI 2.3.1 (b) ETP species outcome – direct effects

This PI focuses on the effects of the fishery on Endangered, Threatened or Protected (ETP) Species. The CAB scored the Fishery 100 for silky shark and 80 for other ETP species. A significant amount of text is set out in the CAB report to justify its findings at pages 169-172. The Objectors disagree because: i. it considers silky shark is over fished and the CAB cannot overlook this because silky shark is a small proportion of the overall catch and the Objector disputes the CAB's reliance on GSA 3.4.6; ii. The score of 80 for the other ETP species is incorrect because the CAB used the wrong standard form text in the report which incorrectly added the word "known" (to "known direct effects of the UoA are highly likely to not hinder recovery of ETP species") and thereby failed to assess the unknown direct effects.

On the first point, in relation to silky shark, the CAB rely on GSA 3.4.6 which states (emphasis added):

Teams should note that the impact of a UoA should here be assessed in terms of stock removals and the marginal F of the UoA and the percentages listed here should therefore not be confused with the percentages used to designate 'main' species, which are based on the proportion of a species as part of the total catch of the UoA (SA3.4.2).

I agree with the CAB this is relevant for the reasons given by the CAB. Even if the heading to this section of the Guidance (MSC UoAs Collectively Not Hindering Recovery) describes collective Units of Assessment, it is clear the paragraph relied upon is in the singular ("a UoA") and no good reason is put forward by the Objector as to why this section of the Guidance must be confined only to collective Units of Assessment, beyond what might be an erroneous heading. In any event there is no logic to confining the guidance therein contained to two or more Units of Assessment.

I further agree with the CAB that as silky shark comprises 0.05% of the PNA fishery and the entire WCPO un-associated purse seine fishery comprises 3 % of the overall silky shark, the CAB's position is justified and not arbitrary or unreasonable when concluding the Fishery has no significant detrimental direct effect on silky shark.

I also agree that, notwithstanding the error of template and the addition of the word “known” the CAB had in any event properly assessed the other ETP species as against known and unknown direct effects of the PNA fishery. The CAB had considered postrelease mortality which is an unknown effect. For the sake of completeness I also accept the CAB’s submissions in respect of the Objector’s ground related to “does not hinder” as set out in the CAB’s consolidated Notice of Objection and its response at page 74.

The CAB did not act in an arbitrary or unreasonable manner. The ground is dismissed.

S1 2.3.2 (b) ETP species management strategy – management strategy in place (alternative)

This PI requires the Fishery to have measures (score of 60) or a strategy (score 80) in place to ensure the Unit of Assessment does not hinder the recovery of ETP species. The CAB scored the PNA fishery 80 for all others species, but 60 for devil and manta rays. The Objector’s grounds are: i. the strategy in place for non ray species is not a strategy as defined in SA 8; ii. the assessment of the rays does not include the definition of “does not hinder”; iii. the CAB has failed to demonstrate the strategy or measures are in place.

On the first point, the CAB is an expert body which has carried out the assessment. The CAB is in the best position to assess whether the strategy is ‘cohesive’ and ‘strategic’. The Objector might disagree with these adjectives being applied and hope for a more detailed strategy, but this does not result in the CAB’s assessment being rendered arbitrary or unreasonable.

As to the second point, the CAB relies on the fact devil and manta rays are caught in other fisheries which have been certified, such as: the Solomon Islands Skipjack and Yellowfin Purse Seine Anchored FAD fishery, the Tri Marine Western and Central Skipjack and Yellowfin Tuna fishery and the Talley’s New Zealand Skipjack Tuna Purse Seine Fishery. This adds to the conclusion that the score of 60 by the CAB for ‘ray’ measures is not arbitrary or unreasonable. Further the CAB report at page 176 states:

Overall, there are considered to be measures in place that are expected to ensure the UoAs do 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 so two Conditions of Certification (#5 for UoA 1 and #6 for UoA 2) are introduced.

Whether or not the definition of “does not hinder” was expressly set out in the CAB report is a marginal issue. The CAB addressed the measures in place for rays and considered conditions were necessary and imposed them. There is nothing arbitrary or unreasonable about this approach.

The last point concerns whether the strategy/measures are actually in place. The CAB noted the CMMs were in place. There is nothing in this point. It is dismissed.

PI 2.3.2 (c)- ETP species management strategy – evaluation

The CAB scored the Fishery a score of 80 for the evaluation of its management strategy. The Objector raises three points: i. the measures required for a score of 60 require plausible arguments based on expert knowledge and the CAB has failed to identify the expertise; ii. the wrong version of the scoring guide was used and the PI should be re-scored because of the confusion; iii. the CAB in scoring 80 failed to demonstrate the appropriate test for “objective basis for confidence” was met as expanded in paragraphs 212 to 217 of the Objector’s written submissions.

I accept the CAB has based its assessment on the WCPFC Scientific Committee. The CAB report states:

The requirement for 100% observer coverage and a comprehensive sampling regime allow for the collection of data at a very high level, and research is reviewed and management measures proposed through the WCPFC SC process.

This meets the test set out in the PI and cannot be viewed as an arbitrary or unreasonable conclusion by the MSC given the expertise of the WCPFC SC.

As for the discrepancy in the FCR ground, the CAB report is erroneous in referring to “measures/strategy”, as the FCR prescribes “partial strategy/strategy”. This ground was not referred to by the parties in oral argument at the hearing and no party required the MSC to clarify the terms of the FCR. I accept the Objector is correct and the wrong standard was applied by the CAB. However, this ground must be dismissed as no party has advanced a proper case explaining the difference between a partial strategy and measures. I accept there is a difference between a strategy and measures, but I was not referred to the subtle difference between measures and a partial strategy. Probably correctly, as I accept the CAB’s submission that: “the difference in our professional view is minor” and this approach cannot be said to be arbitrary or unreasonable.

The third point refers back to the first point by way of querying the role of experts. For similar reasons as above, I reject this ground and adopt the reasoning set out in page 25 of the CAB’s submissions filed on the second day of the hearing and their submissions set in in page 82 of the consolidated Notice of Objection and Response. The CAB’s reliance on WCPFC SC reports and guidance is neither arbitrary nor unreasonable. This ground is dismissed.

SI 2.3.2 (e) ETP Management Strategy – review of alternative measures to minimise mortality

The Objector in its admirably forensic manner casts doubt on the justification for a score of 100, which requires: “a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.” The CAB’s justification in its report states:

There is an ongoing research programme to improve understanding of the interactions and implications of the different WCPO fisheries on non-target species, and ecosystem and bycatch mitigation is a standing item on the SC agenda (e.g., WCPFC 2016b). Measures are implemented as appropriate. The PNAFTF meets the SG100 level of performance.

This is a poorly reasoned response for a score of 100. That being said the CAB has provided ample data in its response to the Notice of Objection at pages 85 to 86 and on pages 26 and 27 of its written submissions filed on the last day of the hearing to justify the score of 100. In the context that the measures must be “as appropriate”, I accept sufficient aspects have been identified by the CAB, with the result that its score of 100 is not unreasonable or arbitrary. I also accept the CAB is correct, given its expertise and given the Objector relied on no specific evidence, that ETP does not include secondary species. The Objector at paragraph 27 of its post-hearing submissions, did not dispute this. The Objector, therefore, has made an error which has coloured its analysis of the CAB’s response.

The CAB submit there is “ample evidence provided to demonstrate there is an on-going, annual process to review” the measures. I accept that. For example:

CMM 2010-07 measures such as national plans of action for sharks, reporting catches of specific sharks to species; addressing shark finning;

CMM 2011-04 – measures such as: prohibitions on retaining, trans-shipping, storing or landing oceanic whitetip sharks;

CMM 2013-08 - measures such as: prohibitions in respect of silky shark.

PI 2.3.3 (a) ETP species information – adequacy for assessment of impacts

117. This ground is a repetition of the issue of whether or not it is appropriate for the CAB to rely on the fact the silky shark catch is a small proportion of the overall PNA fishery catch. It adds nothing to the earlier ground which rely on this point and is dismissed for the same reasons. The CAB’s decision was not arbitrary or unreasonable when scoring 100 for silky shark.

P1 3.1.1 Legal/Customary Framework

I consider the CAB have correctly followed FCR 7.10.5.3 and awarded a score of 95. I accept the CAB has not used an average. There is nothing arbitrary or irrational about the overall performance indicator score of 95.

PI 3.1.1 (a) – Compatibility of Laws or standards with effective management

The CAB scored the PNA fishery with a score of 100 for this PI, which means:

“There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.”

The Objector disagrees for the following reasons: i. the CAB failed to evidence the assertions used in the justification contained in the CAB report to meet the PI set out in the paragraph above; ii. rather than stating the laws “deliver” the outcomes, the CAB report noted it “seeks” to ensure relevant outcomes; iii. the report has not dealt with flag state participants as it should pursuant to SA 4.3.2.4.

It is fair to say the CAB has expanded on its reasoning in both its response to the Notice of Objection at pages 96 to 100 and at paragraphs 9 to 21 of its final day hearing submissions. However, much of the relevant background is set out in the CAB report at pages 70 to 80, which provides a useful overview, at Figure 31, and with a list of the relevant legislation for each nation state member of the PNA at pages 78 to 79. Clear reference is made to the “Dropbox” resource to permit stakeholders to access these relevant laws. It is important the “justification” for the scoring of the Principle 3 Performance indicators is read in the context of this information.

On this point generally, I agree with the CAB that the overall submission made by the Objector in respect of big eye tuna stock is inapposite, because one cannot extrapolate the trajectory of only one species to condemn the effectiveness of the legal system. I accept any problems with big eye tuna may have other, regional causes.

On the first point, I have little hesitation in concluding the CAB’s assessment is correct. The CAB, through its expert, was satisfied, after his analysis, that each nation of the PNA complied with the standard. There was no challenge to the expertise of Mr Japp. The Objector relied on no Principle 3 evidence of its own. The CAB’s overall conclusion was concisely put that:

The PNAFTF operates within three broad management regimes. The overarching management regime is underpinned by the RFMO (WCPFC) to which all members of the PNA have obligations under the convention including the application of WCPFC conservation and management measures (CMMs). Secondly each member state (and those part of the PNA) has national legislation inclusive of fisheries laws which are binding legal instruments consistent with the principles and provisions of UNCLOS, UNFSA and CBD. A third level within the management framework is the PNA level (Nauru Agreement) with agreed implementing arrangements including Minimum Terms and Conditions between signatories. The Nauru Agreement is therefore integrated into the legal (fisheries) framework at a National level which in turn has obligations under the WCPFC convention.

The short answer to this point is that the CAB has provided the links to each national legislature’s relevant legislation, but the Objector has not responded explaining which nation state, through deficient laws, is non-compliant. The Objector complains that the CAB must detail all this in the report and it is not its role to go to links and read legislation. I disagree. The CAB has explained its expert has considered the legislation and other materials and is satisfied the standard is met. If the Objector wishes to contest this, it cannot sit on its hands and complain, but do no more. It must study the legislation and provide its analysis of defects. It has chosen not to do so. The CAB report is already 392 pages long. There are eight PNA countries. If the CAB were required to detail each aspect of the eight national laws which complied with the standards, the report would become unwieldy. This ground is dismissed.

I reject the complaint referring to the use of the word “seek”. This is no more than a form of phrasing. The author had the standard well in mind.

The third point is also without merit, given the further detail set out in paragraphs 15 to 17 of the CAB final day written submissions on Principle 3. This document will also be incorporated as an appendix to this decision, for reasons of transparency. In short, I accept the CAB's response that "foreign flag vessels are either full members of the WCFPC or are CMMS (as fully listed in the CABs response to the PCDR comments by the IPNLF)...being a signatory to the convention is binding and explicit acceptance of the CMMs". This is the view of the expert, and paragraph 37 of the Objector's post hearing submissions do not meaningfully or adequately engage with Mr Japp's further explanation and information.

There is nothing arbitrary or unreasonable about the CAB's approach to PI 3.1.1 (a).

SI 3.1.1. (b) – resolution of disputes

The CAB scored the Fishery with 80, meaning: "The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA". The Objector disagrees because: i. the CAB's justification in the report is inadequate; and ii. specific concerns are raised about the nature of the PNA Treaty dispute resolution system, first in respect of Article 8 (2) of the Palau Agreement and secondly as to whether PNA Instruments are a subregional agreement for the purposes of Article 30 of the UN Fish Stocks Agreement.

The CAB's expert has studied the issues, produced a detailed report and supported his conclusions in the response to the Notice of Objection and in further written submissions on Principle 3, filed on the second day of the hearing. No evidence or information on these issues has been filed by the Objector. Specifically no evidence has been filed by the Objector, or submissions made, related to whether the legal dispute mechanisms has been ineffective in dealing with "most issues". Indeed, no party has pointed me towards any information related to unresolved disputes. Given the CAB's position, it is not difficult to conclude there are no or very few outstanding legal issues which have been incapable of resolution by "transparent mechanisms". The Objector complains negotiation cannot be sufficient, but unless the Objector can point to examples of where negotiation has failed and there are outstanding disputes, its argument is substantially weakened.

It is relevant that the CAB did not grant a score of 100 on this PI, acknowledging, correctly, the dispute resolution mechanisms in force are not as effective as they could be for an award of 100.

Further, I am unpersuaded I should embark upon the journey to determine (even if I had a jurisdiction) whether or not the PNA Instruments are regarded as sub-regional agreements for the purposes of the UN Fish Stocks Agreement. The CAB asserts they are, the Objector states they are not. Neither counsel addressed me on this issue and none of the relevant legal materials, including the UN Agreement, were put before me. I decline to rule on this issue. Even leaving this issue aside, I am satisfied that "most issues" are capable of dispute resolution, noting of course, that the score of 80, implies not all legal disputes need be resolved.

I am satisfied, notwithstanding the clear points made by Mr Davey QC and his team, that the CAB has reached a decision that is not arbitrary or unreasonable. The presentation of the information by the CAB on this issue may not be as transparent and as clear with appropriate references as would be ideal, but that does not result in the CAB's conclusions being arbitrary or unreasonable. It is clear an expert has assessed this matter, formed a view and in the absence of opposing expert assessment and information, I prefer the CAB's position on this issue. This ground of objection is dismissed.

PI 3.1.1 (c) Legal/Customary Framework – respect for rights

133. The CAB scored the Fishery 100 for this PI. This requires: "The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2".

134. As the Objector properly points out, FCR SA 4.3.8 states: “The team shall interpret “formally commit” in scoring issue (c) at SG100 to mean that the client can demonstrate a mandated legal basis where rights are fully codified with the fishery management system and/or its policies and procedures for managing fisheries under a legal framework.”

In essence, the Objector submits this test is not met because the CAB’s reliance on the WCPFC Convention (Convention On The Conservation And Management Of Highly Migratory Fish Stocks In The Western And Central Pacific Ocean) to upgrade the score from 80 at the PCDR to 100 in the final CAB report is misplaced, given the Convention does not embrace the protection of rights. The Objector makes these submissions at paragraphs 303 to 316 of its written submissions, but has not provided a copy of the Convention or fully argued the matter.

The CAB’s rational for a score of 100 is clearly set out:

PNA objectives implicitly include optimizing the benefits of tuna resources for members. Under the WCPFC convention there is a mechanism formally committing to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. This includes Under Article 7 of the WCPFC : Implementation of principles in areas under national jurisdiction : the needs of each country (national jurisdiction) is acknowledged viz. :

The principles and measures for conservation and management enumerated in article 5 shall be applied by coastal States within areas under national jurisdiction in the Convention Area in the exercise of their sovereign rights for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks.

The members of the Commission shall give due consideration to the respective capacities of developing coastal States, in particular Small Island Developing States, in the Convention Area to apply the provisions of articles 5 and 6 within areas under national jurisdiction and their need for assistance as provided for in this Convention.

Further, this article explicitly embraces the commitments of each country under their national legislation (refer to the numerous Acts, Titles and regulations) that commit to protecting the rights of the traditional folk to benefit from the resources under their jurisdiction.

Further, under Article 10 of the commission (para3.a-j) the rights of SIDS and coastal communities is explicitly stated as well as the “the record of compliance by the participants with conservation and management measures”. SG100 is met

The CAB in its submission filed on the second day of the hearing also made further submissions on the WCPFC Convention at paragraphs 22 and 23. These were not responded to in the Objector’s post hearing written submissions.

I have not received detailed submissions from counsel on the proper interpretation, structure and application of the WCPFC Convention in the PNA nation states. Therefore, I am not in a position to rule definitely on its application, even it were appropriate for me to do so. However, looking at the matter shortly in the context of the CAB’s approach to the FCR, the following is relevant: Article 7 (1) states:

The principles and measures for conservation and management enumerated in article 5 shall be applied by coastal States within areas under national jurisdiction in the Convention Area in the exercise of their sovereign rights for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks.

139. Article 5 (h) states: “take into account the interests of artisanal and subsistence fishers”

140. There is limited doubt that when these provisions of the Convention are read with the CAB’s expert justification, and its explicit reference to national legislation, that the CAB’s conclusion is not arbitrary or unreasonable. There exists a mechanism (the Convention and national legislation) to formally commit (a legal framework exists for policies and procedures) to the legal rights created explicitly or by custom on people dependent on fishing for foods and livelihood (the interests of artisanal and subsistence fishers).

There is nothing irrational or arbitrary about this conclusion by the CAB and the PI/FCR does not require a codified system of rights in each nation state. This ground of objection is dismissed.

PI 3.2.2 (a) – decision making processes

The PI requires the Fishery to have “fishery-specific management system includ[ing] effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.” The CAB scored the fishery 80, the Objector disagrees.

The main thrust of the Objector’s submissions is that whilst at the WCPFC Convention level there are established decision making processes, there is no evidence or justification provided by the CAB in the report at the PNA or national levels. In the light of the CAB’s response to the Notice of Objection, the Objector submits their response is “rather opaque”. Secondly, the Objector states the CAB failed to have regard to the need to consider whether the Fishery in its decision making took account of “wider implications”.

I am satisfied the CAB finally produced a clear and full response to the Objection at paragraph 24 of its Principle 3 submissions filed on the last day of the hearing. I accept the CAB’s rationale and logic and conclude its score of 80, in the light of this information was neither arbitrary nor unreasonable when seen in the light of the two points made by the Objector. That is because the CAB has demonstrated, in reliance on their expertise, that: i. the decision making at the national, PNA and WCPFC levels are all integrated; ii. the PNA decision making tools and arrangements are established; and iii. it is implicit that states who are signatories to the Nauru Agreement and all its decision making tools, and states that are signatories to the WCPFC Convention, are obligated to comply with decisions including responsibility for implementing management tools, and this extends to foreign flag vessels fishing on behalf of those states.

I accept the deployment of the CAB’s expert knowledge and investigation into the workings of decision making related to the Fishery at the international, regional and national level. The CAB’s approach is well within the range of reasonable responses and this ground of objection is dismissed.

PI 3.2.2 (c) – decision making processes- precautionary approach

This PI is a pass or fail based on whether the Fishery can establish to the CAB that:
“Decision-making processes use the precautionary approach and are based on best available information.”

146. The Objector complains by providing two examples where the Fishery does not use a precautionary approach and complains that at the national level only laws related to two of the eight PNA countries were provided in the CAB report and even those examples were insufficiently clear. The CAB provided a full response to the Notice of Objection and listed the national legislation for another five of the PNA states at page 121 of its response to the Notice of Objection. Further, the CAB explained why the use of 1 nautical mile to distinguish FAD from non FAD fishing (one of the Objector’s two examples) alongside other measures was precautionary in its Principle 3 written submissions filed on day 2 of the hearing. The CAB also explained in the same document that whilst there was no commitment to the precautionary approach at the PNA level, this was applied both at the WCPFC and national levels and the CAB, in its expert judgement did not doubt the Fishery was committed to the precautionary approach. The CAB’s overall response on this issue is neither arbitrary nor unreasonable and the ground of objection is dismissed.

PI 3.2.2 (d) – decision making processes –accountability and transparency

147. This PI was scored by the CAB at the 80 level, requiring: “Information on the fishery’s performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.”

The Objector's response essentially can be distilled to a challenge that the CAB's reasoning is insufficiently robust. It is, correctly, pointed out that SA 4.8.5 and 4.8.6 apply. This requires some additional language to the interpretation of the relevant PI. The Objector puts it this way:

So, for a score of SG 80, there must be the following in respect of each of the relevant levels (i.e. WCPFC, PNA and national): (a) "at least a general summary of information on subsidies, allocation, compliance and fisheries management decisions"; and (b) "information on decisions, fisheries data supporting decisions, and the reasons for decisions.

Ample information has been provided to meet this test at pages 125 and 126 of the CAB's consolidated response to the Notice of Objection, combined with the valid point it makes in its final day written submissions on Principle 3, at paragraph 27, namely, much of the required information is available on request. Indeed, the CAB did request some information and reviewed it against this part of the PI, to justify a score of 80. There is no adequate response from the Objector in the light of the information that the CAB requested the PNA minutes of meetings and adjudged them to be sufficiently transparent. Indeed, whilst the Objector quotes SA 4.8.5 and 4.8.6, which detail information which should be made available "on request", there is no information provided by the Objector it requested this information and was refused, such that the necessary transparency has been defeated by the Fishery. Seen overall, relying on the CAB's expertise, their decision to award a score 80 is well within the range of reasonable responses and this, last, ground of objection is also dismissed.

Conclusion

Having considered all the information, the Objection is dismissed. The Objector has forensically and appropriately taken the CAB to task on many parts of its report. As can be seen from my decision, it has been only through the objection process that further information and justification has emerged to support the conclusions made by the CAB. That should be seen as part and parcel of an appropriate and helpful objection process. Whilst I have had to rely on information provided by the CAB since, at no stage has this called into question its determination on the Fishery certification, such that a remand was required.

However, the CAB's conclusions are now, in some areas, more transparent, clearer and more robust. For that reason all written submissions by all three parties shall be placed together and published (if they have not already been published on the MSC website) alongside this decision. This shall include:

- the Objector's 54 page written submissions for the hearing;
- the CAB's 27 page written submission for the hearing;
- the Fishery Client's 21 pages of presentation/submissions for the hearing;
- the CAB's 32 pages of further written submissions filed and served on day 2 of the hearing;
- the Objector's 11 page post hearing supplementary reply and Mr Purves 11 paragraph email on the subject of WCPFC2016g;
- the CAB 21 page letter and submissions dated 30 January 2018 which were accepted;
- the CAB's 7 page letter and submissions dated 30 January 2018 were rejected;
- the Fishery Client's email dated 30 January 2018 and 14 pages of attached submissions;
- the correspondence related to the MSC press release on the subject of the Unit of Assessment.

It may be noted that in the decision I have made little reference to the Fishery Client's submissions. They have not been overlooked or ignored, but the Objector's challenge was accurately focused on the actions and omissions of the CAB, therefore I have focused on their rival submissions.

I have included above the page numbers of the written submissions. These reached nearly 200 pages. The consolidated "pleadings" ran to 126 pages. It would have taken hours to count the length of the hearing bundle. Whilst I have been very considerably assisted by the involvement of all the lawyers in reaching my decision, the proportionate approach to an independent adjudication may have been somewhat lost in the forensic analysis.

Lastly, given the volume of paperwork, I have not commented on every aspect of every submission made by the Objector, but have provided my reasons for the main and salient submissions made both in writing and orally. Where I have not addressed an issue, it has not been ignored; rather, I have not found it sufficiently persuasive to require further reasoning.

Order

Pursuant to FCR PD 2.7.1.1 the determination of the CAB is hereby confirmed.

John McKendrick QC
Independent Adjudicator 28 February 2018

Confirmation of objection documents to be included in PCR

www.Acoura.com

Mr John McKendrick QC
MSC Independent Adjudicator

Marine House
1 Snow Hill
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EC1A 2DH

 **ACOURA**
Fisheries Department
6 Redheughs Rigg
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Edinburgh, EH12 9DQ

T: 0131 335 6662
E: fisheries@acoura.com

12 March 2018

Dear Sir

Please find below the CAB's proposed response to the IA decision dated 28 Feb 2018. Acoura hereby seek your sign off that the documents listed, and sent by ecopy, are correct and as you had requested?

Should you have further questions then please contact Jason on 0044 (0) 7515 586 596

Yours sincerely



Dr Jason Combes
Head of Fisheries

Enc: copy of all documents listed below

In regard to the Final Decision of the Independent Adjudicator that was published on MSC.org on 28 February 2018, paragraph 151 included directions for the CAB to publish the following on MSC.org;

151. However, the CAB's conclusions are now, in some areas, more transparent, clearer and more robust. For that reason all written submissions by all three parties shall be placed together and published (if they have not already been published on the MSC website) alongside this decision. This shall include:

IA instruction	File named with the prefix:
<i>a. the Objector's 54 page written submissions for the hearing;</i>	Item a
<i>b. the CAB's 27 page written submission for the hearing;</i>	Item b
<i>c. the Fishery Client's 21 pages of presentation/submissions for the hearing;</i>	Item ci Item cii
<i>d. the CAB's 32 pages of further written submissions filed and served on day 2 of the hearing;</i>	Item di Item dii
<i>e. the Objector's 11 page post hearing supplementary reply and Mr Purves 11 paragraph email on the subject of WCPFC2016g;</i>	Item ei. Item eii
<i>f. the CAB 21 page letter and submissions dated 30 January 2018 which were accepted;</i>	Item fi Item fii
<i>g. the CAB's 7 page letter and submissions dated 30 January 2018 were rejected;</i>	Item g
<i>h. the Fishery Client's email dated 30 January 2018 and 14 pages of attached submissions;</i>	Item hi Item hii.
<i>i. the correspondence related to the MSC press release on the subject of the Unit of Assessment.</i>	Item i

In addition the CR has provision for CAB actions to be taken

CR 2.0: PD2.11 Final documentation of an objection on the MSC website

PD2.11.1 In accordance with FCR 7.19.1, the Public Certification Report shall include all decisions made by the independent adjudicator and shall indicate all the changes to the Final Report and Determination that have been made as a result of the objection.

There will be no changes to the final report other than to append items in table below and then transform it into a Public Certification Report.

CR2.0: PD 2.11.1	File named with the prefix:
IA decision 20171010	#1
IA decision 20171101	#2
IA decision 20171115	#3
IA decision 20171124	#4
IA decision 20171205	#5
IA decision 20171207	#6
IA decision 20171220	#7
IA decision 20180228	#8

END

Confirmation of Documents 1



Francesca Gage <F.Gage@bwblp.com>

○ Jason Combes; ○ Acoura Fisheries; ○ PNATunaObjection ▾

RE: PNA final actions

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.



Dear Jason,

The IA has confirmed he approves the CAB's response.

Kind regards,

Francesca Gage
Paralegal
P & R Law
Bates Wells Braithwaite

DD: +44 (0)20 7551 7816 | Tel: +44 (0)20 7551 7777 | Web: www.bwblp.com



From: Jason Combes [<mailto:jason.combes@acoura.com>]
Sent: 12 March 2018 22:42
To: Francesca Gage; PNATunaObjection
Cc: Acoura Fisheries
Subject: PNA final actions

Dear IA McKendrick QC and Ms Cage

Please find attached for your consideration. I will, upon your request, send over the bundle of documents referred to within.

Once this is complete the necessary postings to MSC.org will occur including the PCR leading to the fishery recertifying.

Yours sincerely

Jason

Jason Combes
Head of Fisheries

Tel: +44 (0)131 335 6669 | +44 (0)7515586596
Web: www.acoura.com

Confirmation of Documents 2



Mon 19/03/2018 09:54

Francesca Gage <F.Gage@bwblp.com>

PNA Tuna - final actions

To: Jason Combes

Cc: Acoura Fisheries; PNATunaObjection

You replied to this message on 19/03/2018 10:47.

Dear Jason,

The IA has looked at the documents you sent over and confirmed they are correct.

Kind regards,

Francesca Gage

Paralegal

P & R Law

Bates Wells Braithwaite

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Confirmation of Documents 3

>Delete Response Quick Steps Forward Move Tags

Mon 19/03/2018 10:48

Jason Combes
RE: PNA Tuna - final actions

To: Francesca Gage

Cc: Acoura Fisheries; PNATunaObjection

 Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Francesca and IA McKendrick

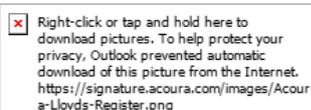
Thank you. Hereby acknowledging receipt. Acoura will now prepare and make the necessary postings on MSC.org including the recertification

Jason Combes
Head of Fisheries

Tel: +44 (0)131 335 6669 | +44 (0)7515586596

Web: www.acoura.com

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Acoura are part of the Lloyd's Register group and provide a range of specialist services and solutions aimed at protecting businesses who operate across the food and drink supply chain

 **SAVE PAPER** - Please do not print this email unless absolutely necessary.

From: Francesca Gage <F.Gage@bwblp.com>

Sent: Monday, March 19, 2018 09:54

To: Jason Combes <jason.combes@acoura.com>

Cc: Acoura Fisheries <fisheries@acoura.com>; PNATunaObjection <PNATunaObjection@msc.org>

Subject: PNA Tuna - final actions

Dear Jason,

The IA has looked at the documents you sent over and confirmed they are correct.

Kind regards,

Francesca Gage
Paralegal
P & R Law
Bates Wells Braithwaite

Appendix 10: WCPFC work plan for skipjack tuna and yellowfin tuna as agreed at WCPFC meeting 2015

Extracted from WCPFC 2015, Attachment Y:

Each harvest strategy developed in accordance with this CMM shall, wherever possible and where appropriate, contain the following elements:

- a. Defined operational objectives, including timeframes, for the fishery or stock ('management objectives')*
- b. Target and limit reference points for each stock ('reference points')*
- c. Acceptable levels of risk of not breaching limit reference points ('acceptable levels of risk')*
- d. A monitoring strategy using best available information to assess performance against reference points ('monitoring strategy')*

- e. *Decision rules that aim to achieve the target reference point and aim to avoid the limit reference point ('harvest control rules'), and*
- f. *An evaluation of the performance of the proposed harvest control rules against management objectives, including risk assessment ('management strategy evaluation')."*

	Skipjack	Yellowfin
2015	<p>Record management objectives for the fishery or stock (a).</p> <p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> • Commission record management objectives for skipjack noting advice provided by the SC on a range of target reference points. • Commission agree to a Target Reference Point for skipjack. 	
2016	<p>Record management objectives for the fishery or stock (a).</p> <p>Agree acceptable levels of risk (c).</p> <p>Agree monitoring strategy (d).</p> <p>Develop harvest control rules (e).</p> <p>Management strategy evaluation (f)</p> <ul style="list-style-type: none"> • SC provide advice on a monitoring strategy to assess performance against reference points. • SC provide advice on a range of performance indicators to evaluate performance of harvest control rules. • Commission record management objectives for skipjack. • Commission agree to acceptable levels of risk for breaching Limit Reference Point for skipjack. • Commission agree to a monitoring strategy to assess performance against reference points. • Commission agree performance indicators to evaluate harvest control rules 	<p>Record management objectives for the fishery or stock (a).</p> <p>Agree acceptable levels of risk (c).</p> <ul style="list-style-type: none"> • Commission agree to acceptable levels of risk for breaching Limit Reference Point for yellowfin tuna. • Commission record management objectives for yellowfin and ask SC for a range of target reference points reference points.
2017	Develop harvest control rules (e).	Agree Target Reference Point (b).

	<p>Management strategy evaluation (f).</p> <ul style="list-style-type: none">• SC provide advice on candidate harvest control rules based on agreed reference points.• Commission consider advice on progress towards harvest control rules.	<ul style="list-style-type: none">• SC provide advice on range of Target Reference Points for yellowfin.• Commission agree a Target Reference Point for yellowfin.
--	---	--